MONTEITH

PROJECT GRACE
THE NHC DOWNTOWN LIBRARY AND CAPE FEAR MUSEUM

Addendum No. 1

Date Issued: June 6, 2023

This addendum includes:

RFI Responses for questions 1-4, 7-13, 16-19, 21-25

Revisions to Specs and Drawings - See Page 31 of this Document
to view Architects addendum with list of revisions.

For questions, please contact Brian Stamp, bstamp@monteithco.com

RFI Transmittal

LS3P | 101 N. Third Street Suite 500 Wilmington NC 28401 United States

PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	BDA System	RFI ID:	1-PREC
TYPE:	RFI	TRANSMITTAL ID:	00063
PURPOSE:	Answered	VIA:	Email

QUESTION:

I don't find on the drawings/specs calling out for us to supply and install a BDA system. Are we to provide?

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)
Remarks:

- **#1 – Electrical**
  - *I don't find on the drawings/specs calling out for us to supply and install a BDA system. Are we to provide?*
  - N&B is providing infrastructure for the BDA system.

Brandon R. Nevin
Associate | HVAC

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FROM

NAME	COMPANY	EMAIL	PHONE
Iván Martínez	LS3P	ivanmartinez@ls3p.com	910-397-3649

TO

NAME	COMPANY	EMAIL	PHONE
Brian Stamp	MONTEITH CONSTRUCTION	bstamp@monteithco.com	704.405.1011

RFI Transmittal

DATE: 6/2/2023
ID: 00063

NAME	COMPANY	EMAIL	PHONE
	CORP		

COPIES:

Levi Worthington (LS3P)
Sarah Moon (LS3P)

RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	Voice/Data	RFI ID:	2-PREC
TYPE:	RFI	TRANSMITTAL ID:	00064
PURPOSE:	Answered	VIA:	Email

QUESTION:

Can you confirm on whether the following systems were to include infrastructure only or turn key. Voice / Data - Spec sections 271100, 271116, 271323 and 271513
A/V system - Spec section 274015 and 274126
Conductors and cables for electronic security - Spec section 280513
Access Control - Spec section 281300
Video Surveillance - Spec section 282000
Intrusion Detection - Spec section 283100

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)
Remarks:

- **#2 – Electrical**
  - *Can you confirm on whether the following systems were to include infrastructure only or turn key.*
  - *Voice / Data - Spec sections 271100, 271116, 271323 and 271513*
    A/V system - Spec section 274015 and 274126
    Conductors and cables for electronic security - Spec section 280513
    Access Control - Spec section 281300
    Video Surveillance - Spec section 282000
    Intrusion Detection - Spec section 283100
  - AV Specifications are infrastructure only, excluding Projectors (274126). Remaining specification sections are turn-key.

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RFI Transmittal

DATE: 6/2/2023
ID: 00064

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Desks/Bench @ 1st floor	RFI ID:	3-PREC
TYPE:	RFI	TRANSMITTAL ID:	00040
PURPOSE:	Answered	VIA:	Email

QUESTION:

It appears that there are a couple of desks and a bench on the first floor for which there are no details.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)

The dashed lines on A-101 at rooms M101, L105, and L114 are reception/ticketing desks and are to be included in FF&E. There are two built-in benches at Large Print L110 which are elevated on A-712. We will provide an additional detail in the IFC set.

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	BAS Contractor	RFI ID:	4-PREC
TYPE:	RFI	TRANSMITTAL ID:	00065
PURPOSE:	Answered	VIA:	Email

QUESTION:

I would like to formally ask the question for the "Project Grace" project bidding in Wilmington. Sheet M701, permit set dated 5/22/23, notes approved DDC vendors as "JCI Only". Since New Hanover County already has an existing Niagara Supervisor/BAS Front End, is it the intention to sole source JCI as the only BAS Contractor for this project, or will other DDC manufacturers be allowed to competitively bid this project?

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)

- **#4 – HVAC**
  - *I would like to formally ask the question for the "Project Grace" project bidding in Wilmington. Sheet M701, permit set dated 5/22/23, notes approved DDC vendors as "JCI Only". Since New Hanover County already has an existing Niagara Supervisor/BAS Front End, is it the intention to sole source JCI as the only BAS Contractor for this project, or will other DDC manufacturers be allowed to competitively bid this project?*
  - N&B to provide owner preferred alternate for BAS system

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FROM

RFI Transmittal

DATE: 6/2/2023
ID: 00065

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TO

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Sarah Moon (LS3P)

RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Detail C4/A-406 DWG	RFI ID:	6-PREC
TYPE:	RFI	TRANSMITTAL ID:	00041
PURPOSE:	Answered	VIA:	Email

QUESTION:

Can you please ask LS3P to send me a dwg or dxf file of the C4/A406 detail for only the balcony panel railing. This will allow us to capture the desired pattern for CNC as well as get a cost break down for pricing.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
Please see Associated File for DWG of C4/A-406.

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TO

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DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NUMBER	SCALE	SIZE
1	6/1/2023	DraftingView-TYPICALLIBRARYBALCONYPANELRAILING.dwg			

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Levi Worthington (LS3P)

RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	DDC Controls	RFI ID:	7-PREC
TYPE:	RFI	TRANSMITTAL ID:	00058
PURPOSE:	Answered	VIA:	Email

QUESTION: Will DDC controls be by the mechanical contractor or the owner.

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)

- **#7 – HVAC**
  - *Will DDC controls be by the mechanical contractor or the owner.*
  - DDC controls will be by the mechanical contractor.

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RFI Transmittal

DATE: 6/2/2023
ID: 00058

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	ACM coping	RFI ID:	8-PREC
TYPE:	RFI	TRANSMITTAL ID:	00044
PURPOSE:	Answered	VIA:	Email

QUESTION:

I'm reviewing the drawings and see references on the elevations (ex. C1/A202) reference to ACM Coping at top of wall level 3.When I go to the details, they are showing a brakemetal coping typical. Can you clarify coping is to be brakemetal (assumed as by roofer) as shown on the details typical B4/A511.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
There is no ACM coping at top of wall level 3. This is an old note that needs updated on the exterior elevations. However, it is not typical brake metal. It is a pre-engineered parapet cap, not field-formed, and has a full steel sub-frame. We will include a spec section in the addendum.

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Unitized curtain wall system	RFI ID:	9-PREC
TYPE:	RFI	TRANSMITTAL ID:	00042
PURPOSE:	Answered	VIA:	Email

QUESTION:

the specs section 84423 item 2.2 B.3 they are asking for a unitized system. Is the architect going to hold onto a unitized curtain wall system. sect

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
The curtain wall system will be stick, not unitized. We will update the spec accordingly. See exterior elevations on A-101 & A-102 and storefront/curtain wall schedules on A-611, A-612 & A-613 for butt joint and mitered locations.

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Panel Signage	RFI ID:	10-PREC
TYPE:	RFI	TRANSMITTAL ID:	00043
PURPOSE:	Answered	VIA:	Email

QUESTION:

Panel Signage is specified (101423 Panel Signage), but no signage drawings or schedule has been provided.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
The panel signage is for code required signage only, all other signage is OFOI. Please see attached Associated File for BOD and general notes. We will include a signage column in the door schedule in the IFC set.

FROM

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DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NUMBER	SCALE	SIZE
1	6/1/2023	Panel Signage BOD.png			

COPIES:

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Amount of signage?	RFI ID:	11-PREC
TYPE:	RFI	TRANSMITTAL ID:	00054
PURPOSE:	Answered	VIA:	Email

QUESTION:

Section 011000 Summary details: Building Signage, Interior room signage beyond code required signage and Wayfinding Signage is Owner-Furnished / Contractor Installed. Can you provide amount of signage for install costs to be figured.

SUGGESTION:

Use 125, see preliminary schedule below. This is my best estimate at this time. Signage has not been designed at this time.

ANSWER:

Response (Answered) from: Charles Boney (LS3P)
Remarks:
125. I developed a quick schedule and this is my best estimate at this time.

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Legal advertisement	RFI ID:	12-PREC
TYPE:	RFI	TRANSMITTAL ID:	00052
PURPOSE:	Answered	VIA:	Email

QUESTION:

If we have proprietary bids (door hardware, control systems, what else?) , we will need to announce them at a public meeting and in a legal advertisement. This could be in a newspaper ad for a pre-bid conference.

SUGGESTION:

ANSWER:

Response (Answered) from: Charles Boney (LS3P)
Remarks:
That is correct: a newspaper ad should announce the pre-bid conference AND list the proprietary alternate(s), and we will review them at the pre-bid conference.
We have asked Newcomb & Boyd to develop their controls spec around 3 equals, with Johnson Controls as the preferred vendor. For door hardware, I think we can treat this as an allowance as Brian S has suggested. We don't have time for a full schedule.

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Charles Boney (LS3P)

RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Rail and metal panel on floors	RFI ID:	13-PREC
TYPE:	RFI	TRANSMITTAL ID:	00045
PURPOSE:	Answered	VIA:	Email

QUESTION:

Stair Drawings A406,408,410 - can the rail and metal panel on floors be noted as drywall partitions. At under side of stairs revised to drywall in lieu of metal panels.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
We will formally re-issue these sheets in Addendum #1 to provide clarification and the correct design intent. The perforated guardrail in the Library will be located at the stair only (the ramp and balcony guardrail will be GWB) and in the Museum at the two open stairs and first balcony only (the balcony guardrail at level 3 will be GWB). The closure panels on the underside of stairs will also be GWB with reveals aligned with metal panel joints and LGMF as required.

FROM

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	Duct Insulation Schedule	RFI ID:	16-PREC
TYPE:	RFI	TRANSMITTAL ID:	00059
PURPOSE:	Answered	VIA:	Email

QUESTION:

Section 230713 3.9 Indoor Duct Insulation Schedule A.1. lists "Glass Fiber Blanket: 2 inches thick and 3 lb/cu. ft. nominal density. Fiberglass blanket is available in .75# and 1.0# densities. 3# density indicates fiberglass board, not blanket.

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)

- **#16 – HVAC**
  - *Section 230713 3.9 Indoor Duct Insulation Schedule A.1. lists "Glass Fiber Blanket: 2 inches thick and 3 lb/cu. ft. nominal density. Fiberglass blanket is available in .75# and 1.0# densities. 3# density indicates fiberglass board, not blanket.*
  - **Provide 1.0 lb/ft$_3$ fiber blanket in lieu of 3 lb/ft$_3$ as mentioned.**

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FROM

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TO

RFI Transmittal

DATE: 6/2/2023
ID: 00059

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COPIES:

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	HVAC Insulation	RFI ID:	17-PREC
TYPE:	RFI	TRANSMITTAL ID:	00060
PURPOSE:	Answered	VIA:	Email

QUESTION:

Page M003 HVAC Insulation 7. Insulation for duct systems lists "2.2" thickness, minimum r-value at installed condition of 6.0". 2.2" thick 3/4# density is the industry standard for commercial buildings and meets the required 6.0 R value.

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)
Remarks:

- **#17 – HVAC**
  - *Page M003 HVAC Insulation 7. Insulation for duct systems lists "2.2" thickness, minimum r-value at installed condition of 6.0". 2.2" thick 3/4# density is the industry standard for commercial buildings and meets the required 6.0 R value.*
  - Provide 1.0 lb/ft3 fiber blanket in lieu of 3 lb/ft3 fiber board.

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RFI Transmittal

DATE: 6/2/2023
ID: 00060

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COPIES:

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	Piping Insulation Schedule	RFI ID:	18-PREC
TYPE:	RFI	TRANSMITTAL ID:	00061
PURPOSE:	Answered	VIA:	Email

QUESTION:

Section 230719 3.12 Indoor Piping Insulation Schedule does not list Heating Hot Water. It is listed in the Outdoor Piping Insulation Schedule as 2" thick. Page M003 HVAC Insulation 5. Insulation for hot pipe lists 1.25" and less as 1.5" thick and 1.5" and up as 2" thick.

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)
Remarks:

- **#18 – HVAC**
  - *Section 230719 3.12 Indoor Piping Insulation Schedule does not list Heating Hot Water. It is listed in the Outdoor Piping Insulation Schedule as 2" thick. Page M003 HVAC Insulation 5. Insulation for hot pipe lists 1.25" and less as 1.5" thick and 1.5" and up as 2" thick.*
  - Hot water heating piping 1.25” and smaller shall utilize 1.5” insulation. Piping 1.5” and larger shall utilize 2” insulation.

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FROM

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RFI Transmittal

DATE: 6/2/2023
ID: 00061

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RFI Transmittal

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/2/2023
SUBJECT:	Indoor Piping Insulation Schedule A	RFI ID:	19-PREC
TYPE:	RFI	TRANSMITTAL ID:	00062
PURPOSE:	Answered	VIA:	Email

QUESTION:

Section 230719 3.12 Indoor Piping Insulation Schedule A. Condensate and Equipment Drains 1.a. lists "Flexible Elastomeric: 1 ½ " thick. This is the same thickness listed for the RS and HG piping. CD are usually insulated with 1/2" or at most 1" thick material. Page M003 HVAC Insulation 5. Insulation for cold pipe lists Condensate drain 1/2" thick for up to 4" and over.

SUGGESTION:

ANSWER:

Response (Answered) from: Brandon Nevin (Newcomb & Boyd)
Remarks:

- **#19 – HVAC**
  - *Section 230719 3.12 Indoor Piping Insulation Schedule A. Condensate and Equipment Drains 1.a. lists "Flexible Elastomeric: 1 ½ " thick. This is the same thickness listed for the RS and HG piping. CD are usually insulated with 1/2" or at most 1" thick material.*
    Page M003 HVAC Insulation 5. Insulation for cold pipe lists Condensate drain 1/2" thick for up to 4" and over.
  - ½" flexible elastomeric pipe insulation is acceptable for condensate drain piping.

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RFI Transmittal

DATE: 6/2/2023
ID: 00062

FROM

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	CMU Specifications	RFI ID:	21-PREC
TYPE:	RFI	TRANSMITTAL ID:	00047
PURPOSE:	Answered	VIA:	Email

QUESTION:

The CMU Specification 2.2 performance requirement calls out 2000 PSI which is standard for the industry, but scrolling down to 2.4/D it calls for 3000 PSI LW which would be a special production high strength unit.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
2.4.D.1 should be 2000, not 3000. We will update the spec in Addendum #1.

FROM

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TO

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PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Metal support system	RFI ID:	22-PREC
TYPE:	RFI	TRANSMITTAL ID:	00048
PURPOSE:	Answered	VIA:	Email

QUESTION: Provide Section detail for vanity tops showing metal support system.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
Please see Associated File for steel countertop support example. We will include this info in the IFC Set.

FROM

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TO

NAME	COMPANY	EMAIL	PHONE
Brian Stamp	MONTEITH CONSTRUCTION CORP	bstamp@monteithco.com	704.405.1011

DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NUMBER	SCALE	SIZE
1	6/1/2023	Steel Countertop Support.jpg			

COPIES:

Sarah Moon (LS3P)

RFI Transmittal

LS3P | 2 West Washington Street Suite 600 Greenville SC 29601 United States

PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Built-in benches	RFI ID:	23-PREC
TYPE:	RFI	TRANSMITTAL ID:	00057
PURPOSE:	Answered	VIA:	Email

QUESTION: Section detail and material specs for “built-in” benches at B1 & D1/A-712.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
Detail and material specs will be provided in Addendum #1.

FROM

NAME	COMPANY	EMAIL	PHONE
Sarah Moon	LS3P	sarahmoon@ls3p.com	864-908-3980

TO

NAME	COMPANY	EMAIL	PHONE
Brian Stamp	MONTEITH CONSTRUCTION CORP	bstamp@monteithco.com	704.405.1011

COPIES:

Levi Worthington (LS3P)
Iván Martínez (LS3P)

RFI Transmittal

LS3P | 2 West Washington Street Suite 600 Greenville SC 29601 United States

PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Built-in bookshelves	RFI ID:	24-PREC
TYPE:	RFI	TRANSMITTAL ID:	00056
PURPOSE:	Answered	VIA:	Email

QUESTION: Section details and material specs for “built-in” bookshelves including “adjustable metal shelving” at A1, A2, B1 and D1/A-712.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
Detail and material specs will be provided in Addendum #1.

FROM

NAME	COMPANY	EMAIL	PHONE
Sarah Moon	LS3P	sarahmoon@ls3p.com	864-908-3980

TO

NAME	COMPANY	EMAIL	PHONE
Brian Stamp	MONTEITH CONSTRUCTION CORP	bstamp@monteithco.com	704.405.1011

COPIES:

Iván Martínez (LS3P)
Levi Worthington (LS3P)

RFI Transmittal

LS3P | 101 N. Third Street Suite 500 Wilmington NC 28401 United States

PROJECT:	Project Grace 7701-177600	DATE SENT:	6/1/2023
SUBJECT:	Specifications for casework	RFI ID:	25-PREC
TYPE:	RFI	TRANSMITTAL ID:	00055
PURPOSE:	Answered	VIA:	Email

QUESTION:

Specifications for glass doors & shelf thickness, edge conditions, hinges, locks, and stainless steel “mast” shelf supports for display casework on sheet A-717.

SUGGESTION:

ANSWER:

Response (Answered) from: Levi Worthington (LS3P)
Remarks:
Info will be provided in Addendum #1.

FROM

NAME	COMPANY	EMAIL	PHONE
Iván Martínez	LS3P	ivanmartinez@ls3p.com	910-397-3649

TO

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COPIES:

Levi Worthington (LS3P)
Iván Martínez (LS3P)

ADDENDUM NO. 1

Date of Addendum: June 1, 2023

Project Name: Project Grace

PROJECT INFORMATION

A. Owner: Zimmer Development Co.

B. Architect: LS3P

C. Architect Project Number: 7701-177600

NOTICE TO BIDDERS

A. This Addendum is issued to all Bidders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual and Drawings. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

ATTACHMENTS

A. This Addendum includes the following attached Documents and Specification Sections:

1. SECTION 062023 – INTERIOR FINISH CARPENTRY, dated 01 June 2023, (reissued).
2. SECTION 075419 – POLYVINYL-CHLORIDE (PVC) ROOFING, dated 01 June 2023, (new).
3. SECTION 077100 – ROOF SPECIALTIES, dated 01 June 2023, (new).

B. This Addendum includes the following attached Sheets:

1. Landscape Sheet IR1.00 – IRRIGATION PLAN, dated June 1, 2023, (reissued).
2. Landscape Sheet IR1.01 – IRRIGATION NOTES AND DETAILS, dated June 1, 2023, (reissued).
3. Architectural Sheet A-406 – ENLARGED STAIR- PLANS & SECTIONS - LIBRARY, dated June 1, 2023, (reissued).
4. Architectural Sheet A-407 – ENLARGED STAIR- PLANS & SECTIONS - LIBRARY, dated June 1, 2023, (reissued).
5. Architectural Sheet A-408 – ENLARGED STAIR- PLANS & SECTIONS – MUSEUM 1, dated June 1, 2023, (reissued).
6. Architectural Sheet A-409 – ENLARGED STAIR- PLANS & SECTIONS – MUSEUM 1, dated June 1, 2023, (reissued).

7. Architectural Sheet A-410 – ENLARGED STAIR – PLANS & SECTIONS – MUSEUM 2, dated June 1, 2023, (reissued).

REVISIONS TO DIVISIONS 02 - 49 SPECIFICATION SECTIONS

A. SECTION 042000 – UNIT MASONRY, (not reissued). Make the following revisions:

1. Paragraph 2.4.D.1: Revise to read as follows:

"Unit Compressive Strength: Provide units with minimum average net-area compressive strength of **2000** psi."

B. Delete SECTION 057600 – SMOKE BAFFLE SYSTEM in its entirety.

C. Replace SECTION 062023 – INTERIOR FINISH CARPENTRY with revised SECTION 062023, included in the Attachments.

D. SECTION 064116 – PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS, (not reissued). Make the following revisions:

1. Article 2.1: Delete this Article in its entirety.

E. Add SECTION 075419 – POLYVINYL-CHLORIDE (PVC) ROOFING, included in the Attachments.

F. Delete SECTION 075423 – THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING in its entirety.

G. Add SECTION 077100 – ROOF SPECIALTIES, included in the Attachments.

H. SECTION 084423 – STRUCTURAL-SEALANT-GLAZED CURTAIN WALLS, (not reissued). Make the following revisions:

1. Paragraph 2.3.B.3: Revise to read as follows.:

"3. System: **Stick-built**."

REVISIONS TO DRAWING SHEETS

A. Replace SHEET IR1.00 – IRRIGATION PLAN with revised SHEET IR1.00, included in the Attachments.

B. Replace SHEET IR1.01 – IRRIGATION NOTES AND DETAILS with revised SHEET IR1.01, included in the Attachments.

C. Replace SHEET A-406 – ENLARGED STAIR- PLANS & SECTIONS – LIBRARY with revised SHEET A-406, included in the Attachments.

D. Replace SHEET A-407 – ENLARGED STAIR- PLANS & SECTIONS - LIBRARY with revised SHEET A-407, included in the Attachments.

E. Replace SHEET A-408 – ENLARGED STAIR- PLANS & SECTIONS – MUSEUM 1 with revised SHEET A-408, included in the Attachments.

F. Replace SHEET A-409 – ENLARGED STAIR- PLANS & SECTIONS – MUSEUM 1 with revised SHEET A-409, included in the Attachments.

G. Replace SHEET A-410 – ENLARGED STAIR – PLANS & SECTIONS – MUSEUM 2 with revised SHEET A-410, included in the Attachments

END OF ADDENDUM NO. 1

SECTION 062023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Paneling.
2. Custom display case.
3. **Custom bookshelves.**
4. **Built-in bench.**

1.2 DEFINITIONS

A. MDF: Medium-density fiberboard.

B. MDO: Plywood with a medium-density overlay on the face.

C. PVC: Polyvinyl chloride.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Paneling.

B. Product Data Submittals: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.

1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.
3. For products receiving fire-retardant treatment, include statement from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

C. Samples for Verification:

1. For each species and cut of lumber and panel products with nonfactory-applied finish, with half of exposed surface finished; 50 sq. in. for lumber and 8 by 10 inches for panels.
2. Panel hanger clips; full size.
3. **Lumber and panel products with shop-applied opaque finish, 50 sq. in. for lumber and 8 by 10 inches for panels, for each finish system and color, with exposed surface finished.**
4. **Plastic laminates, 8 by 10 inches, for each type, color, pattern, and surface finish, with 1 sample applied to core material and specified edge material applied to 1 edge.**
5. **Thermoset decorative-panels, 8 by 10 inches, for each type, color, pattern, and surface finish, with edge banding on 1 edge.**
6. **Exposed cabinet hardware and accessories, one unit for each type and finish.**

1.4 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation.

1. Protect materials from weather by covering with waterproof sheeting, securely anchored.
2. Provide for air circulation around stacks and under coverings.

B. Deliver interior finish carpentry materials only when environmental conditions comply with requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions comply with requirements specified for installation areas.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet-work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Softwood Plywood: DOC PS 1.

B. Hardboard: ANSI A135.4.

C. MDF: ANSI A208.2, Grade 130.

D. Particleboard: ANSI A208.1, Grade M-2.

E. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.

F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.

1. **Products: As scheduled on Finish Legend on Drawings.**

G. **Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, with exposed edges seamed before tempering, 6 mm thick, unless otherwise indicated.**

2.2 PANEL FOR CUSTOM DISPLAY CASES **AND BOOKCASES**

A. Hardboard Paneling: Interior factory-finished hardboard paneling complying with ANSI A208.2, Grade 130. MDF with certified Class A flame spread rating made with no added formaldehyde.

1. Basis-of-Design Product: Subject to compliance with requirements, provide the following:
    a. Roseburg Forest Products; Medite FR Clear (Basis-of-Design).
2. Thickness: As indicated on Drawings.
3. Surface-Burning Characteristics: As follows, tested according to ASTM E84:
    a. Flame-Spread Index: 25 or less.
    b. Smoke-Developed Index: 450 or less.

B. **Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:**

1. **Horizontal Surfaces Other Than Tops: Grade HGS.**
2. Postformed Surfaces: Grade HGP.
3. Vertical Surfaces: Grade HGS.
4. Edges: Grade VGS or 3mm PVC tape, matching laminate in color, pattern, and finish.

C. **Materials for Semiexposed Surfaces:**

1. **Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, Grade VGS.**
2. Edges of Plastic-Laminate Shelves: 3 mm PVC tape, matching laminate in color, pattern, and finish.
3. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, Grade VGS.

2.3 PANEL HANGER CLIPS (FOR INTERIOR WALL PANELINGS)

A. Panel Hanger Clips: Aluminum “Z” clips for plywood paneling to allow concealed fastening to substrate.

1. Basis-of-Design: Subject to compliance with requirements, provide the following:
    a. Monarch Metal, Inc.; Monarch Z Clips.
        1) Product: MFSS Heavy Duty.

2.4 CUSTOM BUILT-IN BENCH

A. **Hardboard Paneling: Interior factory-finished hardboard paneling complying with ANSI A208.2, Grade 130. MDF with certified Class A flame spread rating made with no added formaldehyde.**

1. Basis-of-Design Product: Subject to compliance with requirements, provide the following:
    a. **Roseburg Forest Products; Medite FR Clear (Basis-of-Design).**
2. **Thickness: As indicated on Drawings.**
3. **Surface-Burning Characteristics: As follows, tested according to ASTM E84:**
    a. **Flame-Spread Index: 25 or less.**
    b. Smoke-Developed Index: 450 or less.

B. **Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:**

1. **Horizontal Surfaces Other Than Tops: Grade HGS.**
2. Postformed Surfaces: Grade HGP.
3. Vertical Surfaces: Grade HGS.
4. Edges: Grade VGS or 3mm PVC tape, matching laminate in color, pattern, and finish.

2.5 CABINET HARDWARE AND ACCESSORIES

A. **General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 08 Section "Door Hardware (Scheduled by Describing Products)."**

B. Butt Hinges: 2-3/4-inch, 5-knuckle steel hinges made from 0.095-inch- thick metal, and as follows:

C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 180 degrees of opening, self-closing.

1. **Provide 2 hinges per door. Provide 3 hinges per door for doors over 38 inches. Provide 4 hinges per door for doors over 60 inches.**

D. **Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.**

E. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.

F. Door Locks: BHMA A156.11, E07121.

2.6 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

B. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

C. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

D. Adhesives, General: Do not use adhesives that contain urea formaldehyde.

2.7 FABRICATION

A. Back out or kerf backs of the following members, except those with ends exposed in finished work:

1. Wood-board paneling.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. **Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4 Inch Thick or Less: 1/16 inch.**
2. Edges of Rails and Similar Members More Than **3/4 Inch** Thick: **1/8 inch**.

D. **Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.**

E. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

F. Seal edges of openings in countertops with a coat of varnish.

G. Install glass to comply with applicable requirements in Division 08 Section "Glazing" and in GANA's "Glazing Manual".

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours.

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound; warped; improperly treated or finished; inadequately seasoned; too small to fabricate with proper jointing arrangements; or with defective surfaces, sizes, or patterns.

B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.

1. Use concealed shims where necessary for alignment.
2. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
3. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
4. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
5. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.4 INSTALLATION OF INTERIOR PANELING

A. Plywood Paneling: Select and arrange panels on each wall to minimize noticeable variations in grain character and color between adjacent panels.

1. Leave 1/4-inch gap to be covered with trim at top, bottom, and openings.
2. Install with uniform tight joints between panels.

3. Attach panels with panel hanger clips according to approved Shop Drawings and to comply with panel hanger clips manufacturer's written instructions.
4. Conceal fasteners to greatest practical extent.
5. Arrange panels with grooves and joints over supports.
    a. Fasten to supports with nails of type and at spacing recommended by panel manufacturer.
    b. Use fasteners with prefinished heads matching groove color.

3.5 ADJUSTING

A. Replace interior finish carpentry that is damaged or does not comply with requirements.
    1. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

B. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean interior finish carpentry on exposed and semiexposed surfaces.

B. Restore damaged or soiled areas and touch up factory-applied finishes if any.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
    1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
    2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 062023

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Adhered polyvinyl chloride (PVC) roofing system.
2. Accessory roofing materials.
3. Vapor retarder.
4. Roof insulation.
5. Insulation accessories and cover board.
6. Walkways.

1.2 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of SPRI's Directory of Roof Assemblies listing.

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.

4. Tapered insulation thickness and slopes.
5. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
6. Tie-in with air barrier.

C. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

a. Submit evidence of compliance with performance requirements.

2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

C. Product Test Reports: For roof membrane and insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.

D. Evaluation Reports: For components of roofing system, from ICC-ES.

E. Field quality-control reports.

F. Sample Warranties: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturers: A qualified manufacturer that is listed in SPRI's Directory of Roof Assemblies for roofing system identical to that used for this Project.
2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

B. Roofing Inspections: Make required notifications, secure required inspections and pay fees such that the specified systems warranty are assured at the time of completion of the Work.

1. Contractor and Manufacturer's assigned representative shall inspect and warrant the Work as a condition of acceptance.
2. Manufacturer shall provide project start-up guidance and direction at start of installation and then provide inspections by manufacturer’s technical inspector at 25 percent, 50 percent and final, with inspection reports submitted to the Roofing Installer, Contractor and Architect/Owner. Deficiencies shall be listed on the inspection reports and all repairs/corrections made and certified completed and approved by the inspector submitted with next and final report.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, and other components of roofing system.
2. Warranty Period: 20 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings to withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings to remain watertight.

1. Accelerated Weathering: Roof membrane to withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
2. Impact Resistance: Roof membrane to resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials to be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures:

1. Wind Uplift Pressures: Uplift pressures as set forth by ASCE 7-16, as indicated on Structural Drawings.

D. SPRI's Directory of Roof Assemblies Listing: Roof membrane, base flashings, and component materials comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and are listed in SPRI's Directory of Roof Assemblies for roof assembly identical for that specified for this Project.

1. Wind Uplift Load Capacity: As indicated on Drawings.

E. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 POLYVINYL CHLORIDE (PVC) ROOFING

A. PVC/KEE Sheet: ASTM D4434, Type III - polyester fiber reinforced, or ASTM D6754, with fleece backing.

1. Manufacturer: Subject to compliance with requirements, provide products by one of the following:

a. Carlisle Syntec Systems; FleeceBack Sure-Flex KEE HP
b. Durolast; Durolast EV
c. Johns Manville; JM PVC FB
d. Sarnafil; Sikaplan Fleece Backed
e. Seaman Corporation; FiberTite-SM-FB
f. Versico; Versifleece KEE HP FRS

2. Thickness: 60 mils, nominal for ASTM D4434 and 45 mils for ASTM D6754.
3. Exposed Face Color: White.

B. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

2.3 ACCESSORY ROOFING MATERIALS

A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

D. Roof Vents: As recommended by roof membrane manufacturer.

1. Size: Not less than 4-inch diameter.

E. Bonding Adhesive: Provide one of the following as recommended by manufacturer.

1. Water-Based, Fabric-Backed Membrane Adhesive: Roofing system manufacturer's standard water-based, cold-applied adhesive formulated for compatibility and use with fabric-backed membrane roofing.
2. Low-Rise, Urethane, Fabric-Backed Membrane Adhesive: Roof system manufacturer's standard spray-applied, low-rise, two-component urethane adhesive formulated for compatibility and use with fabric-backed membrane roofing.

F. Slip Sheet: Manufacturer's standard, of thickness required for application.

G. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

H. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.

I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 VAPOR RETARDER

A. Self-Adhering-Sheet Vapor Retarder: Provide one of the following as recommended by roofing membrane manufacturer:

1. Rubberized-Asphalt-Sheet Vapor Retarder, Self-Adhering: ASTM D1970/D1970M, polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor retarder manufacturer.
2. Butyl-Rubber-Sheet Vapor Retarder, Self-Adhering: Polyethylene film laminated to layer of butyl rubber adhesive, minimum 30-mil total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor retarder manufacturer.

2.5 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by PVC roof membrane manufacturer , approved for use in SPRI's Directory of Roof Assemblies listed roof assemblies.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 3, felt or glass-fiber mat facer on both major surfaces.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Atlas Roofing Corporation.
b. Carlisle SynTec Incorporated.
c. Firestone Building Products.
d. GAF.
e. Hunter Panels.
f. Johns Manville; a Berkshire Hathaway company.

g. Rmax, Inc.

2. Compressive Strength: 25 psi.
3. Thickness: As indicated on Drawings, or as required to achieve R-value indicated on Drawings.

C. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch.
3. Slope:

a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.6 INSULATION ACCESSORIES AND COVER BOARD

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Full-spread, spray-applied, low-rise, two-component urethane adhesive.

D. Glass-Mat Gypsum Cover Board: ASTM C1177/C1177M, water-resistant gypsum board.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed Corporation; GlasRoc Roof Board
b. Georgia-Pacific Gypsum LLC; DensDeck Prime
c. National Gypsum Company; DEXcell FA Glass Mat Roof Board
d. United States Gypsum Company; Securock Glass-Mat Roof Board
e. Roofing membrane manufacturer's tested, approved, and warranted cover board that is equivalent to specified product.

2. Thickness: 1/2 inch.
3. Surface Finish: Factory primed.

2.7 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.

1. Size: Approximately 36 by 60 inches.
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
4. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
5. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than 75 percent, or as recommended by roofing system manufacturer, when tested according to ASTM F2170.
    a. Test Frequency: One test probe per each 1000 sq. ft., or portion thereof, of roof deck, with no fewer than three test probes.
    b. Submit test reports within 24 hours of performing tests.
6. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, SPRI's Directory of Roof Assemblies listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 072726 "Fluid-Applied Membrane Air Barriers."

3.4 INSTALLATION OF VAPOR RETARDER

A. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 and 6 inches, respectively.

1. Extend vertically up parapet walls and projections to a minimum height equal to height of insulation and cover board.
2. Seal laps by rolling.

B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.5 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over Metal Decking:

1. Install base layer of insulation with end joints staggered not less than 12 inches in adjacent rows and with long joints continuous at right angle to flutes of decking.

a. Locate end joints over crests of decking.
b. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

1) Trim insulation so that water flow is unrestricted.

f. Fill gaps exceeding 1/4 inch with insulation.
g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
h. Mechanically attach base layer of insulation using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.

1) Fasten insulation according to requirements in SPRI's Directory of Roof Assemblies for specified Wind Uplift Load Capacity.
2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.

a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
f. Trim insulation so that water flow is unrestricted.
g. Fill gaps exceeding 1/4 inch with insulation.
h. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
i. Adhere each layer of insulation to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, using one of the following methods:

1) Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F of equiviscous temperature.
2) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

D. Installation Over Concrete Decks:

1. Install base layer of insulation with end joints staggered not less than 12 inches in adjacent rows.

a. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
b. Make joints between adjacent insulation boards not more than 1/4 inch in width.
c. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

1) Trim insulation so that water flow is unrestricted.

d. Fill gaps exceeding 1/4 inch with insulation.
e. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
f. Adhere base layer of insulation to vapor retarder according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, using one of the following methods:

1) Set insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F of equiviscous temperature.
2) Set insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
3) Set insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.

a. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

1) Trim insulation so that water flow is unrestricted.

e. Fill gaps exceeding 1/4 inch with insulation.
f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
g. Adhere each layer of insulation to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, using one of the following methods:

1) Set each layer of insulation in a solid mopping of hot roofing asphalt, applied within plus or minus 25 deg F of equiviscous temperature.
2) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
3) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
2. At internal roof drains, conform to slope of drain sump.
    a. Trim cover board so that water flow is unrestricted.
3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    a. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

B. Install slip sheet over cover board and immediately beneath roof membrane.

3.7 INSTALLATION OF ADHERED ROOF MEMBRANE

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

E. Fabric-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.

F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

H. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

I. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.8 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.

1. Install flexible walkways at the following locations:
    a. Perimeter of each rooftop unit.
    b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
    c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
    d. Top and bottom of each roof access ladder.
    e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
    f. Locations indicated on Drawings.
    g. As required by roof membrane manufacturer's warranty requirements.
2. Provide 6-inch clearance between adjoining pads.
3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: <**Insert name of Owner**>.
2. Owner Address: <**Insert address**>.
3. Building Name/Type: <**Insert information**>.
4. Building Address: <**Insert address**>.
5. Area of Work: <**Insert information**>.
6. Acceptance Date: _____.
7. Warranty Period: <**Insert time**>.
8. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
    a. lightning;
    b. peak gust wind speed exceeding <**Insert mph**>;
    c. fire;
    d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    f. vapor condensation on bottom of roofing; and
    g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075419

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Copings.

B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
3. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.
4. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

C. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, roofing-system testing and inspecting agency representative, roofing Installer, roofing-system manufacturer's representative, Installer, structural-support Installer, and installers whose work interfaces with or affects roof specialties, including installers of roofing materials and accessories.
2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For roof specialties.

1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
4. Detail termination points and assemblies, including fixed points.
5. Include details of special conditions.

C. Samples for Verification:

1. Include Samples of each type of roof specialty to verify finish and color selection, in manufacturer's standard sizes.
2. Include copings made from 12-inch lengths of full-size components in specified material, and including fasteners, cover joints, accessories, and attachments.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Certificates: For each type of roof specialty.

C. Product Test Reports: For copings and roof-edge flashings, for tests performed by a qualified testing agency.

D. Sample Warranty: For manufacturer's special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are SPRI ES-1 tested to specified design pressure.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and set quality standards for fabrication and installation.

1. Build mockup of typical roof edge as shown on Drawings.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.

B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.

B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.8 WARRANTY

A. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. SPRI Wind Design Standard: Manufacture and install copings tested according to SPRI ES-1 and capable of resisting the following design pressures:

1. Design Pressure: As indicated on Drawings.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COPINGS

A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet, concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.

1. Basis-of-Design: Subject to compliance with requirements, provide products by one of the following:

a. Hickmann Edge Systems (Basis-of-Design).
b. ATAS International, Inc.
c. Berridge Manufacturing Company.
d. Cheney Flashing Company.
e. Metal-Era, Inc.
f. OMG, Inc.
g. PAC-CLAD; Petersen Aluminum Corporation; a Carlisle company.

2. Formed Aluminum Sheet Coping Caps: Aluminum sheet, thickness as required to meet performance requirements.

a. Surface: Smooth, flat finish.
b. Finish: Color anodic.
c. Color: As selected by Architect from manufacturer's full range.

3. Corners: Factory mitered and mechanically clinched and sealed watertight.
4. Coping-Cap Attachment Method: Snap-on or face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.

a. Snap-on Coping Anchor Plates: Concealed, galvanized-steel sheet, 12 inches wide, with integral cleats.
b. Face-Leg Cleats: Concealed, continuous galvanized-steel sheet.

2.3 MATERIALS

A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 coating designation.

B. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

C. Aluminum Extrusions: ASTM B221, alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:

2.4 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Carlisle WIP Products; a brand of Carlisle Construction Materials.
b. GCP Applied Technologies Inc.
c. Henry Company.

2. Thermal Stability: ASTM D1970/D1970M; stable after testing at 240 deg F.
3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F.

B. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt, nonperforated.

C. Slip Sheet: Rosin-sized building paper, 3-lb/100 sq. ft. minimum.

2.5 MISCELLANEOUS MATERIALS

A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:

1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.

B. Elastomeric Sealant: ASTM C920, elastomeric polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

C. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.

D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

E. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.

2.6 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Coil-Coated Aluminum Sheet Finishes:

1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

E. Aluminum Extrusion Finishes:

1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.

C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.

1. Apply continuously under copings.

2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.

B. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

C. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

3.3 INSTALLATION, GENERAL

A. Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.

1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
2. Provide uniform, neat seams with minimum exposure of solder and sealant.
3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
4. Torch cutting of roof specialties is not permitted.
5. Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.

C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.

1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.

D. Fastener Sizes: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.

F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work. Tin edges of uncoated copper sheets using solder for copper. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

3.4 INSTALLATION OF COPINGS

A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.

B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.
2. Interlock face-leg drip edge into continuous cleat anchored to substrate at manufacturer's required spacing that meets performance requirements. Anchor back leg of coping with screw fasteners and elastomeric washers at manufacturer's required spacing that meets performance requirements.

3.5 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

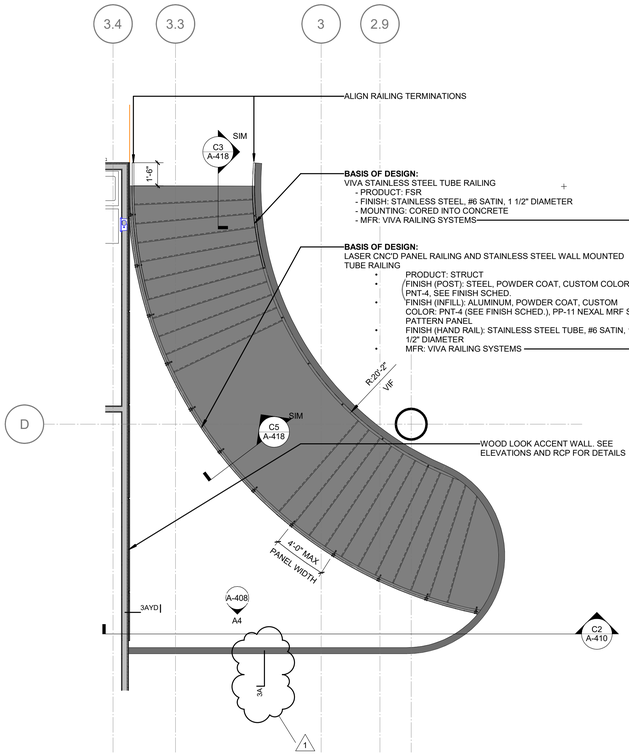
B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.

D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

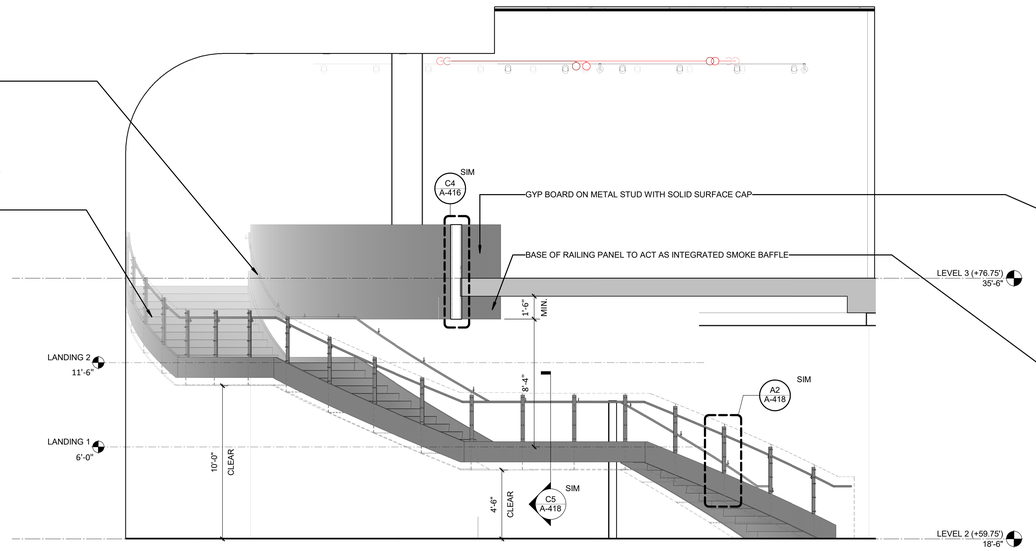
END OF SECTION 077100

THE LINE SHOWN ABOVE IS EXACTLY ONE INCH LONG ON ALL SHEETS EXCEPT ARCHITECTURAL PAGE SIZE



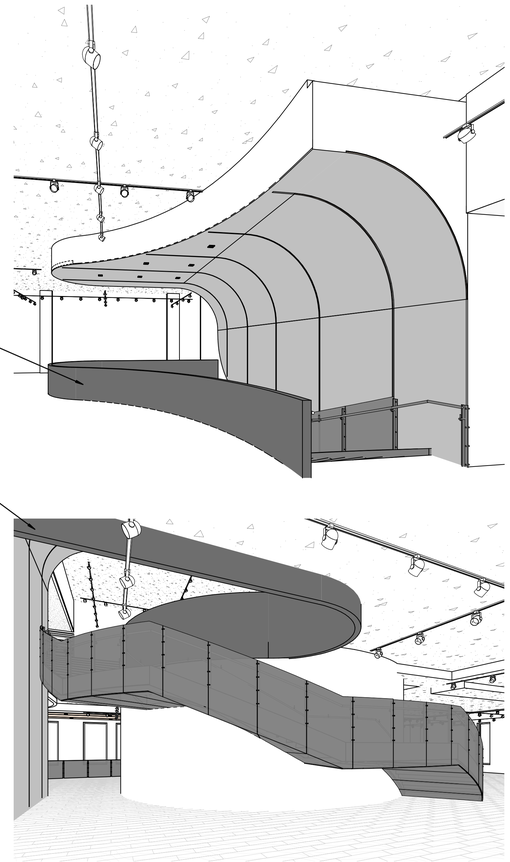
C1 ENLARGED STAIR PLAN - LEVEL 3 - MUSEUM STAIR 2

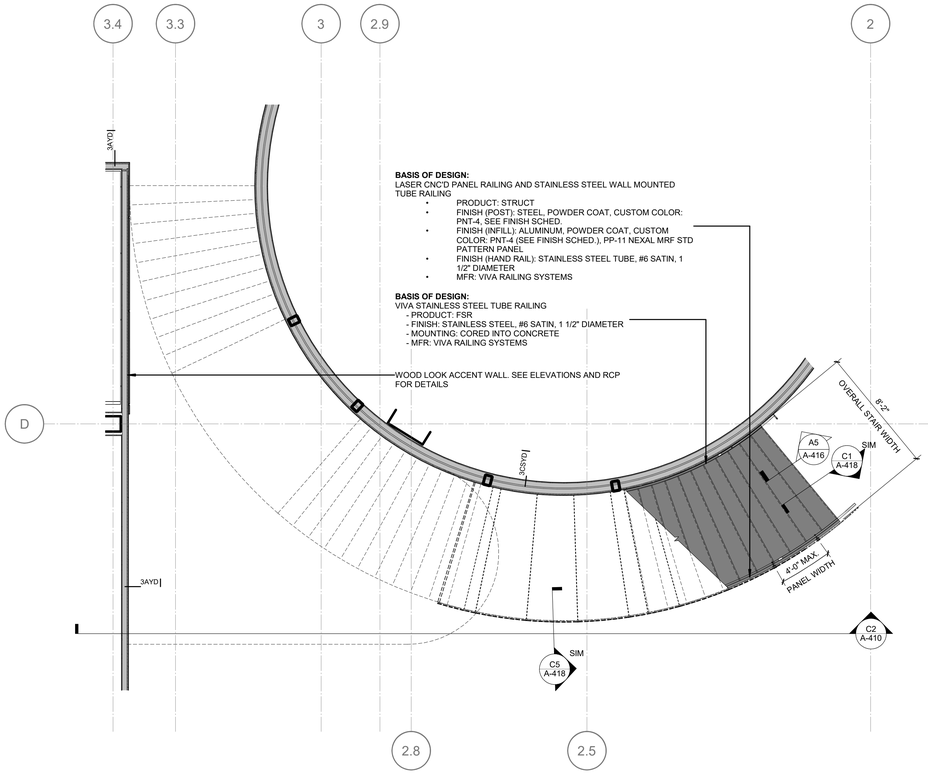
1/4" = 1'-0"



C2 SECTION - CIRCULATION STAIR - MUSEUM STAIR 2 - NORTH

1/4" = 1'-0"





A1 ENLARGED STAIR PLAN - LEVEL 2 - MUSEUM STAIR 2

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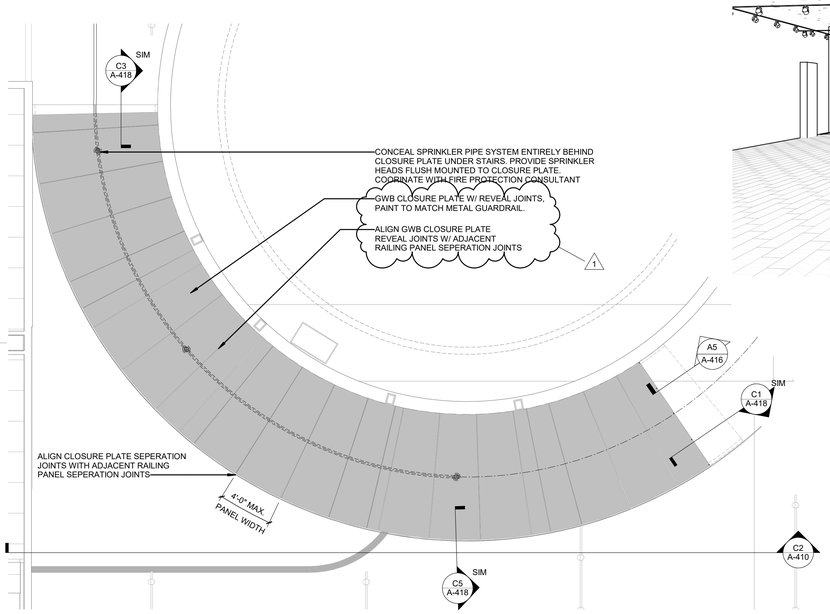

A3 ENLARGED RCP STAIR PLAN - LEVEL 2 - MUSEUM STAIR 2 (UNDERTSAIR CLOSURE PLATES)

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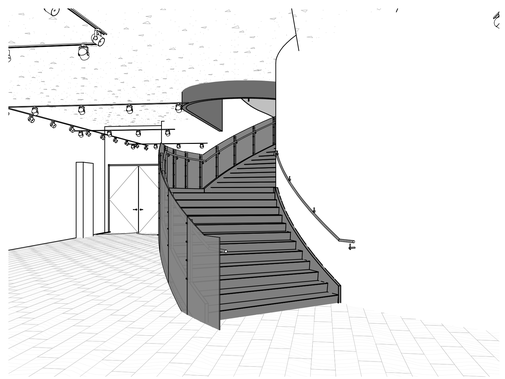

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Project Grace

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LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
0	2023.05.22	PERMIT SET
1	2023.06.01	ADDENDUM #1

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - MUSEUM 2

ORIG SUBMISSION: 2023.05.22

SHEET:
A-410

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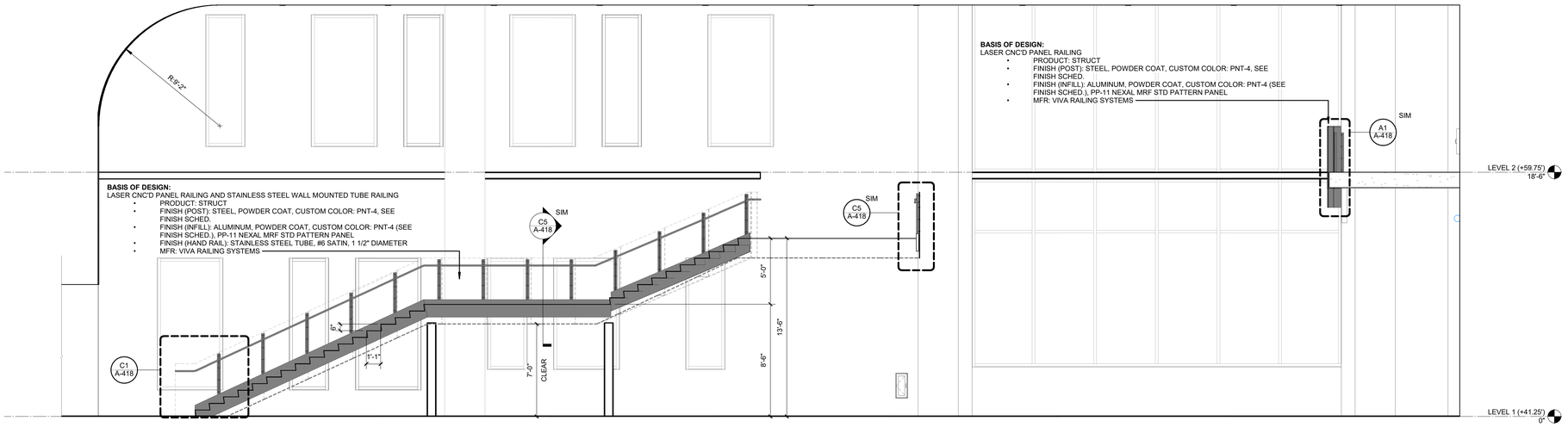

C1 SECTION - CIRCULATION STAIR - MUSEUM STAIR 1 - LEG 1 NORTH

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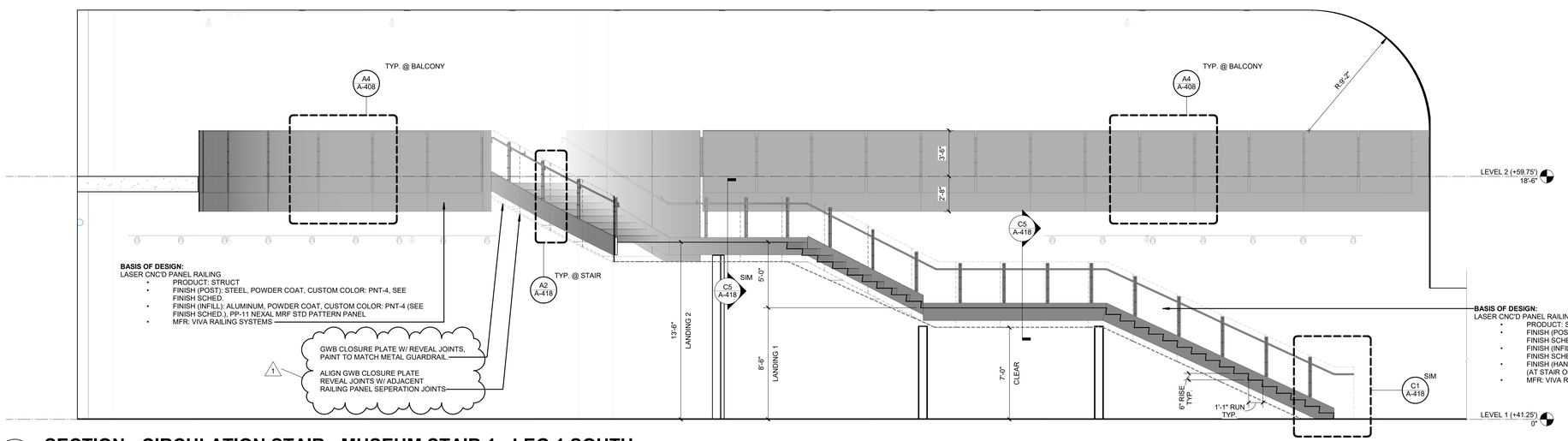

A1 SECTION - CIRCULATION STAIR - MUSEUM STAIR 1 - LEG 1 SOUTH

1/4" = 1'-0"

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SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - MUSEUM 1

ORIG SUBMISSION: 2023.05.22

SHEET:
A-409

PERMIT SET

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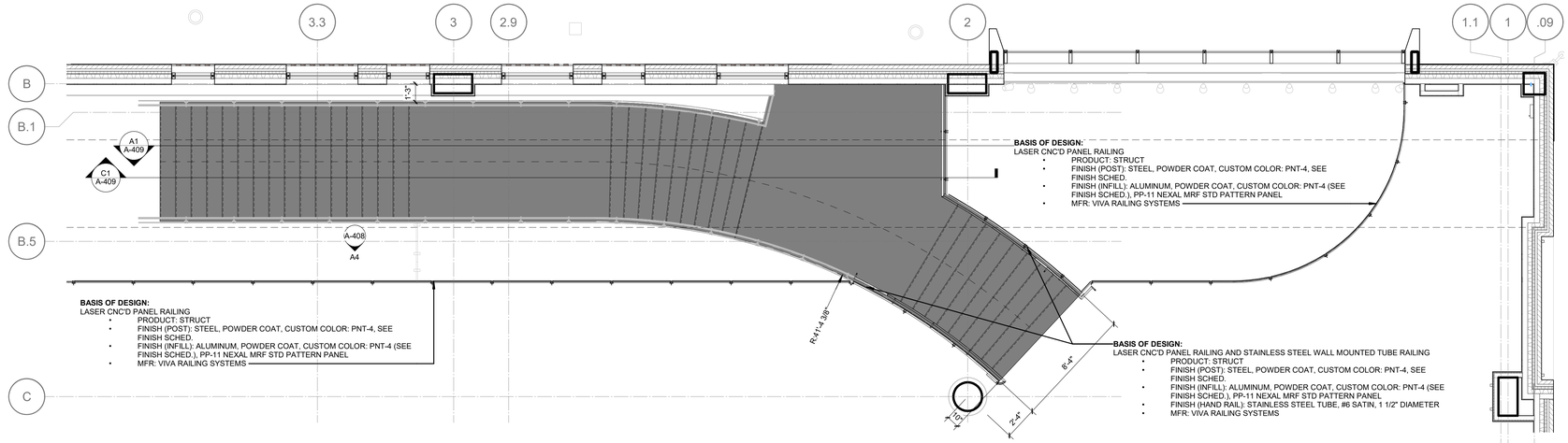

D1 ENLARGED STAIR PLAN - LEVEL 2 - MUSEUM STAIR 1

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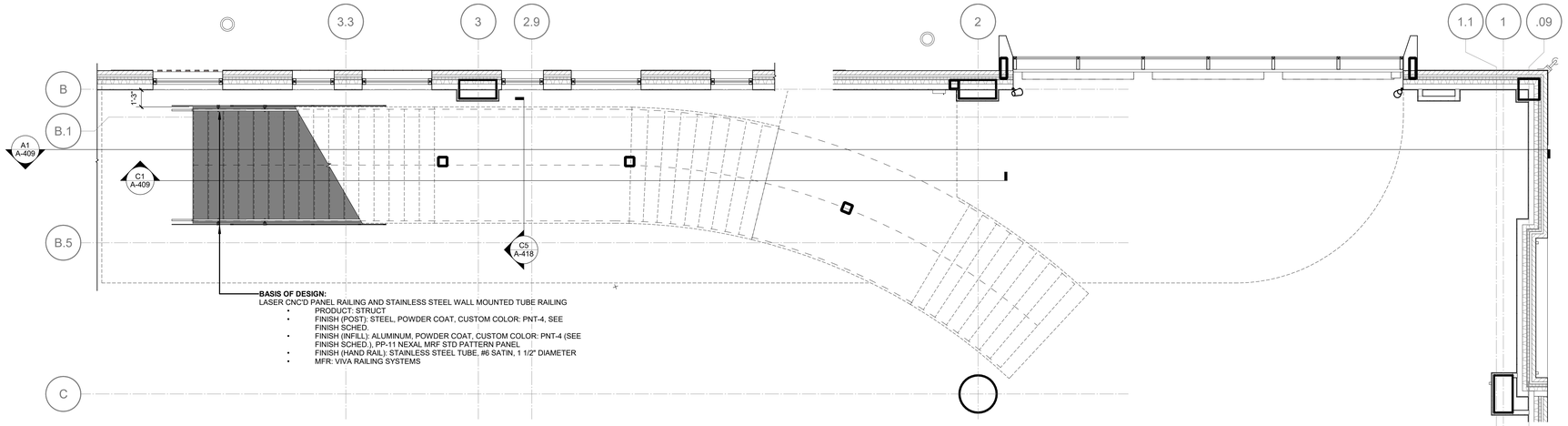

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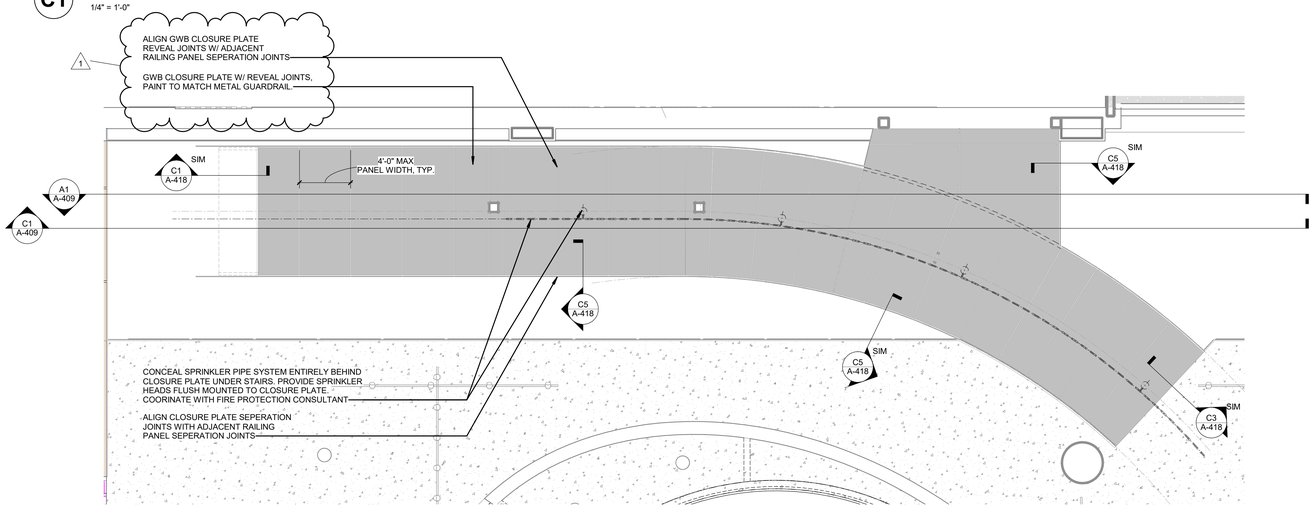
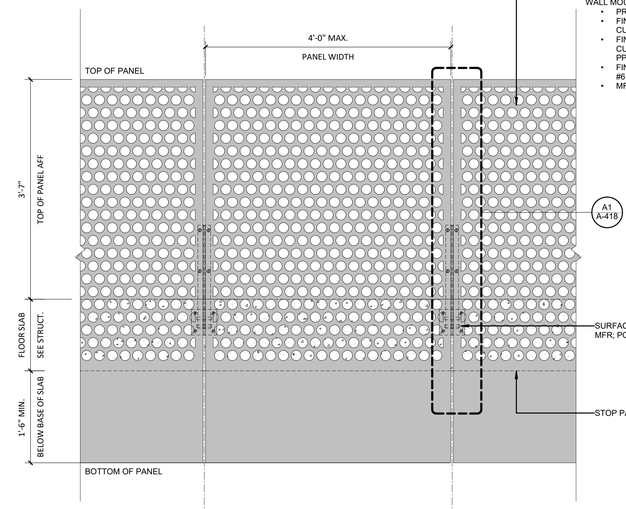
1/4" = 1'-0"



A1 ENLARGED RCP STAIR PLAN - LEVEL 1 - MUSEUM STAIR 1 (UNDERTSAIR CLOSURE PLATES)

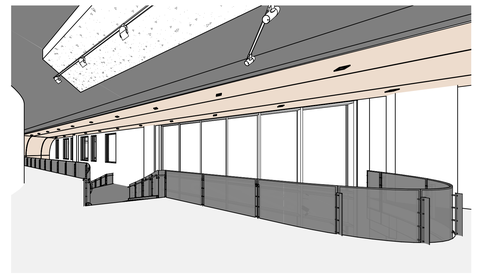
1/4" = 1'-0"

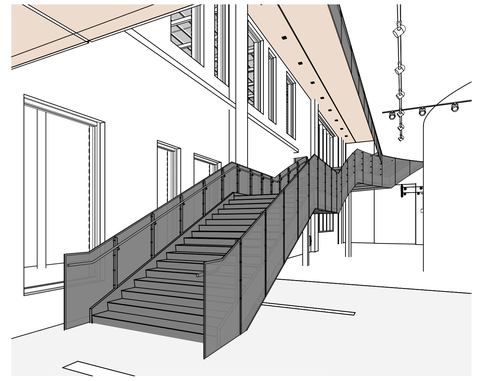


**BASIS OF DESIGN: VIVA RAILING SYSTEMS, STRUC PANEL SYSTEM

A4 TYPICAL MUSEUM BALCONY PANEL RAILING

1" = 1'-0"





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LS3P PROJECT: 7701-177600

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SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - MUSEUM 1

ORIG SUBMISSION: 2023.05.22

SHEET:
A-408

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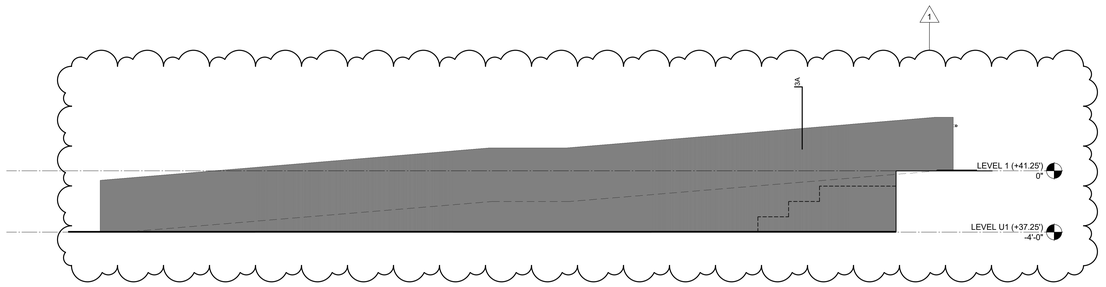
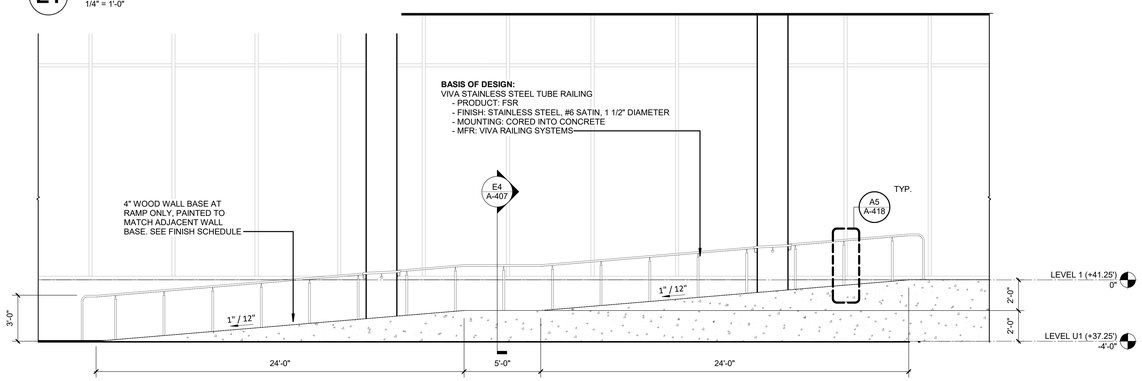


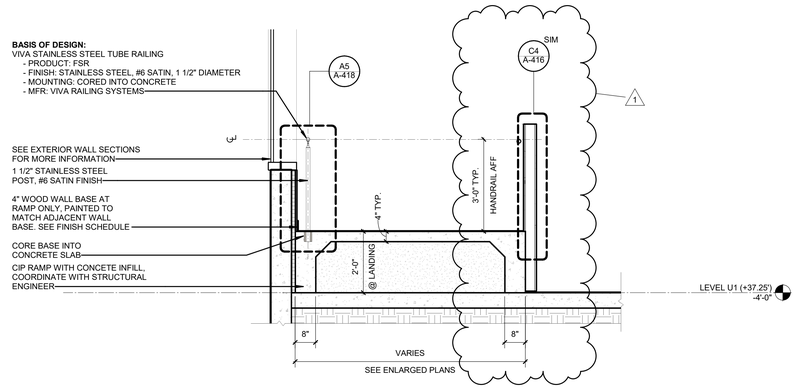
E1 ELEV. - CIRCULATION RAMP - LIBRARY NORTH

1/4" = 1'-0"



C1 SECTION - CIRCULATION RAMP - LIBRARY NORTH

1/4" = 1'-0"



E4 SECTION - CIRCULATION RAMP - LIBRARY EAST

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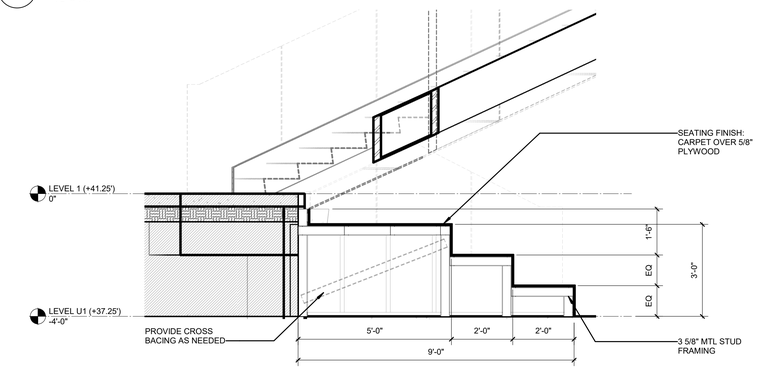

C4 SECTION - CIRCULATION STAIR - CHILDREN'S LIBRARY1

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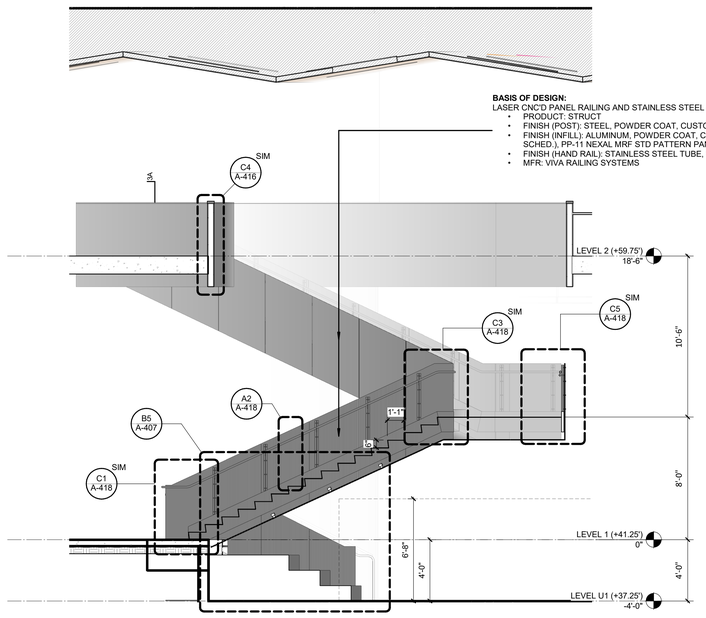
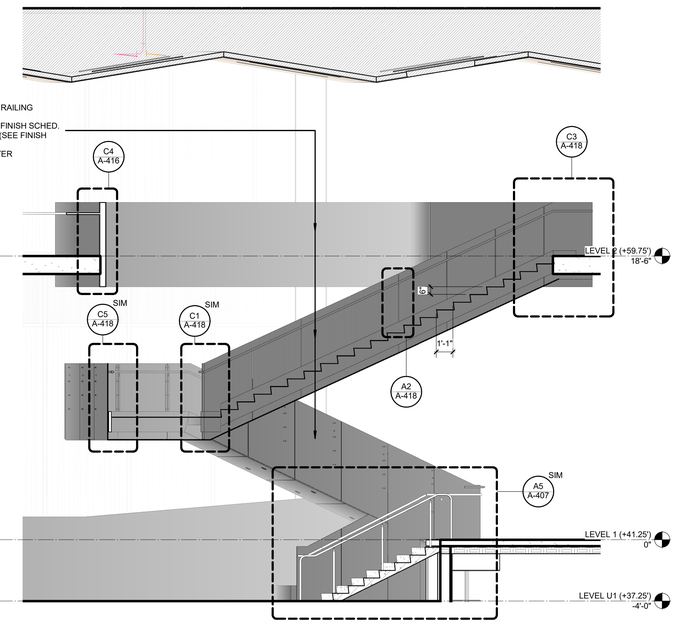


A1 SECTION - CIRCULATION STAIR - MAIN LIBRARY - LEG 1 SOUTH

1/4" = 1'-0"



A3 SECTION - CIRCULATION STAIR - MAIN LIBRARY - LEG 2 NORTH

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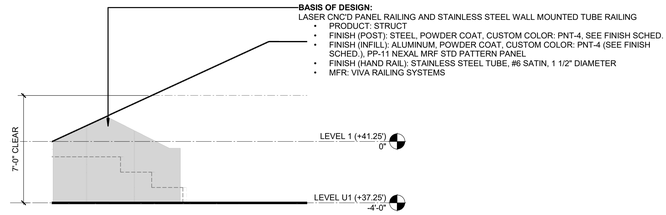

B5 STAIR ELEV. - MAIN LIBRARY - UNDERSIDE

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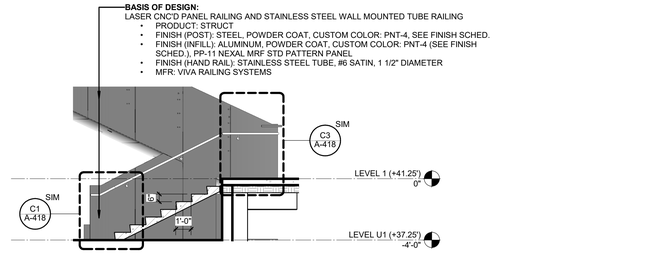

A5 SECTION - CIRCULATION STAIR - LIBRARY - NORTH 2

1/4" = 1'-0"

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Project Grace

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Wilmington, NC 28401

LS3P PROJECT: 7701-177600

Δ	DATE	DESCRIPTION
0	2023.05.22	PERMIT SET
1	2023.06.01	ADDENDUM #1

SHEET NAME:
ENLARGED STAIR - PLANS & SECTIONS - LIRBARY

ORIG SUBMISSION: 2023.05.22

SHEET:
A-407

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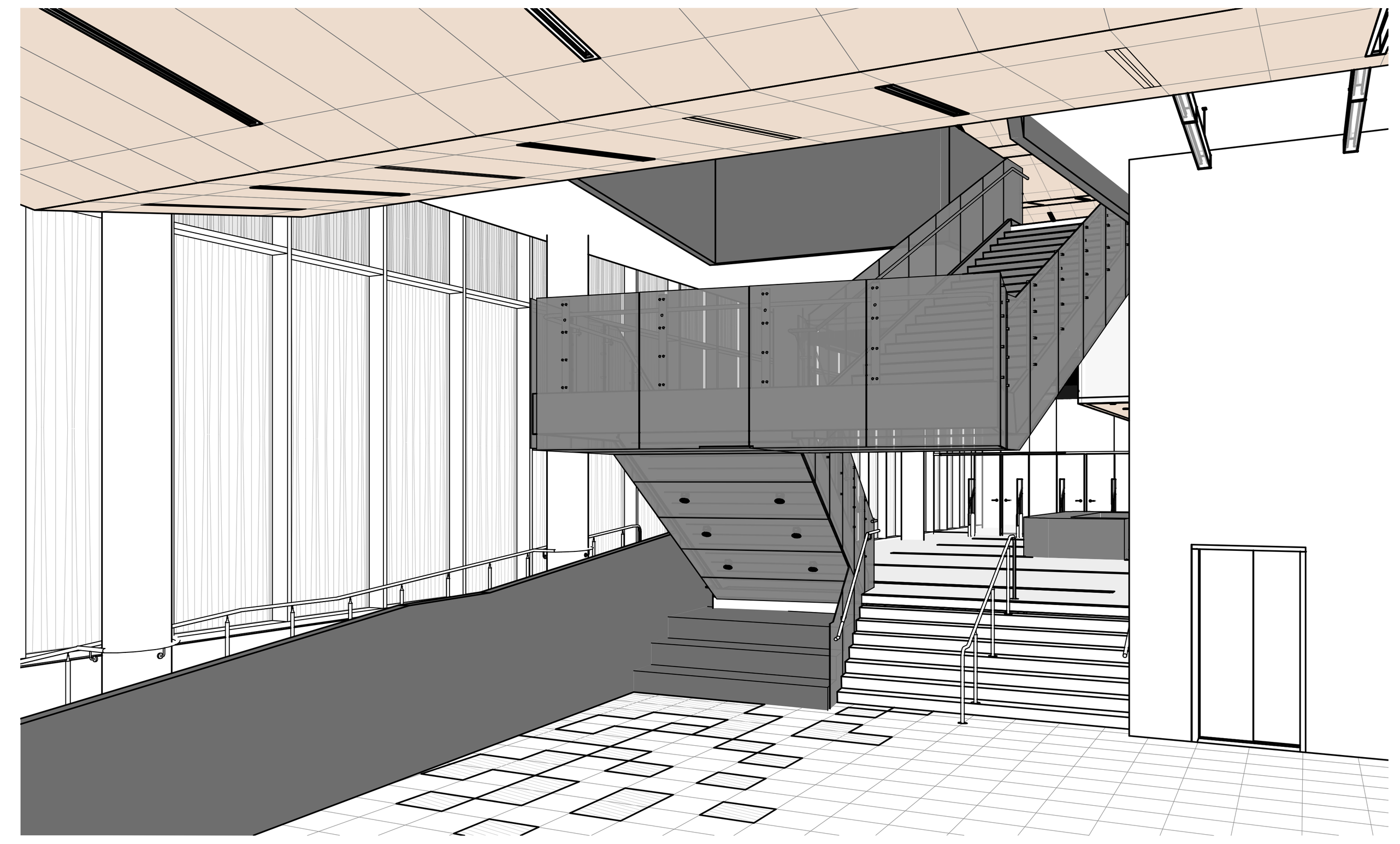
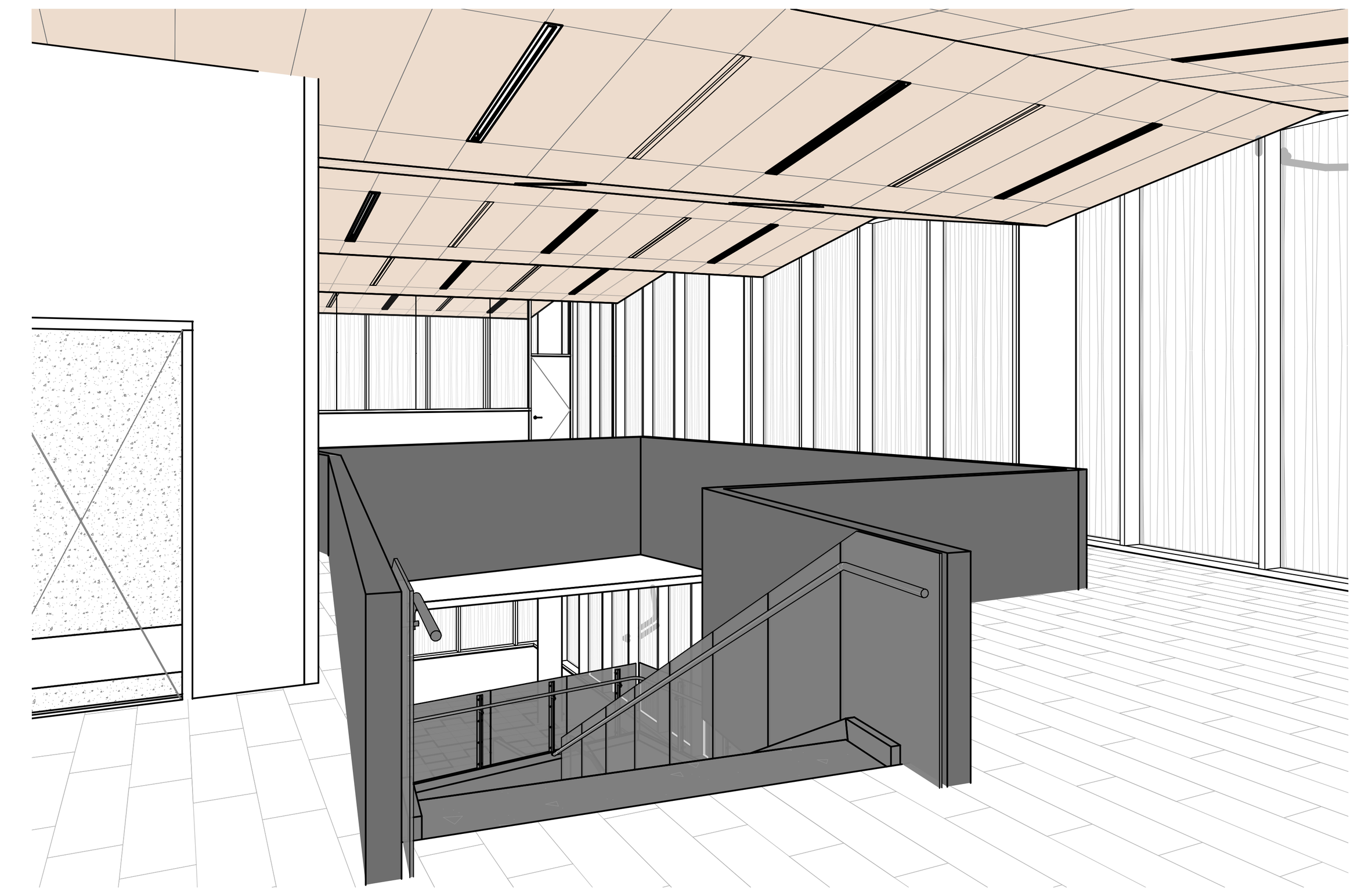
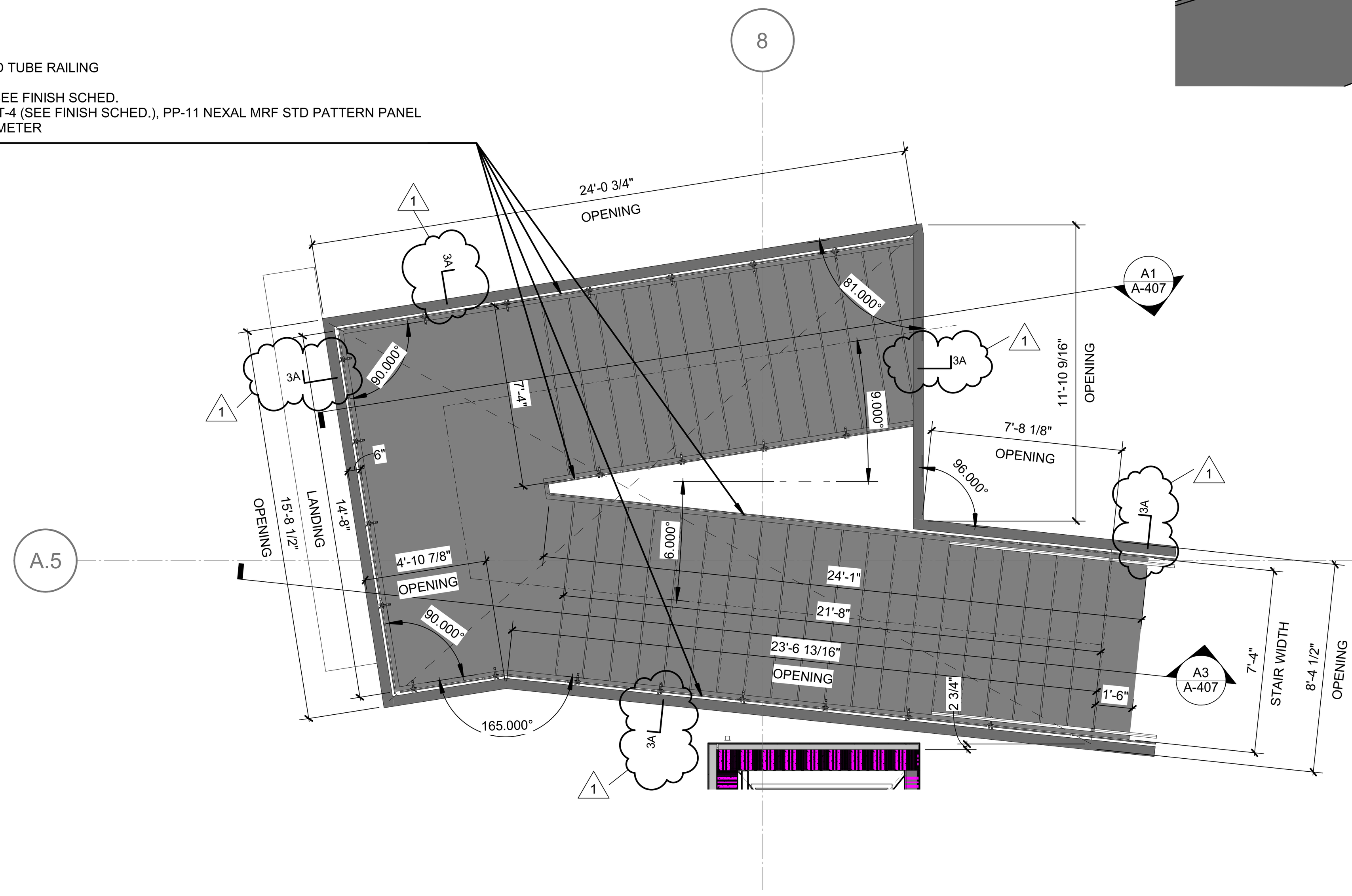


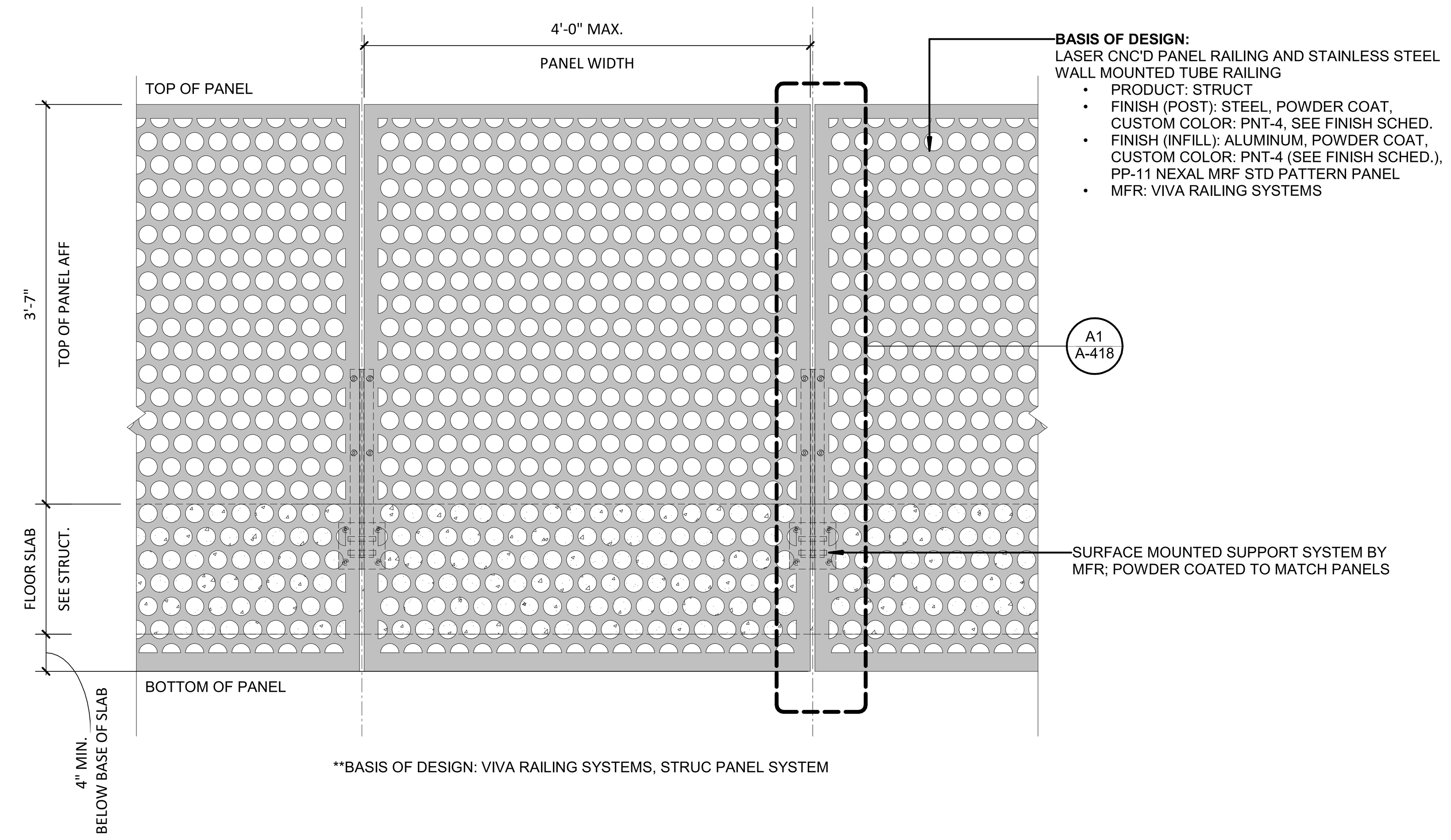


BASIS OF DESIGN:
LASER CNC'D PANEL RAILING AND STAINLESS STEEL WALL MOUNTED TUBE RAILING
- PRODUCT: STRUCT
- FINISH (POST): STEEL, POWDER COAT, CUSTOM COLOR: PNT-4, SEE FINISH SCHED.
- FINISH (INFILL): ALUMINUM, POWDER COAT, CUSTOM COLOR: PNT-4 (SEE FINISH SCHED.), PP-11 NEXAL MRF STD PATTERN PANEL
- FINISH (HAND RAIL): STAINLESS STEEL TUBE, #6 SATIN, 1 1/2" DIAMETER
- MFR: VIVA RAILING SYSTEMS



C1 ENLARGED STAIR PLAN - LEVEL 2 - LIBARY STAIR

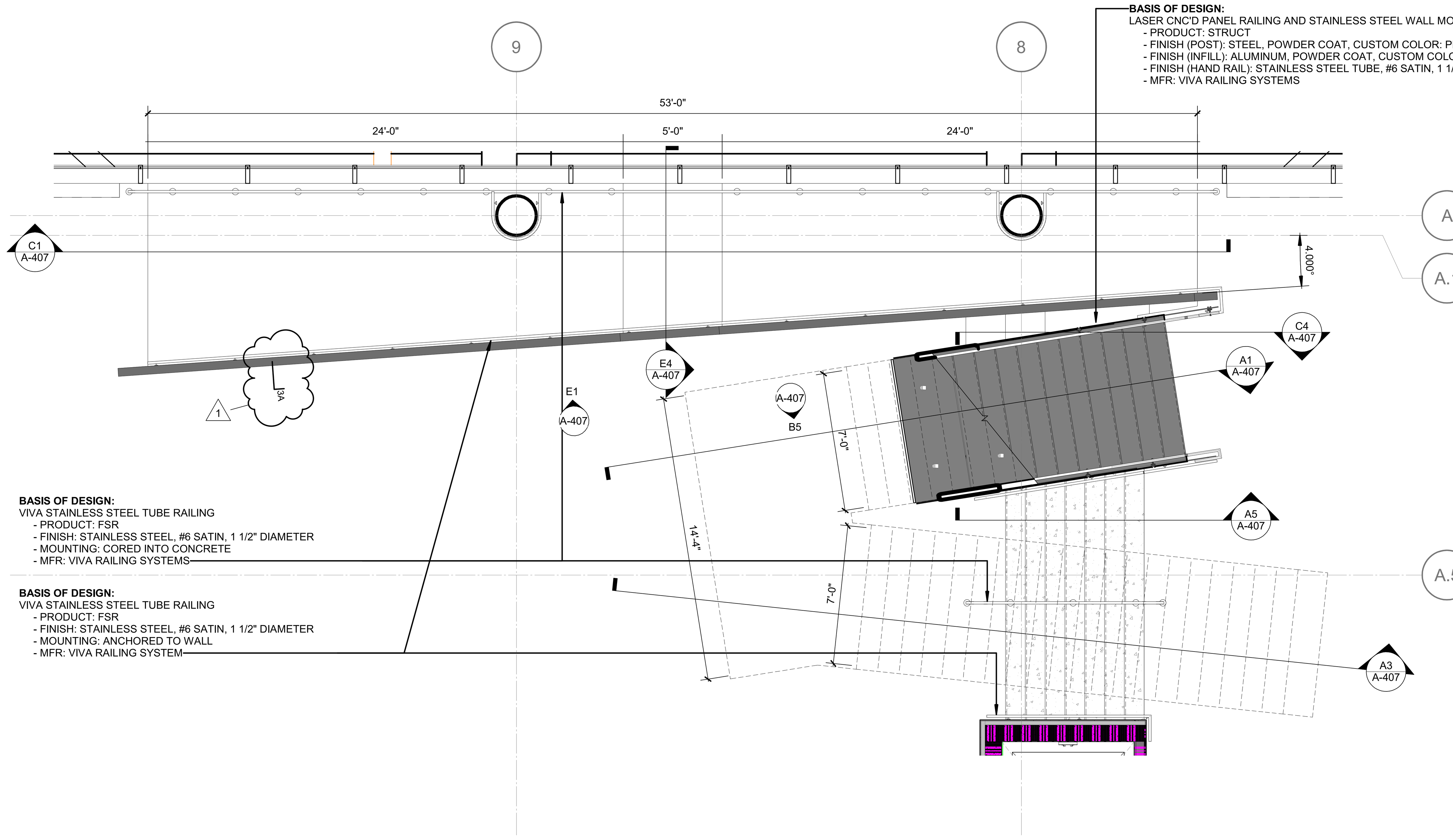
1/4" = 1'-0"



C4 TYPICAL LIBRARY BALCONY PANEL RAILING

1" = 1'-0"

BASIS OF DESIGN:
LASER CNC'D PANEL RAILING AND STAINLESS STEEL WALL MOUNTED TUBE RAILING
- PRODUCT: STRUCT
- FINISH (POST): STEEL, POWDER COAT, CUSTOM COLOR: PNT-4, SEE FINISH SCHED.
- FINISH (INFILL): ALUMINUM, POWDER COAT, CUSTOM COLOR: PNT-4 (SEE FINISH SCHED.), PP-11 NEXAL MRF STD PATTERN PANEL
- FINISH (HAND RAIL): STAINLESS STEEL TUBE, #6 SATIN, 1 1/2" DIAMETER
- MFR: VIVA RAILING SYSTEMS

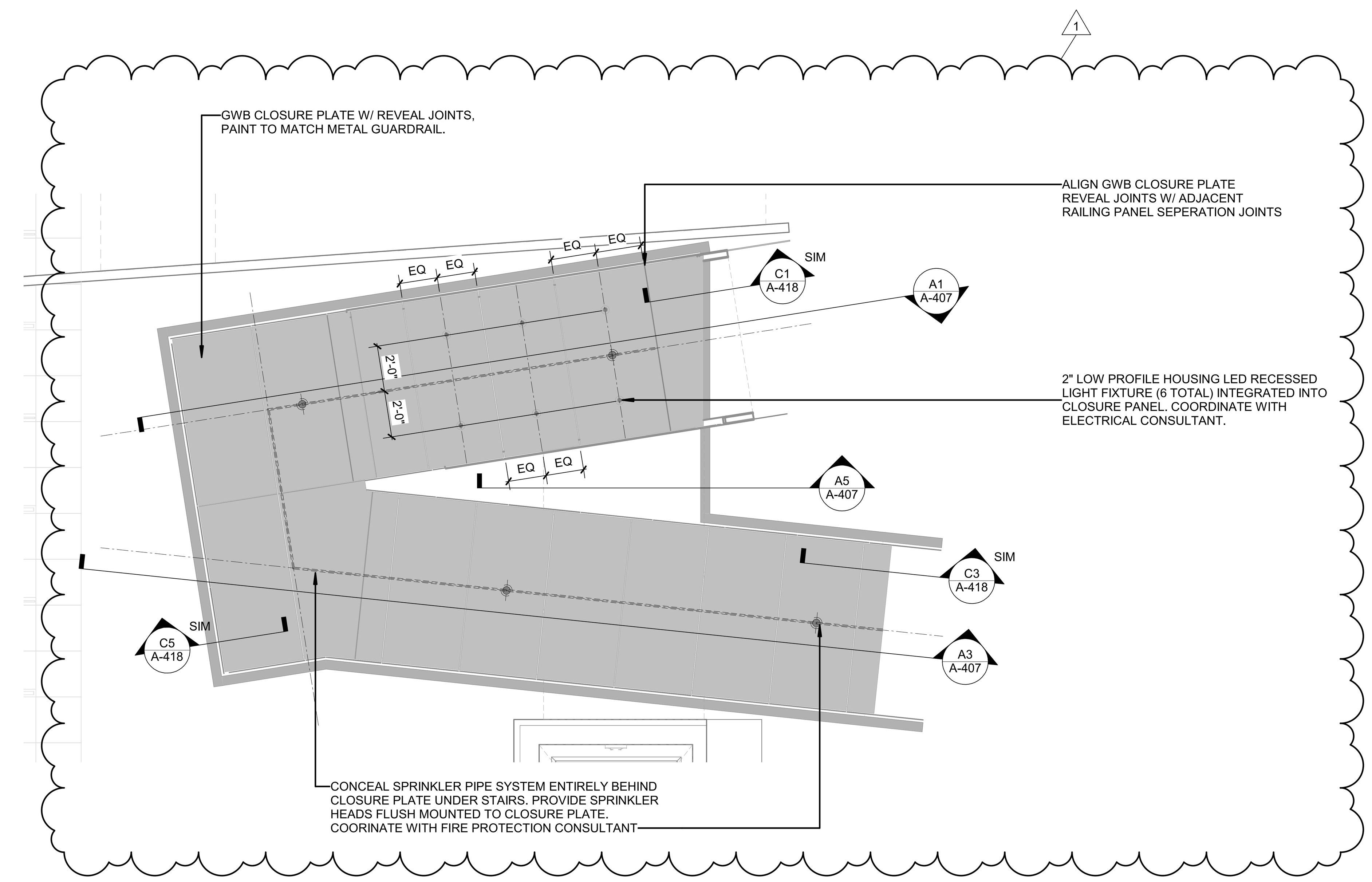


BASIS OF DESIGN:
VIVA STAINLESS STEEL TUBE RAILING
- PRODUCT: FSR
- FINISH: STAINLESS STEEL, #6 SATIN, 1 1/2" DIAMETER
- MOUNTING: CORED INTO CONCRETE
- MFR: VIVA RAILING SYSTEMS

BASIS OF DESIGN:
VIVA STAINLESS STEEL TUBE RAILING
- PRODUCT: FSR
- FINISH: STAINLESS STEEL, #6 SATIN, 1 1/2" DIAMETER
- MOUNTING: ANCHORED TO WALL
- MFR: VIVA RAILING SYSTEM

A1 ENLARGED STAIR PLAN - LEVEL 1 - LIBARY STAIR

1/4" = 1'-0"



A4 ENLARGED RCP STAIR PLAN - LEVEL 1 - LIBRARY STAIR 1 (UNDERTSAIR CLOSURE PLATES)

1/4" = 1'-0"

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