

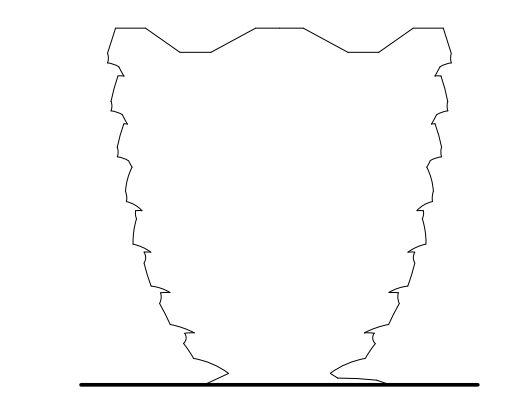


Hudson Yards

VESSEL

530 WEST 33RD STREET
NEW YORK, NY

DOB PERMIT APPLICATION SET



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048
Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510
Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

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DO NOT
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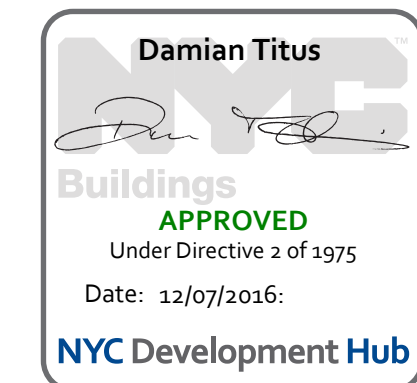
D.O.B. BUILDING PERMIT FILING 05/20/2016
No. Issue Date

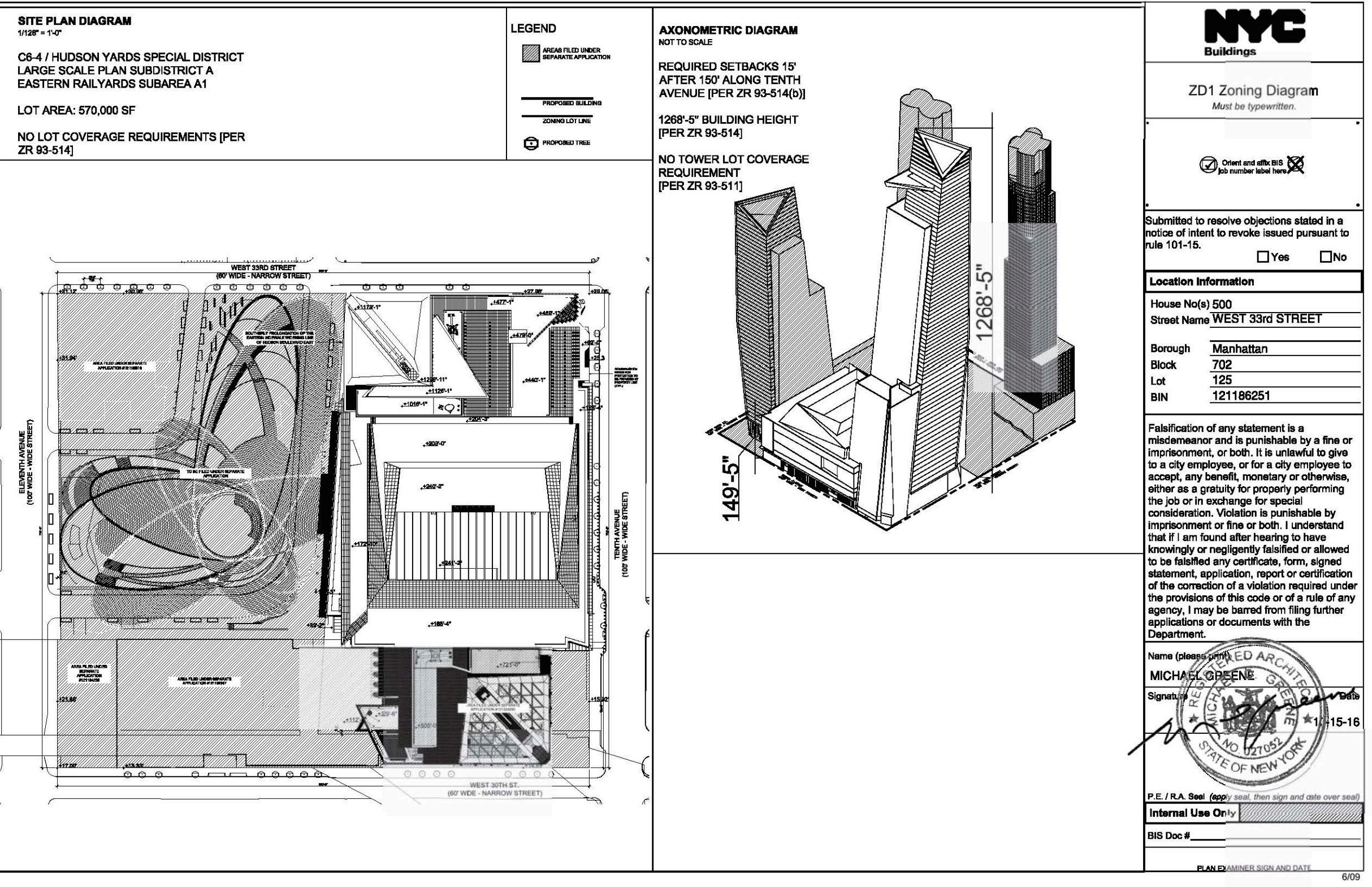
Date: 05/15/14
Project No: 2298007
Drawn By: [Signature]
Sheet Number:
Drawing Title:

HYE-VS-T-001.00

COVER SHEET

Sheet Number
T-001.00





ZD1 Zoning Diagram

1) Applicant Information Required for all applications.

Applicant Name: MICHAEL GREENE
 Business Name: KOHN PEDERSEN FOX & ASSOCIATES
 Business Address: 11 WEST 42ND STREET
 City: NEW YORK, State: NY, Zip: 10036
 License Number: 027952

2) Additional Zoning Characteristics Required for all applications.

Building Code Group: N.Y.C. Code 24-00
 Zoning Floor Area (sq. ft.): 1,423,704

3) BBA and/or CPC Approval Required for all applications.

Board of Standards & Appeals (BSA) Approval: Yes, No
 City Planning Commission (CPC) Approval: Special Permit, Other

4) Proposed Floor Area Required for all applications. One Use Group per line.

Floor Number	Building Code Group	Floor Area (sq. ft.)	Use Group	Residential	Community Facility	Commercial	Manufacturing	FAR
11	60-57R	0	0	0	0	54,961	0	1.1
12	60-57R	6	0	0	0	54,961	0	1.1
13	60-65B	6	0	0	0	54,961	0	1.1
14	60-32D	6	0	0	0	54,961	0	1.1
15	60-98B	6	0	0	0	54,961	0	1.1
16	49-147	6	0	0	0	43,229	0	0.8
17	50-26B	6	0	0	0	53,369	0	0.9
18	50-32D	6	0	0	0	52,309	0	0.8
19	50-37D	6	0	0	0	53,778	0	0.8
20	50-47A	6	0	0	0	46,672	0	0.8
21	57-08B	6	0	0	0	0	0	0
21U	2-05B	6	0	0	0	0	0	0
22	49-097	6	0	0	0	45,662	0	0.8
23	44-14	6	0	0	0	31,462	0	0.6
24	43-461	6	0	0	0	39,866	0	0.7
25	43-05A	6	0	0	0	39,866	0	0.7
26	42-76B	6	0	0	0	38,147	0	0.7
27	42-44A	6	0	0	0	38,905	0	0.7
28	42-13B	6	0	0	0	38,545	0	0.7
29	41-82E	6	0	0	0	38,254	0	0.7
30	41-82D	6	0	0	0	37,987	0	0.7
31	41-207	6	0	0	0	37,915	0	0.7
32	40-887	6	0	0	0	37,359	0	0.7
33	40-587	6	0	0	0	37,068	0	0.6
34	40-37E	6	0	0	0	36,393	0	0.6
35	39-86B	6	0	0	0	36,398	0	0.6
36	39-05B	6	0	0	0	36,121	0	0.6
37	39-347	6	0	0	0	36,727	0	0.6
38	39-05B	6	0	0	0	36,093	0	0.6
Totals	cont.	0	0	0	0	cont.	0	cont.
Total Zoning Floor Area cont.								

ZD1 Zoning Diagram

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39	38-86B	6	0	0	0	0	0	0
39U	1-851	6	0	0	0	0	0	0
40	37-987	6	0	0	0	33,278	0	0.6
41	37-88B	6	0	0	0	34,867	0	0.6
42	37-37B	6	0	0	0	34,335	0	0.6
43	37-06B	6	0	0	0	34,943	0	0.6
44	36-75B	6	0	0	0	33,724	0	0.6
45	36-447	6	0	0	0	33,403	0	0.6
46	36-137	6	0	0	0	33,112	0	0.6
47	35-82B	6	0	0	0	32,800	0	0.6
48	35-515	6	0	0	0	32,418	0	0.6
49	35-205	6	0	0	0	32,149	0	0.6
Totals	cont.	0	0	0	0	cont.	0	cont.
Total Zoning Floor Area cont.								

ZD1 Zoning Diagram

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Floor Number	Building Code Group	Floor Area (sq. ft.)	Use Group	Residential	Community Facility	Commercial	Manufacturing	FAR
TOWER C - FILED UNDER SEPARATE APPLICATION (121324290)								
501	WEST 30TH STREET	1,799,746				1,423,704		2.50
TOWER D - FILED UNDER SEPARATE APPLICATION (121184208)								
502	WEST 30TH STREET	960,274				740,227		1.3
CULTURE SHED - FILED UNDER SEPARATE APPLICATION (121192397)								
545	WEST 30TH STREET	120,239				78,302		1.4
TOWER E - FILED UNDER SEPARATE APPLICATION (121182518)								
560	WEST 33RD STREET	1,046,332				489,433		1.53
Totals		7,960,340		1,229,660	78,302	4,875,094	0	10.9
Total Zoning Floor Area 6,180,262								

Hudson Yards Eastern Railyards

Block/Lots: 702 / 8001,8002, 8003, 4, 10, 125, 150, 175

Zoning Map no.: 8b/8d

Zoning District: C6-4/HY (R10 Equivalent)

Large-Scale Plan Subdistrict A

Eastern Railyards Subarea A1

Community District: 4

Zoning Lot Area: 570,000

Floor Area Allowed (ZR-93-21(b))	FAR	Max Zoning Area
Max Commercial	9	5,130,000
Max Residential	3	1,710,000
Max Community Facility FAR	2	1,140,000
Max on Zoning Lot (all uses combined)	11	6,270,000

Floor Area Proposed on ERY¹

Building	Zoning Floor Area (ZFA)			Total Area by Building
	Commercial Use	Residential Use	Community Facility	
Tower C	1,423,704			1,423,704
Tower A & Retail Podium ²	3,064,118			3,064,118
Tower D		740,227		740,227
Culture Shed ³			76,302	76,302
Tower E	387,212	489,433		876,645
Pavilion ⁴	10,800			10,800
Vessel ⁵	0			0
Total ZFA on ERY by Use	4,885,834	1,229,660	76,302	
Total FAR on ERY by Use	8.572	2.157	0.134	
Total ZFA on ERY (all uses)	6,191,796			
Total FAR on ERY (all uses)	10.863			

- Areas shown are a compilation of the areas shown on each individual building's application currently on file with the Department of Buildings. These areas are compiled to provide an overview of proposed development on the entire zoning lot. Refer to individual building applications for all other zoning compliance information, including, but not limited to, building location, setbacks and detailed floor area information.
- Floor area shown on Platform, application # 121331763 is not included above as area is now included in Tower A / Retail Podium application #121186251
- Floor area shown on Mini-D, application # 121331193 is not included above as area is now included in Culture Shed filing - application #121192397
- Pavilion has not yet been filed. Area shown is the maximum area allowed under zoning resolution (ZR-93-71(b))
- Vessel is an art piece functioning as an elevated aerial walkway which is unenclosed and contains no floor area as defined in ZR 12-10.

ZR 23-24 / 35-40 - DWELLING UNITS

Dwelling unit counts shown below provided for overview of zoning lot, refer to individual building applications for dwelling unit compliance

D.U. Factor (R10 Equivalent)	Count
Max FA on site	6,270,000
Commercial FA used	4,885,834
Community Facility FA used	76,302
Max Residential FA available on site	1,307,864
Max Number of Dwelling Units	1,656

Dwelling units Provided

Building	Count
Tower D (#121184208)	391
Tower E (#121192618)	137
Total Dwelling Units Provided	528

< 1,677 COMPLIES

ZR 33-03 / 93-62 - STREET TREES

Street	Frontage	Trees Provided
Frontage along 33rd Street: 800'		
Frontage along Tenth Ave.: 712.5'		
Frontage along 30th Street: 800'		
Frontage along Eleventh Ave.: 712.5'		
Total Frontage: 3,025' / 25' = 121 Trees		121 Trees Required
		61 Provided

Note: Trees not provided at curb cuts, underneath existing highline, above DEP water tunnel infrastructure, or along Eleventh Avenue viaduct due to infeasibility of planting. Refer to individual building applications for further information

ZR 36-62 - OFF-STREET LOADING REQUIREMENTS

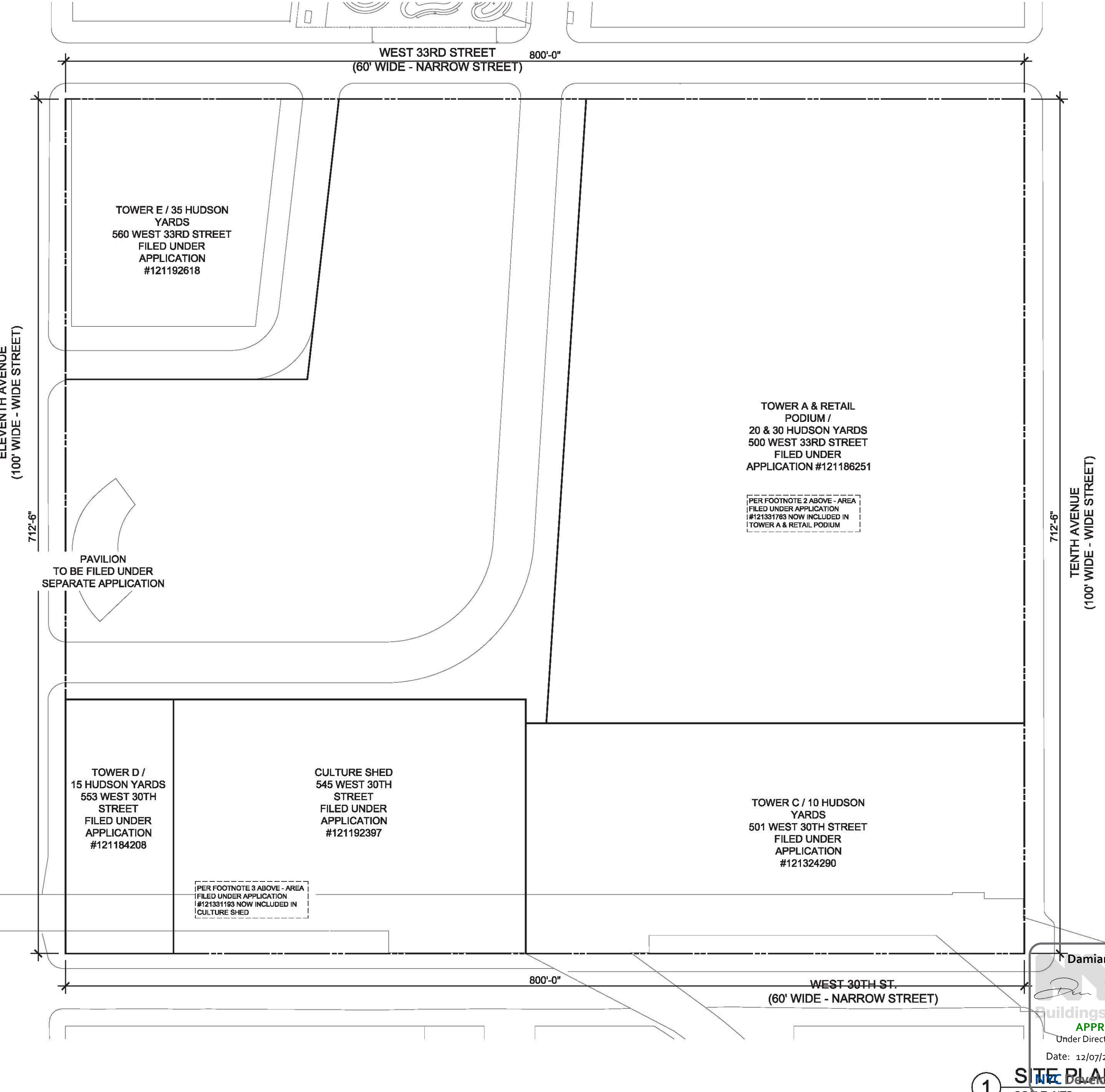
COMPLIANCE WITH ZR 36-62 - REQUIRED ACCESSORY OFF-STREET LOADING BERTHS IS SHOWN ON INDIVIDUAL APPLICATIONS

ZR 36-70 - BICYCLE PARKING

SEE INDIVIDUAL APPLICATIONS FOR DETAILED COMPLIANCE WITH ZR 36-70 - SUMMARY OF COMPLIANCE SHOWN BELOW

Building	REQUIRED SPACES	PROVIDED SPACES	COMPLIANCE
TOWER C	189	189	COMPLIES
TOWER A & RETAIL PODIUM	377	377	COMPLIES
TOWER D	195	258	COMPLIES
CULTURE SHED	10	10	COMPLIES
TOWER E	113	113	COMPLIES
PAVILION	NOT YET FILED	NOT YET FILED	N/A
TOTALS	884	947	COMPLIES

MASTER PLAN ZONING NOTES



FOR REFERENCE ONLY
 THIS PAGE WAS ORIGINALLY PREPARED UNDER NB APPLICATION #121186251 BY KOHN PEDERSON FOX ASSOCIATES, PC

HUDSON YARDS - EASTERN RAILYARDS

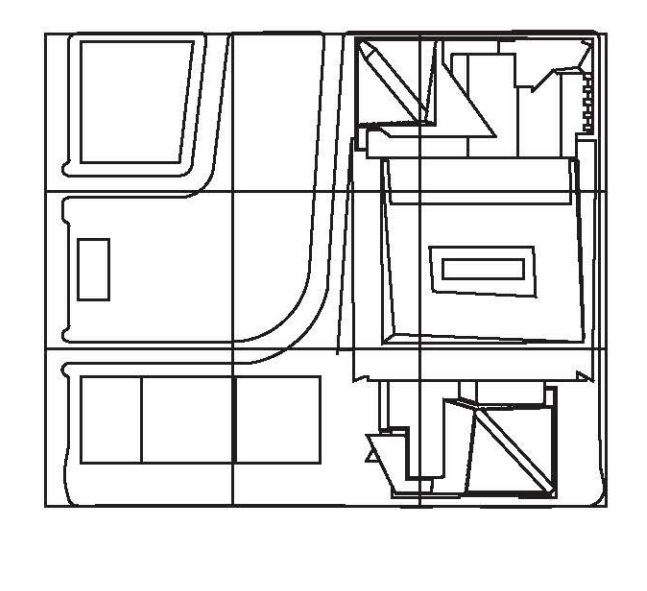
Block 702, NY New York, NY

Client: Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.1510

Architect: Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10036
 Tel: 212.977.6500 Fax: 212.966.2526

- 12 D.O.B. BUILDING PERMIT FILING 11/30/2016
- 11 D.O.B. BUILDING PERMIT FILING 10/15/2016
- 10 D.O.B. BUILDING PERMIT FILING 8/17/2016
- 9 D.O.B. BUILDING PERMIT FILING 5/27/2016
- 8 D.O.B. BUILDING PERMIT FILING 5/20/2016
- 7 D.O.B. BUILDING PERMIT FILING 1/8/2016
- 6 D.O.B. BUILDING PERMIT FILING 11/13/2015
- 5 D.O.B. BUILDING PERMIT FILING 7/31/2015
- 4 D.O.B. BUILDING PERMIT FILING 4/17/2015
- 3 D.O.B. BUILDING PERMIT FILING 4/10/2015
- 2 D.O.B. BUILDING PERMIT FILING 4/2/2015
- 1 D.O.B. BUILDING PERMIT FILING 2/28/2015



Date: 6/20/2014
 Project No: 1776
 Title: HY-ERY-Z-000-00
 Drawing Title: ZONING FLOOR AREA MASTER PLAN
 Drawing Number: Z0-000
 P-User Drawing Number: Z-000.00
 SHEET 1 OF X

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

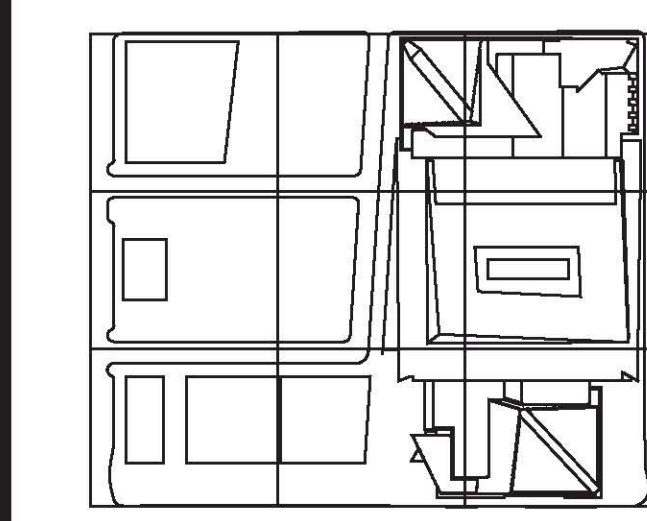
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 62nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Thomson Tomasetti, Inc.
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Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.806.5000

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DOB BUILDING PERMIT FILING 05/20/18
Date Date
Key Plan



Date 9/10/2015
Project No. 2298.02
Drawn by [Signature]
Sheet Number

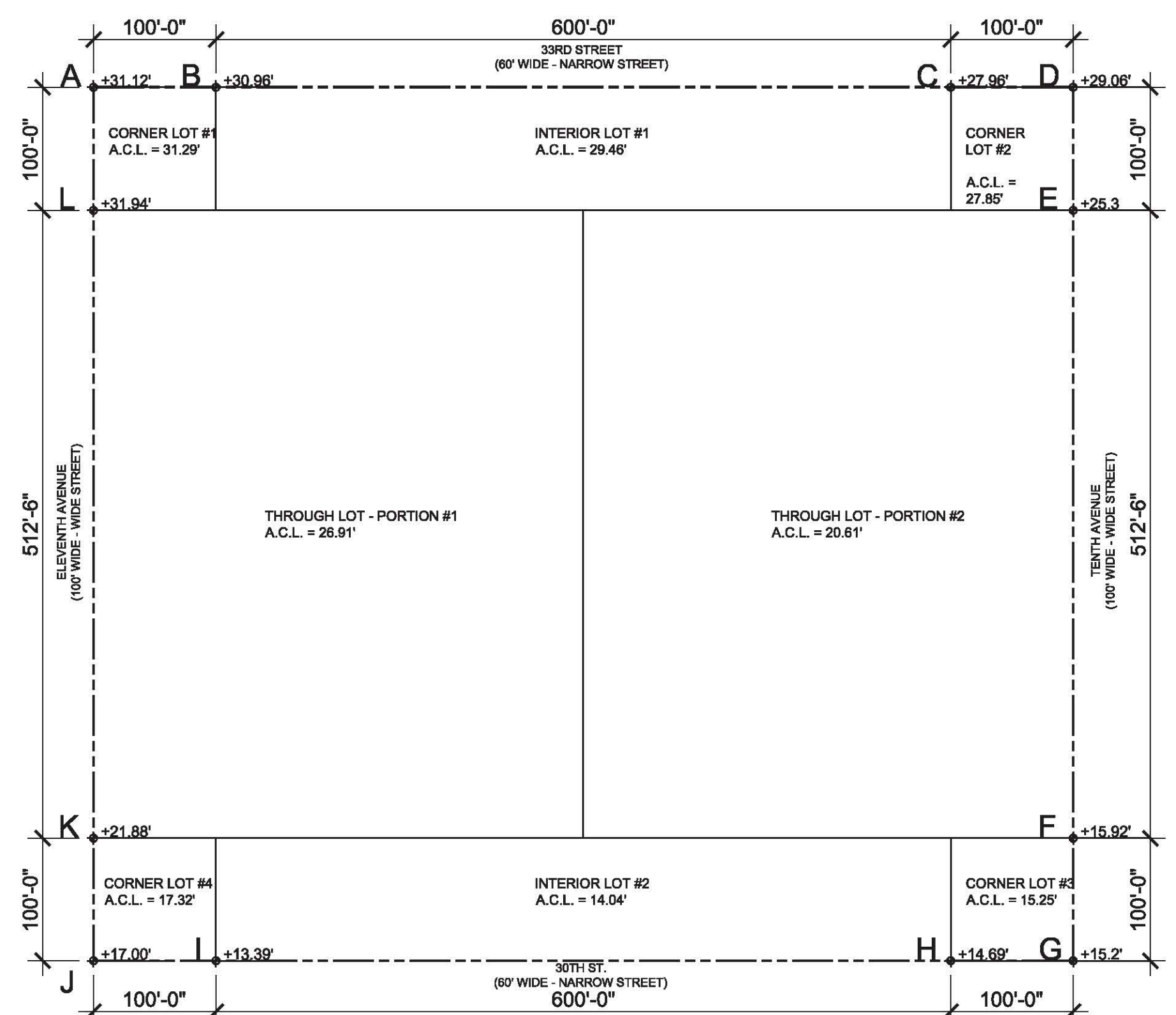
HYE-VS-ZO-001

Drawing Title
ZONING
SITE PLAN
NOTES
AVG. CURB

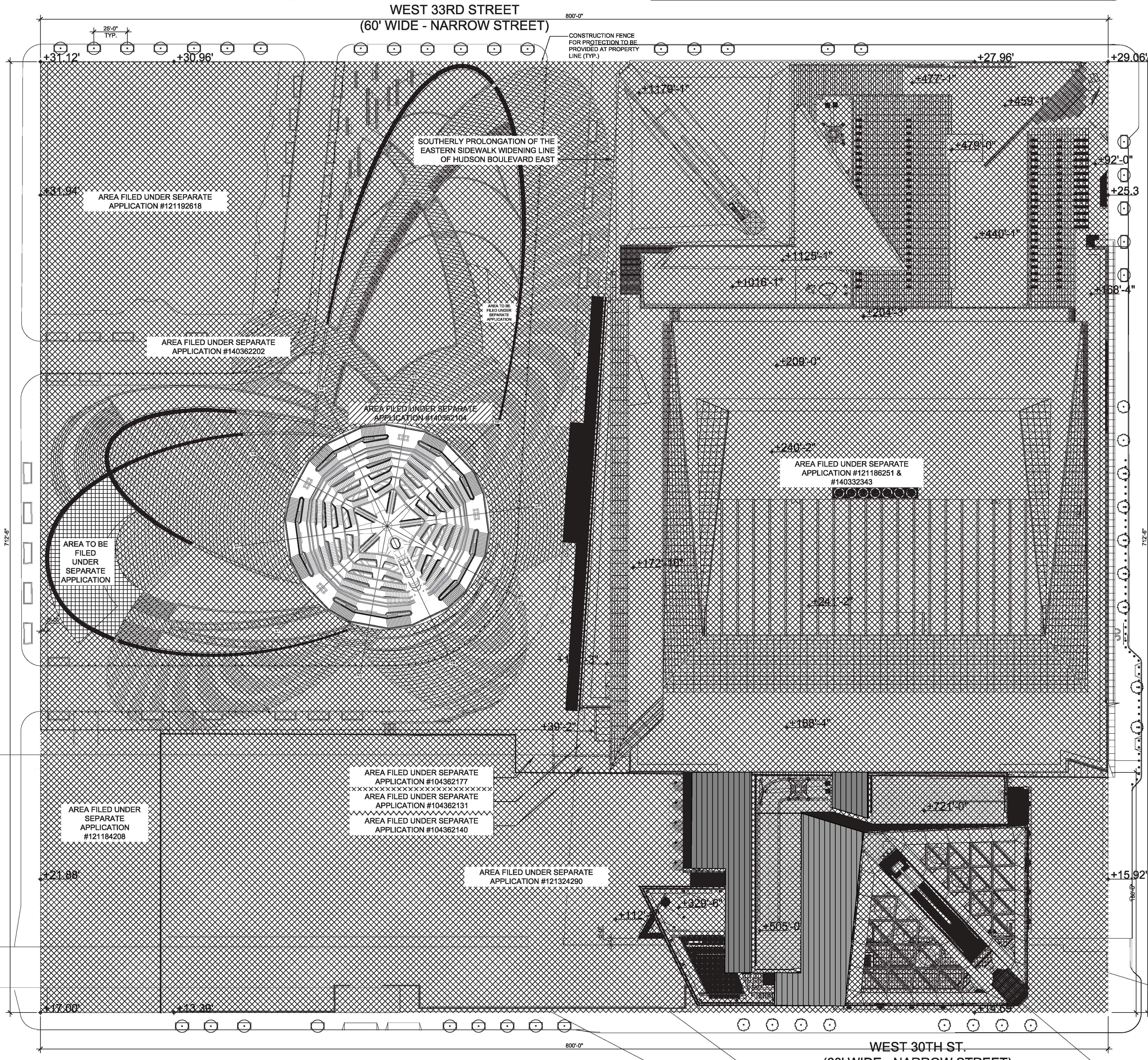
Drawing Number
Z-001.00

Code	Description	Requirement	Notes	Compliance
ZR 11	Block Lot Zoning District	702 175 GS-A/HV (Special Hudson Yards District) Large-Scale Plan Subdistrict A Eastern Railyards Subarea A1 8b/d 570,000 sf		
ZR 13		N/A per ZR 93-80		
ZR 14		N/A		
ZR 15		N/A not a residential alteration		
ZR 32	USE REGULATIONS	Uses Permitted Use Group 1-12		
ZR 32-10		Uses Provided Use Group 12 proposed		
ZR 32-60	SIGN REGS	No signage under this application		Complies
ZR 33-03 / 93-62	STREET TREES	Frontage along 33rd Street: 800' Frontage along Tenth Ave.: 712.5' Frontage along 30th Street: 800' Frontage along Eleventh Ave.: 712.5' Total Frontage: 3,025 / 35 = 121 Trees		
ZR 93-62		121 Trees Required 63 Provided Note: Trees not shown at curb cuts, underneath existing highline, above DEP water tunnel infrastructure, or along Eleventh Avenue viaduct due to infeasibility of planting.		Complies
ZR 93-62	OFF-STREET LOADING	No floor area proposed - no off-street loading required, none proposed.		Complies
ZR 93-70	BICYCLE PARKING	None required per 36-711		Complies
ZR 93-12		N/A No Residential Proposed under this application		
ZR 93-14	RETAIL AND GLAZING REQUIREMENTS	N/A		Complies
ZR 93-15	SECURITY GATES	No security gates proposed under this application		Complies
ZR 93-17	SIGNAGE	No signage under this application		Complies
ZR 93-18	NON-CONFORMING USES	N/A - Nothing in Use Group 16 being proposed		
ZR 93-19	ELECTRICAL SUBSTATION	N/A - no Electrical Substations proposed		
ZR 93-21(b)	Floor Area	No floor area proposed under this application		Complies
ZR 93-31		N/A to subarea A1		
ZR 93-32		N/A to subarea A1		
ZR 93-33		N/A to subarea A1		
ZR 93-34		N/A no redistribution from subarea A1 proposed under this application		
ZR 93-514	HEIGHT AND SETBACK REGULATIONS	Not applicable		Complies
ZR 93-514	LOCATION OF BUILDINGS	See Site Plan - Drawing O1/Sheet Z-001.00		Complies
ZR 93-514(a)(4)	BUILDING LOCATION AT SPUR	N/A - proposed building does not face highline		Complies
ZR 93-60	MANDATORY IMPROVEMENTS			
ZR 93-61 / 93-64	Sidewalk Widening	See Site Plan - Drawing I1/Sheet Z-001.00		Complies
ZR 93-63	Pedestrian Circulation Space	N/A per 93-63(d)		
ZR 93-64	Major Building Entrances	N/A to subarea A1		
ZR 93-66	Open Area Requirements in Large-Scale Plan Subdistrict A	N/A to subarea A1		
ZR 93-70	PUBLIC ACCESS REQUIREMENTS	For compliance with public access requirements see Application #121186251		Complies
ZR 93-71		See application #121186251		Complies
ZR 93-71 (c)		See application #121186251		Complies
ZR 93-72		N/A to subarea A1		
ZR 93-73		N/A to subarea A1		
ZR 93-74		N/A to subarea A1		
ZR 93-75		N/A to subarea A1		
ZR 93-76		N/A to subarea A1		
ZR 93-77		N/A to subarea A1		
ZR 93-78		N/A to subarea A1		
ZR 93-80	PARKING	Permitted 350 Provided 252 - under application #121324290		Complies
ZR 93-82		N/A to subarea A1		
ZR 93-83	Use and Location of Parking Facilities	All parking located above grade is located such that no portion of such parking facility is visible from adjoining streets or publicly accessible open areas. See application #121324290 under which parking is proposed.		Complies
ZR 93-831	Authorization for above-grade parking	N/A - above grade parking complies with paragraph b of Section 93-83.		
ZR 93-84	Curb Cut Restrictions	No curb cuts for parking facilities or loading berths proposed under this application.		Complies
ZR 93-841		N/A to subarea A1		
ZR 93-842		N/A to subarea A1		
ZR 93-85		N/A to subarea A1		
ZR 93-90	Harassment	N/A - no residential proposed under this application		
ZR 93-91	Demolition	N/A - no demolition of "Multiple Dwelling" proposed under this application.		

ZONING CALCULATIONS



CURB LEVEL CALCULATION
SCALE: 1/128"=1'-0"



WEST 30TH ST. (60' WIDE - NARROW STREET)

ELEVENTH AVENUE (100' WIDE - WIDE STREET)

TENTH AVENUE (100' WIDE - WIDE STREET)

Page 2 December 23, 2013

not diminish its essential character as (a) publicly accessible space, open to the sky." See 93-71(b). In this regard, we note that the "Hudson Yards Vessel" is proposed as a multi-level aerial walkway system that is open to the sky and the elements and does not cover the Outdoor Plaza as would a cantilever or similar building feature. As such, we believe that for purposes of calculating its contribution towards the ten percent limit, it would be appropriate to include only the area occupied by the base of the structure.

The views expressed herein are limited to the application of Section 93-71 to the "Hudson Yards Vessel" generally as depicted in the June 17, 2013 renderings. We express no views herein concerning the merits of the "Hudson Yards Vessel" design or its function as an amenity in the Outdoor Plaza.

Sincerely,
[Signature]
David Karnovsky
C. F. Ruchala

REPRINT OF LETTER FROM NYC DEPARTMENT OF CITY PLANNING

Damian Titus
1 SITE PLAN
SCALE: 1/8"=1'-0"
DATE: 09/10/2015
NYC Development Hub

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
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*Civil, Mechanical, Electrical, Plumbing,
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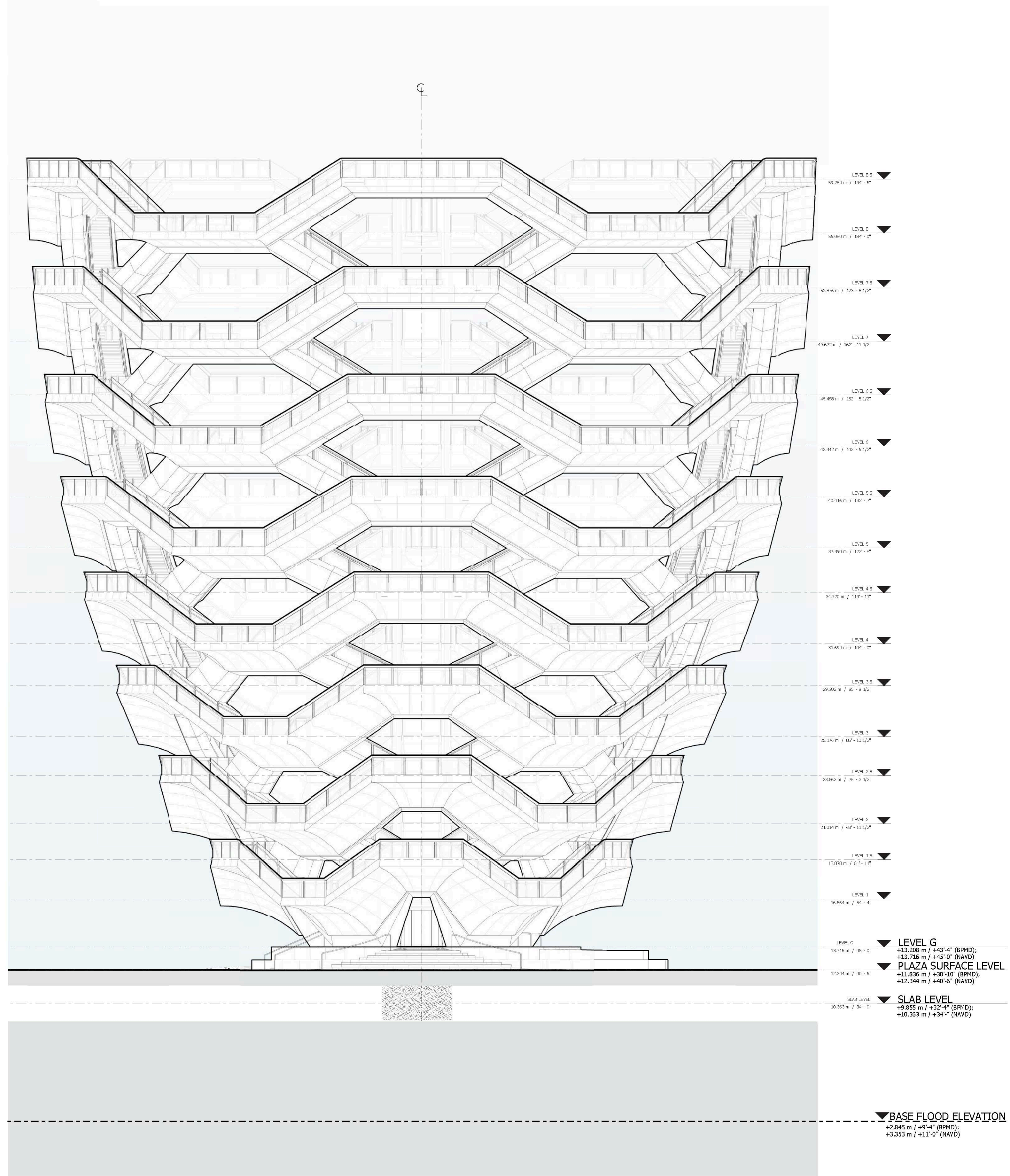
Key Plan

Date: 2/15/2013
Project No: 2298.02
Drawing No: HYE-VS-A-002

BUILDING DEPARTMENT
NOTES &
FEMA MAP

Drawing Number: A-001.00

SHEET OF 86



SECTION FLOOD LEVEL AT VESSEL

CODE SUMMARY
APPLICABLE CODES
2014 NEW YORK CITY BUILDING CODE
2014 NEW YORK CITY MECHANICAL CODE
2014 NEW YORK CITY FIRE CODE
2014 NEW YORK CITY PLUMBING CODE
2014 NEW YORK CITY ELECTRICAL CODE (BASED ON 2005 NED)
AMERICANS WITH DISABILITIES GUIDELINES (ADAAG) 2003 (CSAANS) 117

OCCUPANCY GROUPS
A-5 ASSEMBLY

THE BUILDING WILL BE CONSTRUCTED USING THE NONSEPARATED MIXED USE PROVISIONS OUTLINED IN SECTION 508.3.2 OF THE BUILDING CODE.

TABLE 803
CONSTRUCTION CLASSIFICATION
CONSTRUCTION TYPE
AUTOMATIC SPRINKLERS

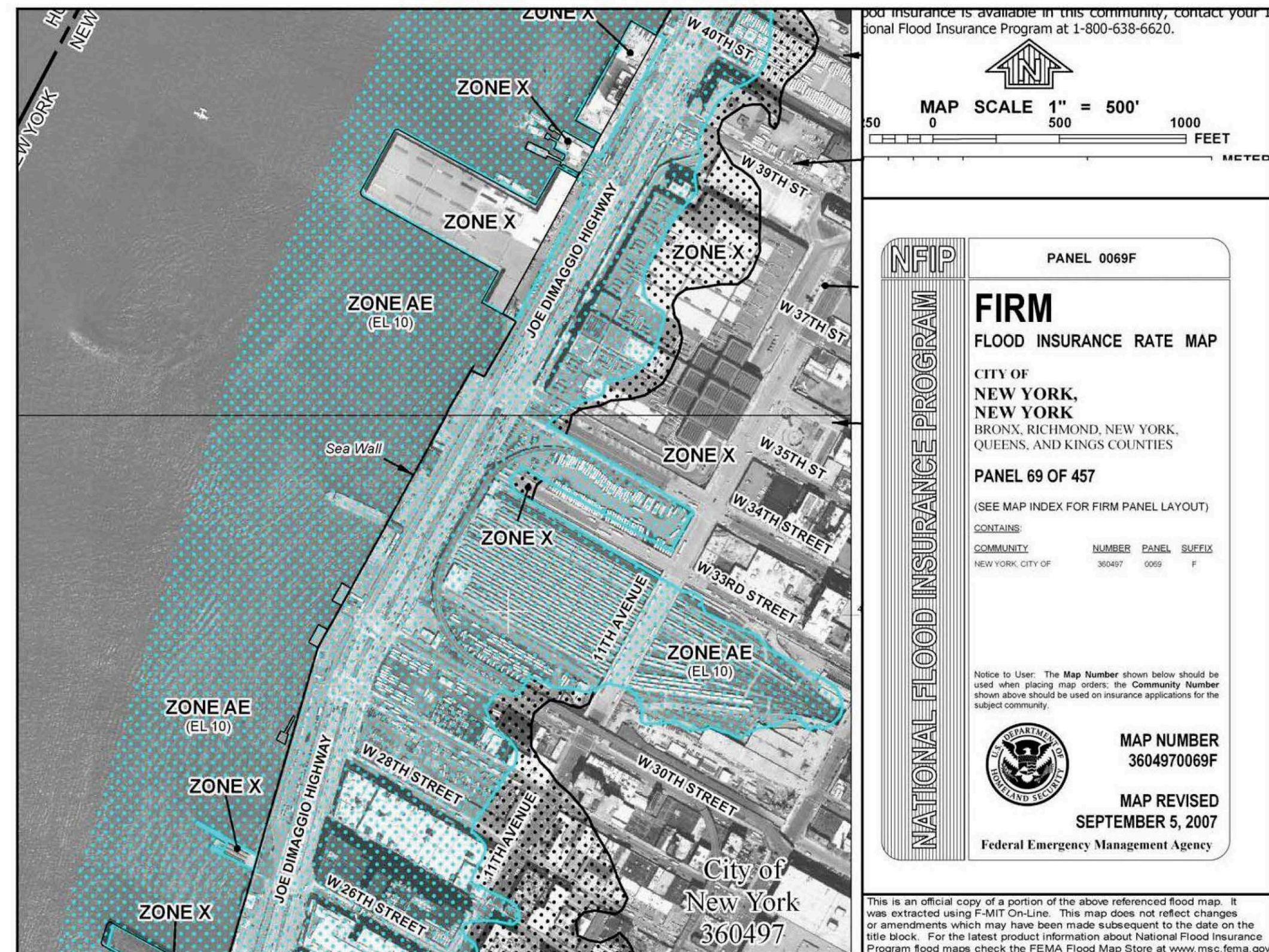
IN ACCORDANCE WITH NONSEPARATED MIXED USE PROVISIONS OF THE BUILDING CODE, THE HEIGHT AND AREA OF THE BUILDING MUST COMPLY WITH THE MOST RESTRICTIVE HEIGHT AND AREA REQUIREMENTS FOR THE OCCUPANCY CLASSIFICATIONS OF THE BUILDING AND THE CONSTRUCTION TYPE.

ALLOWABLE BUILDING AREA: UNLIMITED
ALLOWABLE BUILDING HEIGHT: UNLIMITED

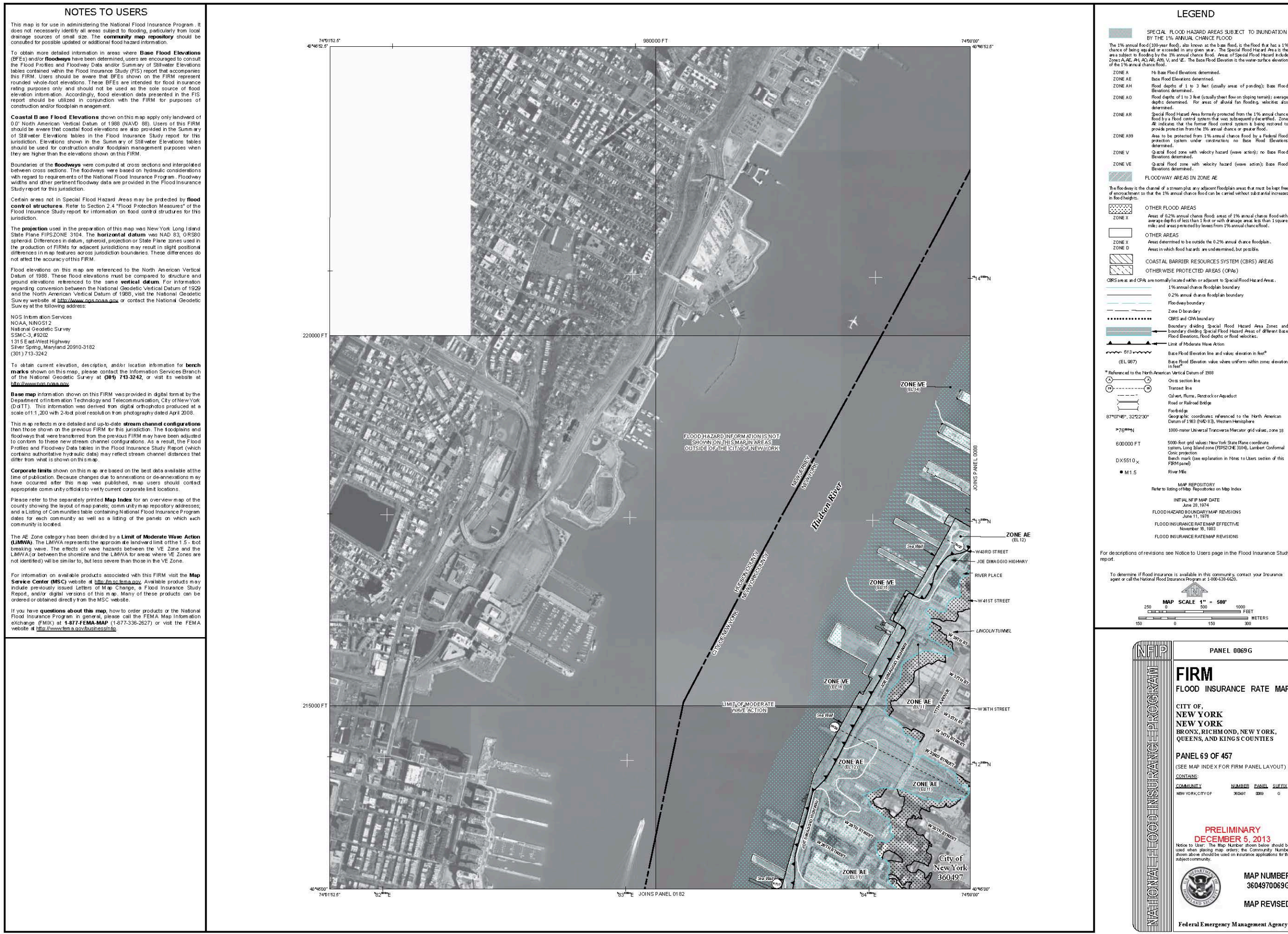
CONSTRUCTION REQUIREMENTS
FIRE RESISTANCE OF STRUCTURAL ELEMENTS MUST BE IN ACCORDANCE WITH THE FOLLOWING:
TABLE 801 & 802

BUILDING ELEMENT	FIRE RESISTANCE RATINGS (IN HOURS)
PRIMARY STRUCTURAL FRAME	0
BEARING WALLS EXTERIOR INTERIOR	0
NONBEARING WALLS AND PARTITIONS EXTERIOR INTERIOR	0
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	0
ROOF CONSTRUCTION AND SECONDARY MEMBERS	0

1. EXTERIOR FIRE SEPARATIONS ARE MEASURED PERPENDICULARLY FROM THE BUILDING FACE TO THE CLOSEST INTERIOR LOT LINE, TO THE CENTERLINE OF A STREET OR PUBLIC WAY, OR TO AN IMAGINARY LINE BETWEEN TWO BUILDINGS ON THE SAME PROPERTY.



FLOOD INSURANCE RATE MAP (2007)



PRELIMINARY FLOOD INSURANCE RATE MAP (2013)

ALL WORK ABOVE BASE FLOOD ELEVATION

DEPARTMENT OF BUILDINGS NOTES

NOTIFICATION OF THE DEPARTMENT: NOTIFICATION TO BE PROVIDED TO DEPARTMENT OF BUILDINGS 24-48 HOURS PRIOR TO COMMENCEMENT OF EARTHWORK, AS PER BC 3304.3.1.

NOTIFICATION OF ADJACENT BUILDING OWNERS: WRITTEN NOTIFICATION TO BE PROVIDED TO ADJACENT BUILDING OWNERS NOT LESS THAN 10 DAYS PRIOR TO COMMENCEMENT OF EXCAVATION WORK, AS PER BC 3304.3.2.

DUTIES AND POWERS OF COMMISSIONER OF BUILDINGS: AUTHORITY TO RENDER INTERPRETATIONS AND TO ADOPT RULES ESTABLISHING POLICIES AND PROCEDURES HELD BY THE COMMISSIONER OF BUILDINGS, AS PER BC 104.

STRUCTURAL DESIGN: BUILDING, STRUCTURES, AND PARTS THEREOF ARE DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN, LOAD AND RESISTANCE FACTOR DESIGN, ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN, OR CONVENTIONAL CONSTRUCTION METHODS, AS PER REQUIREMENTS OF 2014 NYC BUILDING CODE, BC 1604. REFER TO STRUCTURAL DRAWINGS FOR FURTHER INFORMATION.

MECHANICAL EQUIPMENT AND BUILDING SYSTEMS: MECHANICAL EQUIPMENT SHALL BE CONSTRUCTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE 2014 NYC MECHANICAL CODE AND 2014 NYC FUEL GAS CODE, AS PER BC 2801.1. REFER TO MECHANICAL DRAWINGS FOR FURTHER INFORMATION.

PLUMBING SYSTEMS: PLUMBING SYSTEM AND EQUIPMENT SHALL BE CONSTRUCTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE 2014 NYC BUILDING CODE, AS PER BC 2801.1. REFER TO PLUMBING DRAWINGS FOR FURTHER INFORMATION.

SOILS AND FOUNDATIONS: BUILDING AND FOUNDATION SYSTEM DESIGNED AS PER REQUIREMENTS OF BC 1801.

FOOTINGS AND FOUNDATIONS: FOOTINGS AND FOUNDATIONS DESIGNED AS PER REQUIREMENTS OF BC 1805.

PLUMBING SYSTEMS: PLUMBING SYSTEMS DESIGNED AS PER REQUIREMENTS OF BC 2801 AND BC 401.

SEISMIC DESIGN PROVISIONS: CONCRETE COMPONENTS THAT RESIST SEISMIC FORCES DESIGNED AS PER REQUIREMENTS OF BC 1810 AND LL 17785.

TRANSIT AUTHORITY APPROVAL: PROJECT IS NOT WITHIN 200' OF TRANSIT AUTHORITY.

ENERGY CODE: TBD, NO ENCLOSED STRUCTURES, NO CHANGE TO BUILDING ENCLOSURE, AND NO MECHANICAL SYSTEMS.

FLOOD ZONE NOTES:
BASE FLOOD ELEVATION IS +9'-4" (BPMO) +11'-0" (NAVD)
ALL WORK LOCATED ABOVE BASE FLOOD ELEVATION

SPECIAL INSPECTIONS	CODE/SECTION	PROGRESS INSPECTIONS	CODE/SECTION
FIRE-RESISTANT PENETRATIONS AND JOINTS	BC 1704.27	ENERGY CODE COMPLIANCE INSPECTIONS	BC 109.3.5
FLOOD ZONE COMPLIANCE	BC 1704.28/BC 3105	OTHERS TBD	

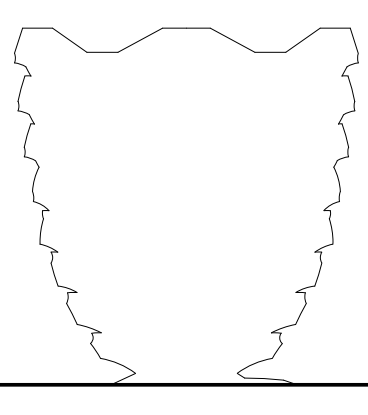
ASSOCIATED APPLICATIONS	DATE FILED	APP #
PLATFORM NEW BUILDING	12/13/1763	121324280
TOWER C NEW BUILDING	12/19/2008	121194208
TOWER D NEW BUILDING	12/19/2008	121194208
TOWER A NEW BUILDING	12/19/2008	121194208
RETAIL PODIUM ALTERATION	14/03/2343	14032343
TOWER E NEW BUILDING	12/11/0818	121192818
CULTURAL SHED	12/11/08287	121192827

HISTORIC LANDMARK STRUCTURES: PROPOSED WORK IS NOT WITHIN 90' OF ANY ADJACENT HISTORIC LANDMARK STRUCTURES. TFPN 1088 THEREFORE NOT APPLICABLE. LANDMARK MAP SHOWN BELOW.



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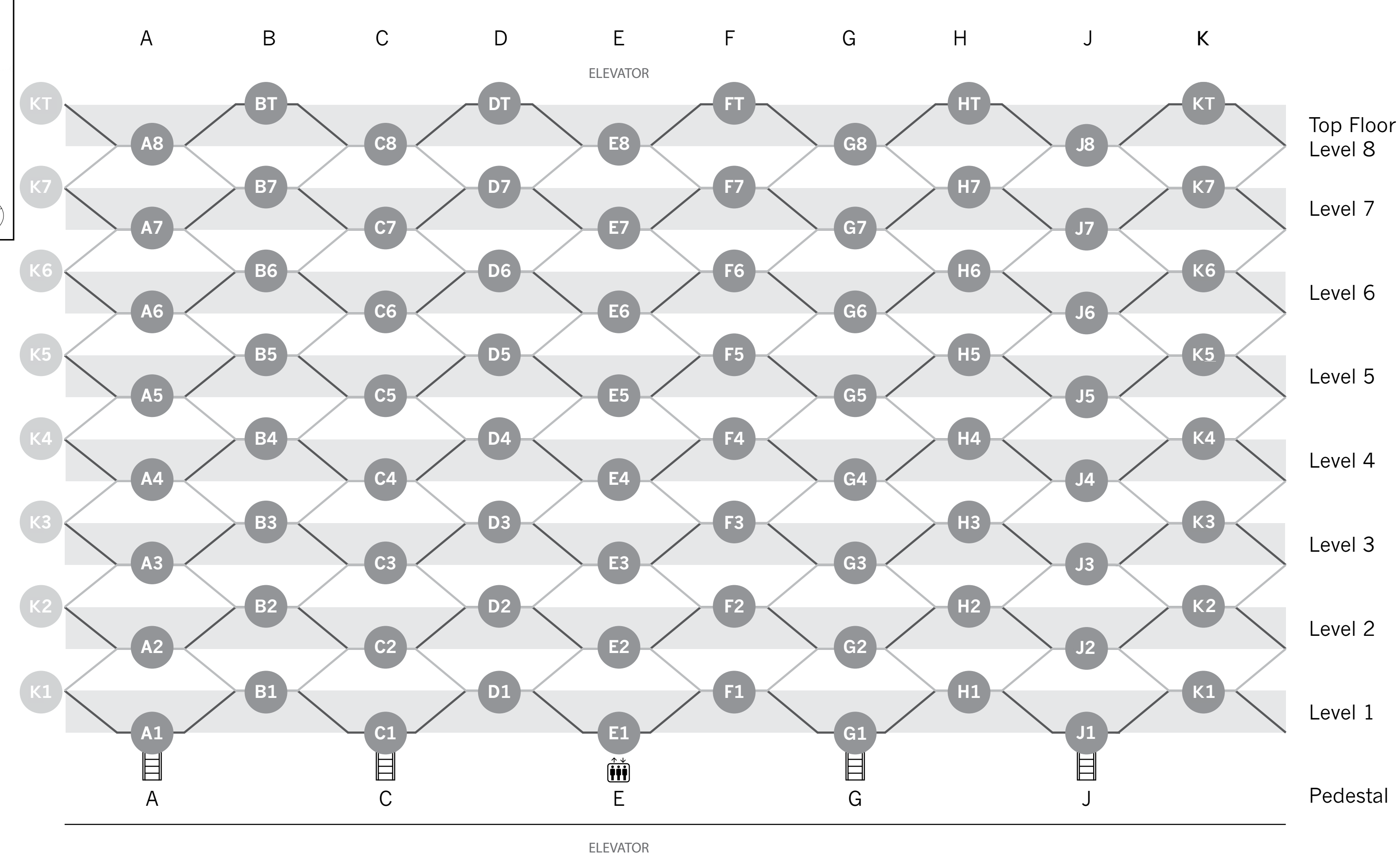
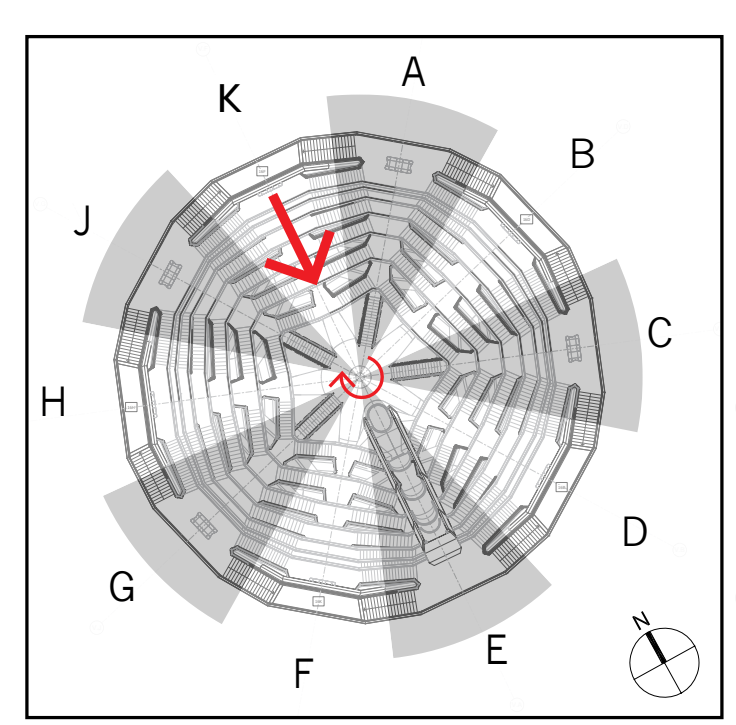
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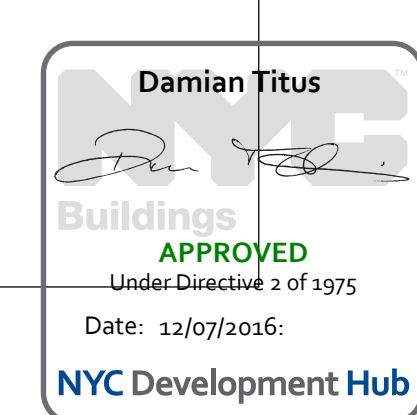
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CODE	ELEMENT	DESCRIPTION
S-1	INTERLAYER (WHERE VISIBLE)	<ul style="list-style-type: none"> Carbon steel Grey to match RAL 7021 (Black Grey) (Colour to be confirmed in mockup)
S-2	EXPOSED STRUCTURAL DECK	<ul style="list-style-type: none"> Structural steel deck (Colour to be confirmed in mock-up)
PC-1	PLATFORM PAVING	<ul style="list-style-type: none"> Precast concrete paver with exposed aggregate 2' x 2' x 2.5" paver size Benchmark sample 'Wausau Tile' H15-266 (To be confirmed in mock up) Rough finish
PC-3	STAIR TREADS AND RISERS	<ul style="list-style-type: none"> Moulded precast concrete stair tread with exposed aggregate Tread and riser as one element spanning full width of stair To match 'Wausau Tile' H15-266 (To be confirmed in mock up) Rough finish
PC-4	LEAN RAIL	<ul style="list-style-type: none"> Precast concrete leanrail with exposed aggregate Elements to span distances between guardrail posts To match 'Wausau Tile' H15-266 (To be confirmed in mock up) Smooth polished finish (finish and colour to be confirmed in mockup)
SS-1	SOFFIT CLADDING	<ul style="list-style-type: none"> 316L, 3mm stainless steel 1.4m/1.5m maximum panel width #7 mirror finish and with copper colour PVD To match approved sample: VES-XX-SA-XX0024
	GUARDRAIL LEAN RAIL FASCIA	<ul style="list-style-type: none"> 316L, 2mm stainless steel external fascia Joint lines to align with posts #7 mirror finish and with copper colour PVD To match approved sample: VES-XX-SA-XX0024
SS-2	GUARDRAIL HANDRAIL	<ul style="list-style-type: none"> 316L stainless steel 3mm thickness (Profile and surface finish to be confirmed in mockup)
SS-3	GUARDRAIL POST	<ul style="list-style-type: none"> 2205 solid stainless steel Water jet cut edges and matt finish sides Exposed weld to match stainless steel colour (Surface finish to be confirmed in mockup)
SS-4	GUARDRAIL UPSTAND	<ul style="list-style-type: none"> 316L stainless steel 3mm thickness (Heavy shot peened finish to be confirmed in mockup)
	GUARDRAIL LEAN RAIL INBOARD FASCIA	<ul style="list-style-type: none"> 316L stainless steel 2mm thickness (Heavy shot peened finish to be confirmed in mockup)
G-1	GUARDRAIL GLASS	<ul style="list-style-type: none"> Laminated clear glazing - low iron
ST-1	PEDESTAL WALKING SURFACE	<ul style="list-style-type: none"> Granite 'Jet Mist' Flamed finish
ST-2	PEDESTAL TERRACE HORIZONTAL SURFACE	<ul style="list-style-type: none"> Granite 'Jet Mist' Rough surface finish TBD
ST-3	PEDESTAL TERRACE VERTICAL SURFACE	<ul style="list-style-type: none"> Granite 'Jet Mist' Smooth surface finish TBD
SS-5	PEDESTAL LIGHTING GRILL	<ul style="list-style-type: none"> Stainless Steel
SS-6	PEDESTAL HANDRAILS	<ul style="list-style-type: none"> 316L Stainless Steel 3mm thickness (Profile and surface finish to be confirmed in mockup)
M-1	ELEVATOR CAR EXTERNAL FRAMING/SURFACES ELEVATOR ENTRANCE / BARRIER FRAMING	<ul style="list-style-type: none"> Stainless Steel Non-Directional Finish
G-2	ELEVATOR CAR GLAZING ELEVATOR ENTRANCE / BARRIER GLAZING	<ul style="list-style-type: none"> Laminated clear glazing - Low Iron
M-2	ELEVATOR CAR VERTICAL INTERNAL SURFACES	<ul style="list-style-type: none"> Cast steel painted finish
M-3	ELEVATOR CAR FLOOR	<ul style="list-style-type: none"> Same as M-1
M-4	ELEVATOR CEILING	<ul style="list-style-type: none"> Same as M-1
ME-1	SECURITY GATES	<ul style="list-style-type: none"> TBD

METRIC SCALE	IMPERIAL SCALE (Nearest equivalent to metric)
1:1	FULL SIZE
1:2	HALF SIZE
1:5	3" = 1'-0"
1:10	1 1/2" = 1'-0"
1:20	3/4" = 1'-0"
1:25	1/2" = 1'-0"
1:30	3/8" = 1'-0"
1:50	1/4" = 1'-0"
1:100	1/8" = 1'-0"
1:200	1/16" = 1'-0"
1:250	1" = 20'-0"
1:500	1" = 80'-0"



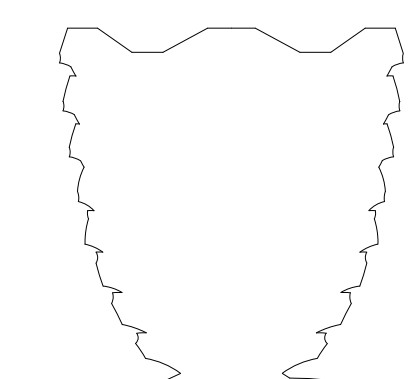
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Project No: 2298007
Drawn By: [Signature]
Sheet Number: [Signature]
Drawing Title: HYE-VS-A-001

**MATERIAL SCHEDULE,
SCALE CONVERSION,
AND SIGNAGE CONCEPT**

Project Number:
A-002.00

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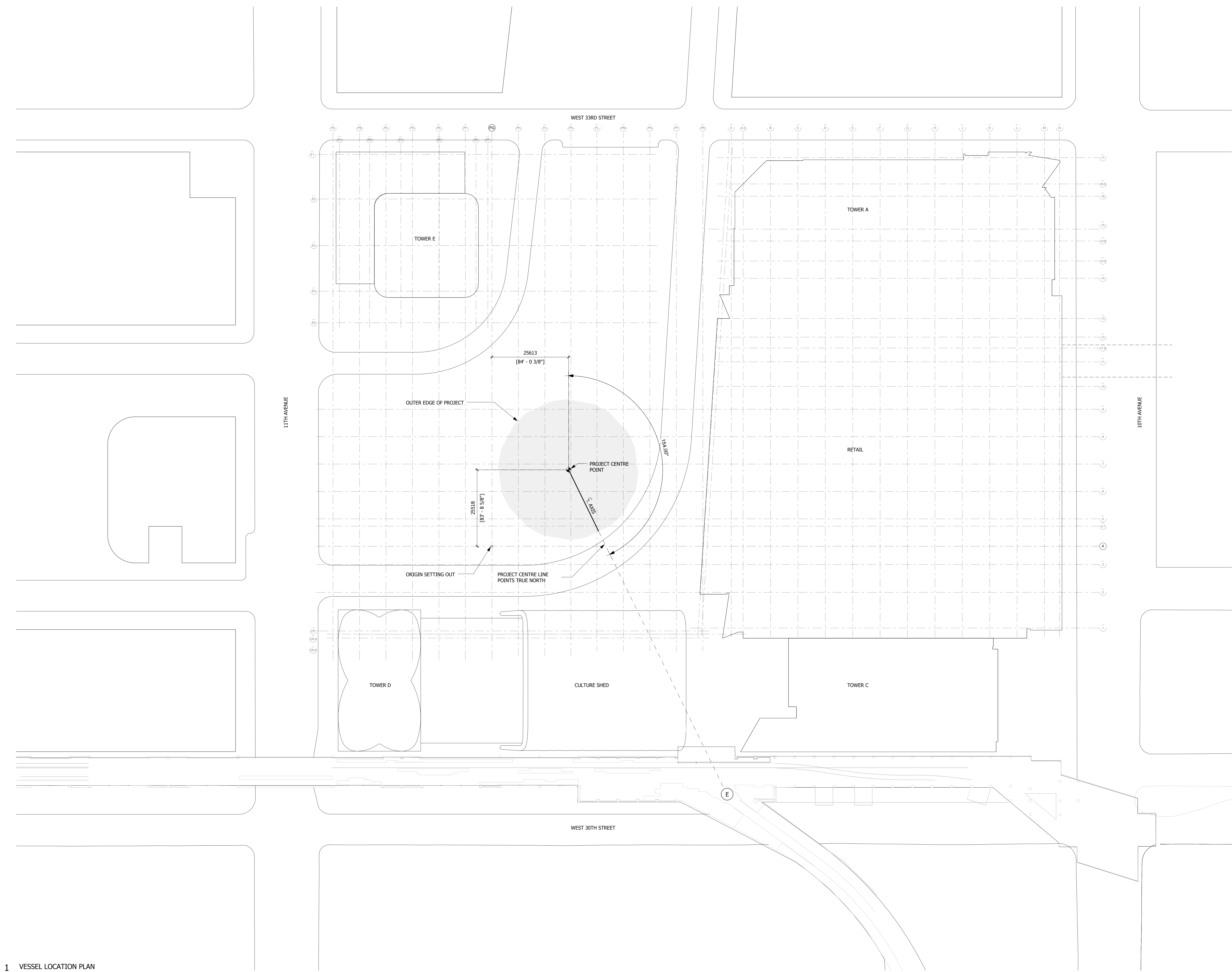
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1 VESSEL LOCATION PLAN
 1 : 500

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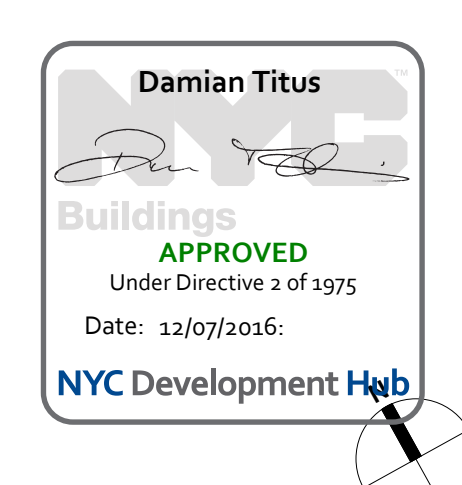
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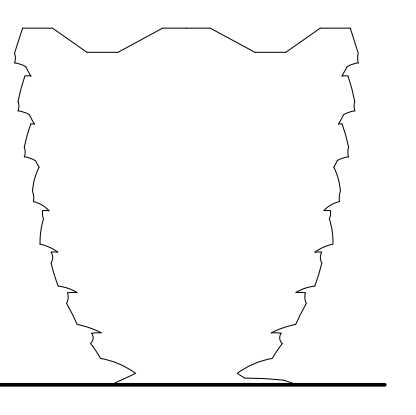
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 Project No: 2298002
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-010

**VESEL LOCATION
PLAN**

Sheet Number
A-010.00





NOTES:
 PROJECT SET OUT ON A RADIAL GRID WITH ROTATIONALLY SYMMETRICAL AND MIRRORED SEGMENTS.
 THERE ARE 10 GRIDLINES V.A - V.K.
 AT GRIDLINE VA-VA SPINE ELEMENT SUPPORTS AN ELEVATOR TRACK.
 THE PROJECT IS SYMMETRICAL ABOUT GRIDLINE V.A-V.F THEREFORE ALL SEGMENTS BETWEEN GRIDLINES V.A-V.B AND V.K-V.A ARE NAMED "SPINE SEGMENT".
 THE SEGMENTS BETWEEN V.B-V.C AND V.J-V.K ARE NAMED "TRANSITION SEGMENTS" AS THEY TRANSITION BETWEEN THE TYPICAL AND SPINE GEOMETRY.



1 SET OUT PLAN
1 : 100

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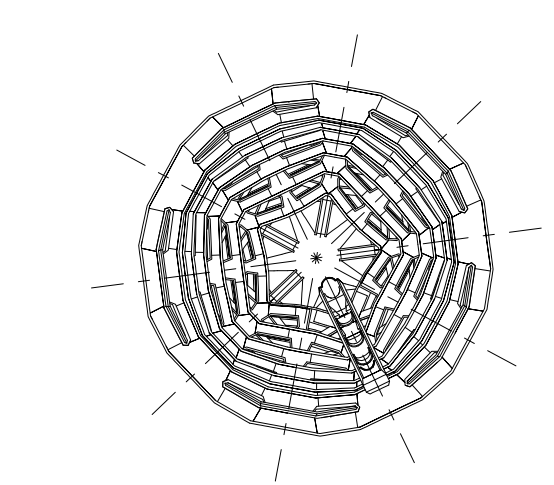
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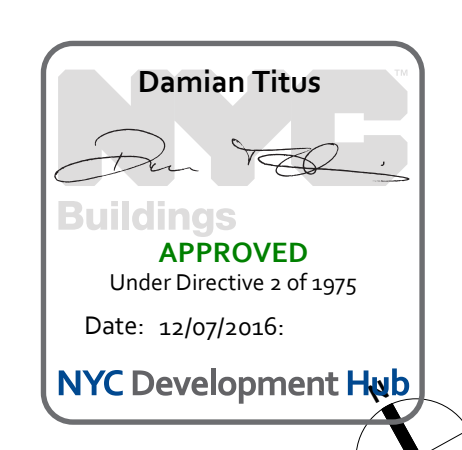


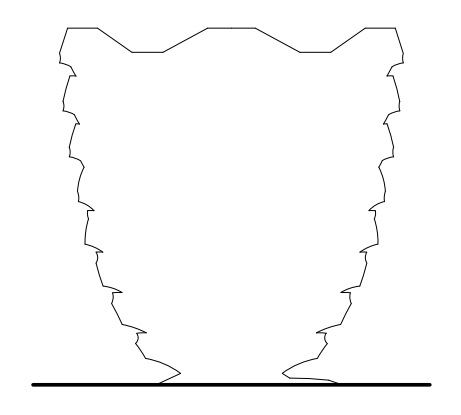
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HYE-VS-A-020

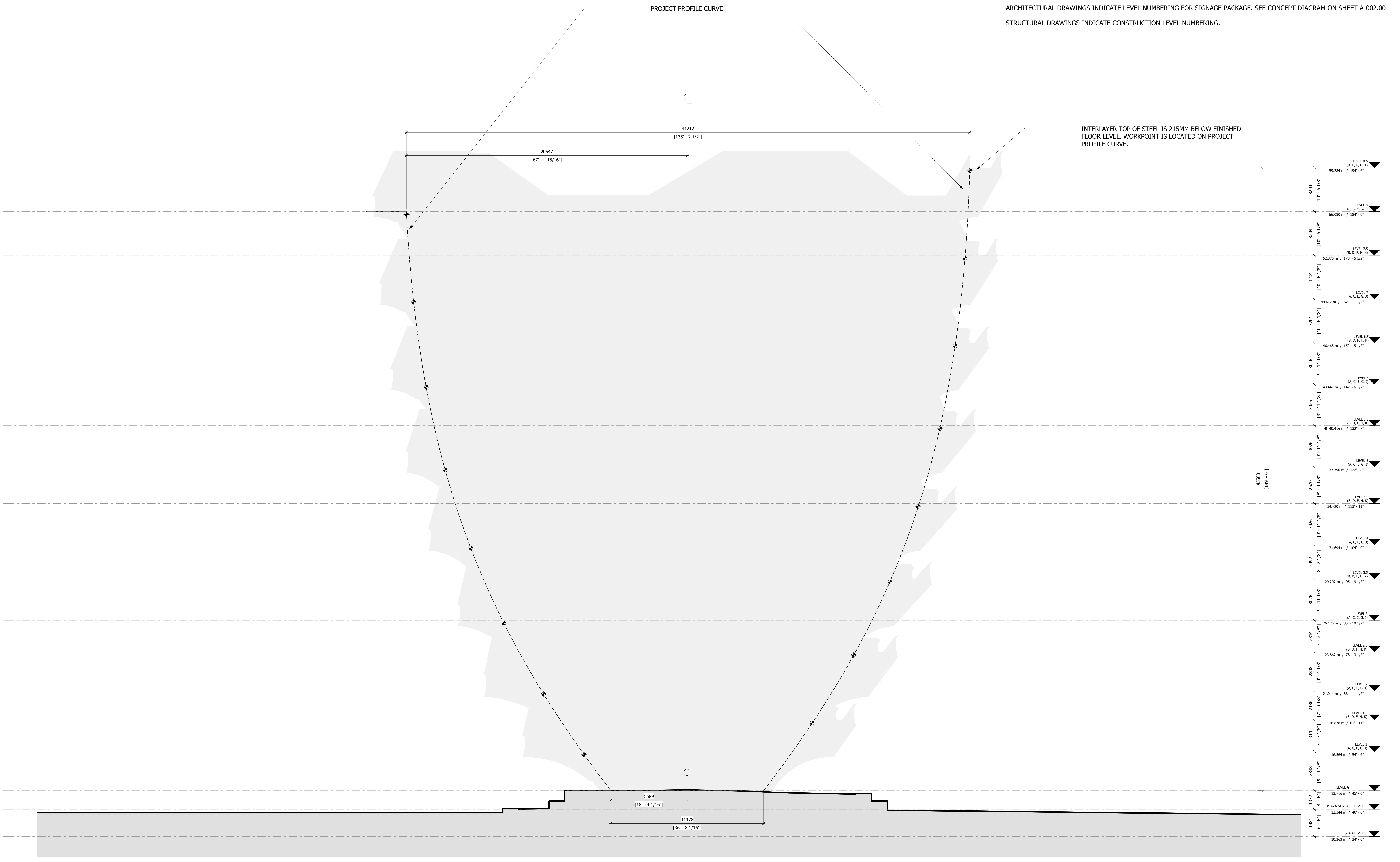
**PROJECT SETTING OUT
PLAN**

Sheet Number
A-020.00





NOTES:
PROJECT HAS 85 LEVELS, EACH LEVEL GROWS IN CIRCUMFERENCE AS YOU ASCEND THE PROJECT.
WORKPOINTS SETOUT TO TOP OF STEEL WHICH IS 215MM BELOW FINISHED FLOOR LEVEL ON PLATFORMS.
ARCHITECTURAL DRAWINGS INDICATE LEVEL NUMBERING FOR SIGNAGE PACKAGE. SEE CONCEPT DIAGRAM ON SHEET A-002.00
STRUCTURAL DRAWINGS INDICATE CONSTRUCTION LEVEL NUMBERING.



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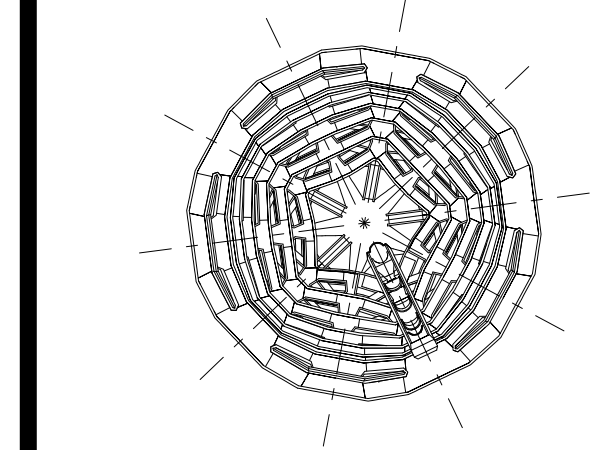
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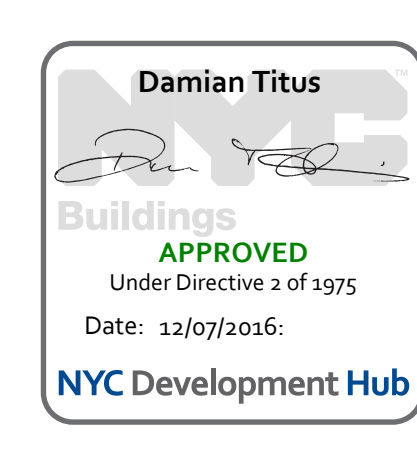
2 Work Points Setting Out Section C-H
1 : 100

Date: 08/29/14
Project No: 2298002
Drawn By: [Signature]
Sheet Number

HYE-VS-A-021

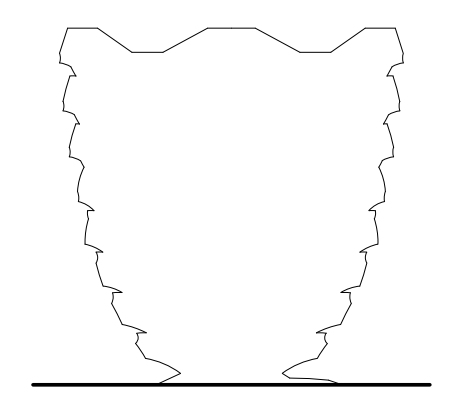
**PROJECT SETTING OUT
SECTION**

Sheet Number
A-021.00



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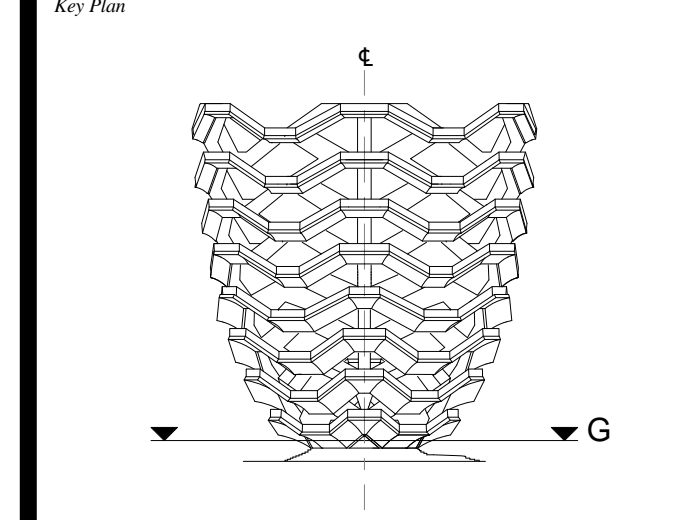
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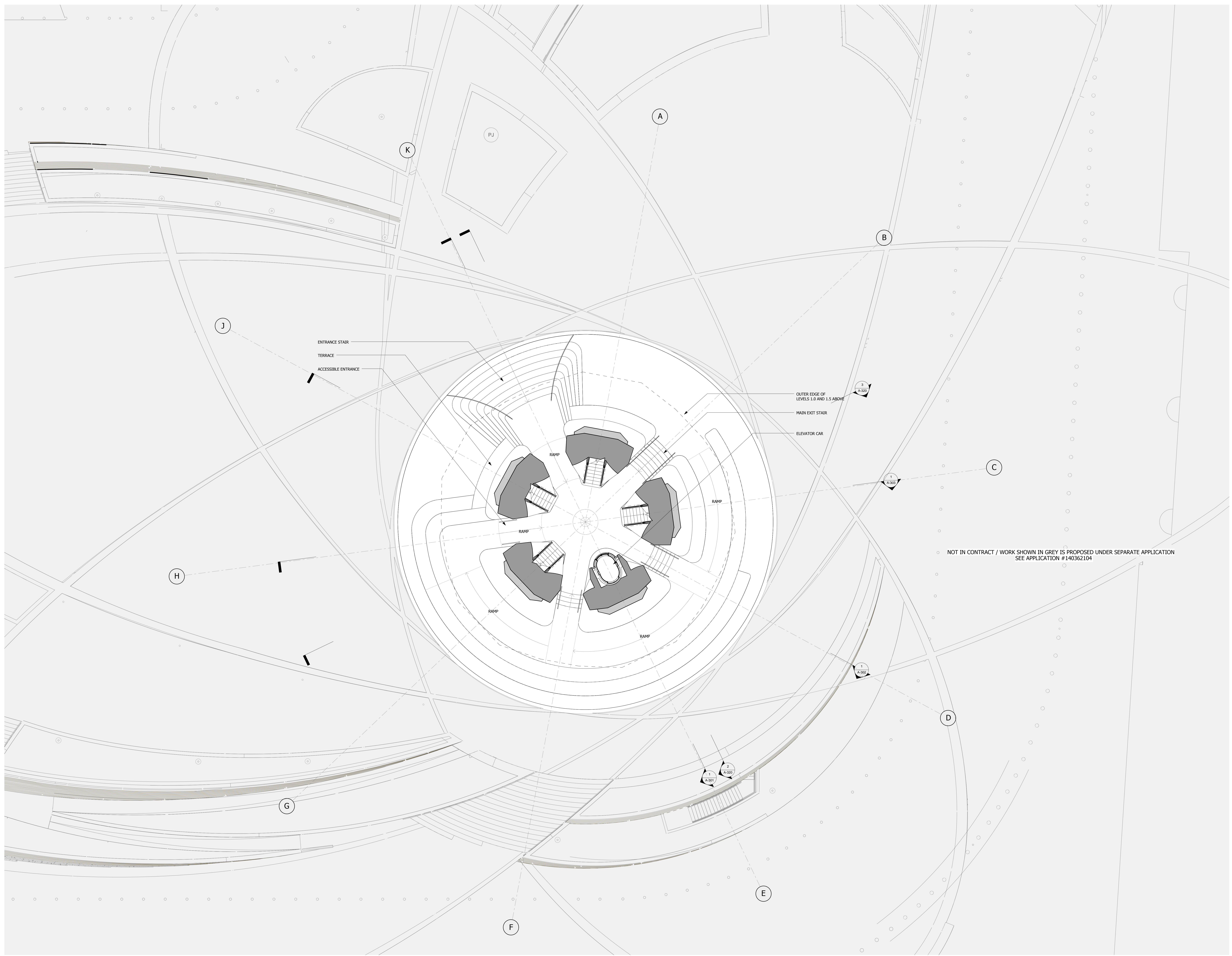


Date: 05/15/14
Project No: 2208002
Drawn By: *[Signature]*
Sheet Number: _____

HYE-VS-A-100

LEVEL G PLAN

Sheet Number
A-100.00



NOT IN CONTRACT / WORK SHOWN IN GREY IS PROPOSED UNDER SEPARATE APPLICATION
SEE APPLICATION #140362104

1 LEVEL G 1 : 100

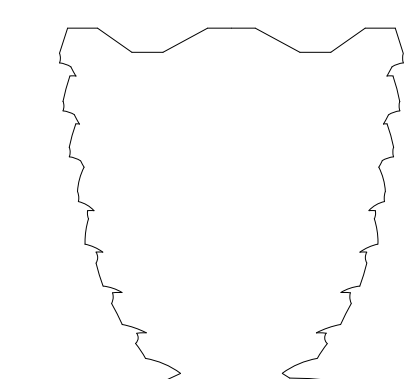
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING PROVIDED Under Directive 2 of 1975 Date: 12/02/2016

Damian Titus
NYC Development Hub

**HUDSON YARDS
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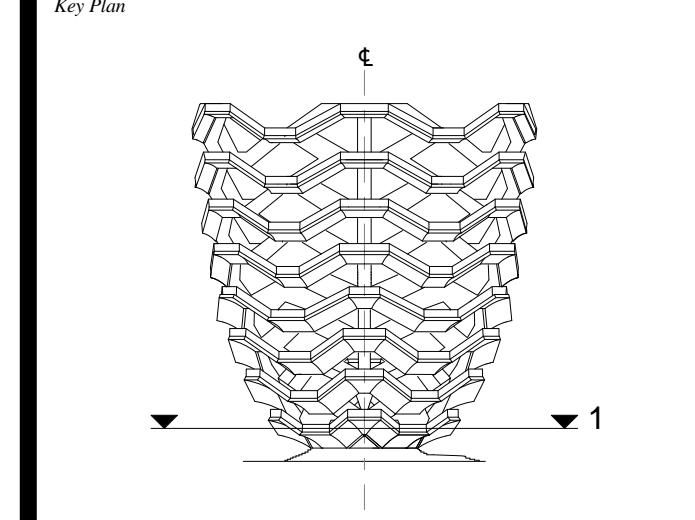
1 LEVEL 1 (DISPLAY 1)
16.564m / 54'-4 1/4"
1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT

Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
Date: 12/02/2016
NYC Development Hub

D.O.B. BUILDING PERMIT FILING 05/20/2016
No. Inset Date



Date: 05/15/14
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Sheet Number

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STATE OF NEW YORK

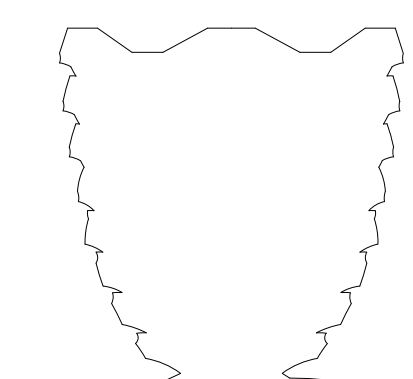
HYE-VS-A-101

**LEVEL 1 PLAN
(DISPLAY 1)**

Sheet Number
A-101.00

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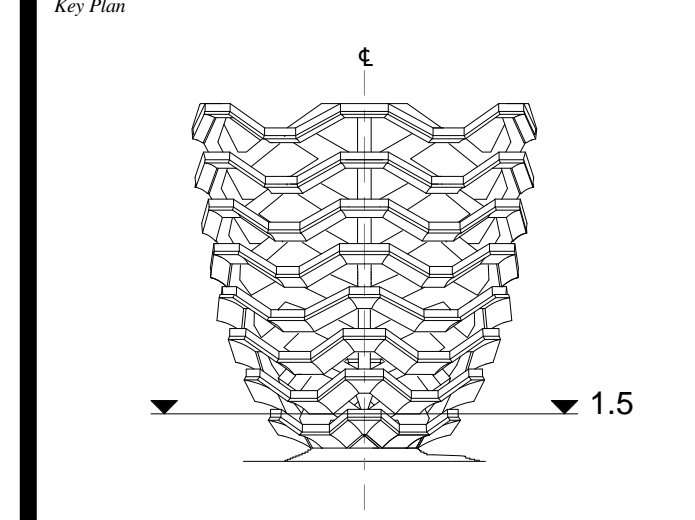
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1 LEVEL 1.5 (DISPLAY 1)
18.878m / 61'-11 1/4"
1 : 100

1 D.O.B. BUILDING PERMIT FILING 05/20/2016
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Project No: 2298402
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Sheet Number: [Signature]

REGISTERED ARCHITECT
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HYE-VS-A-102

**LEVEL 1.5 PLAN
(DISPLAY 1)**

Sheet Number
A-102.00

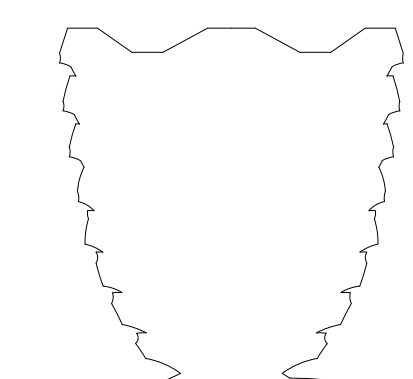
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT

Damian Titus
REGISTERED PROFESSIONAL ENGINEER
Under Directive 2 of 1975
Date: 12/02/2016
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Tel: 212.866.7514 Fax: 212.9863.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

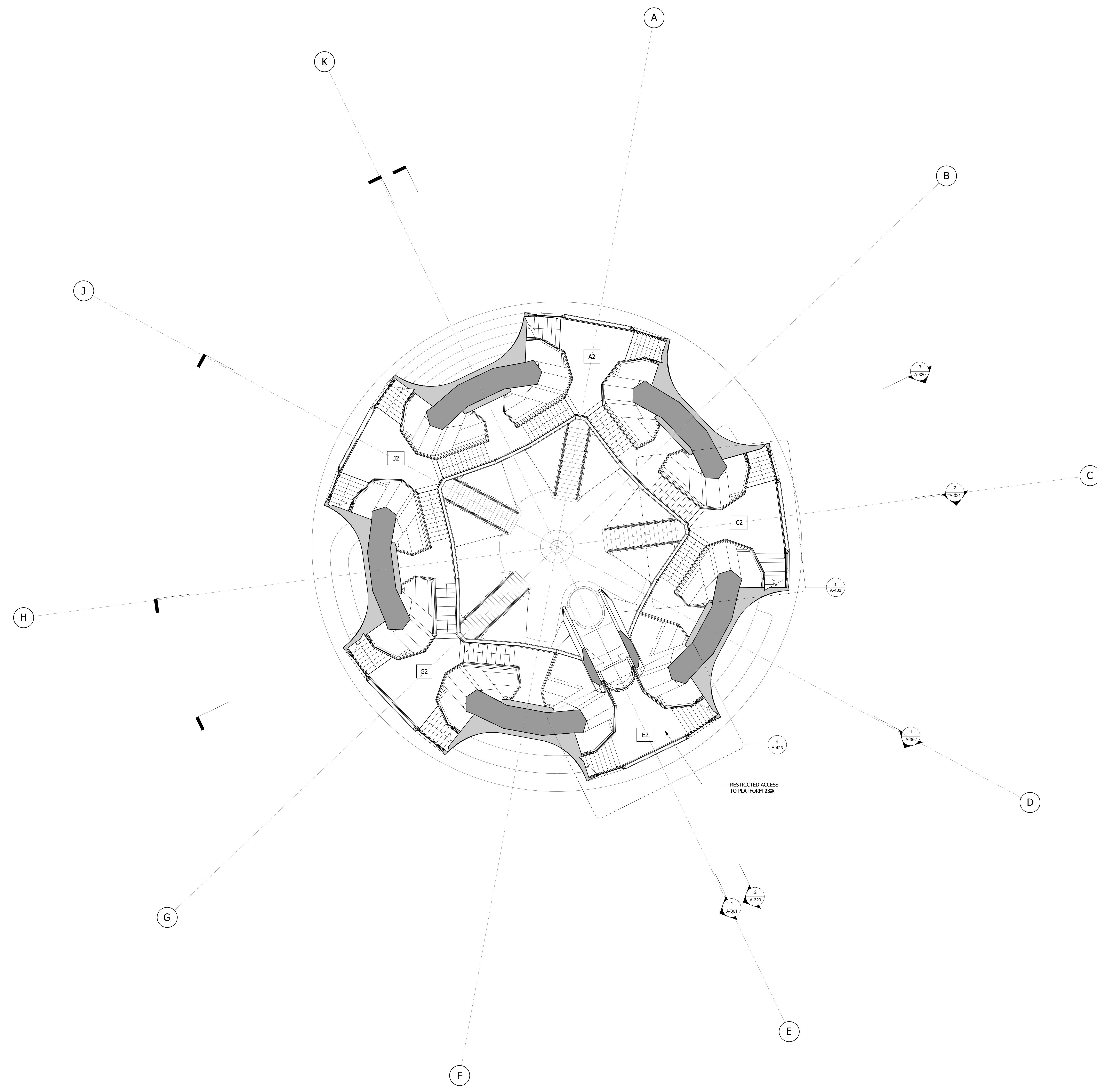
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
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Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

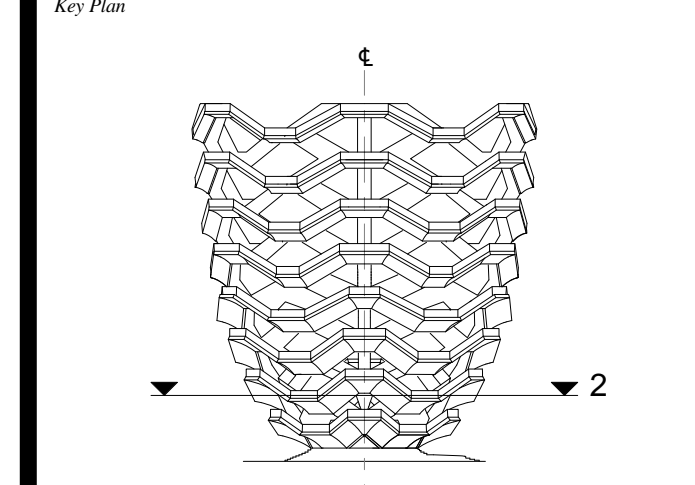
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1 LEVEL 2 (DISPLAY 2)
21.014m / 68'-11 1/4" 1 : 100

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No. Date



Date: 05/15/14
Project No: 2298002
Drawn By: [Signature]
Sheet Number: HYE-VS-A-103

HYE-VS-A-103

**LEVEL 2 PLAN
(DISPLAY 2)**

Sheet Number
A-103.00

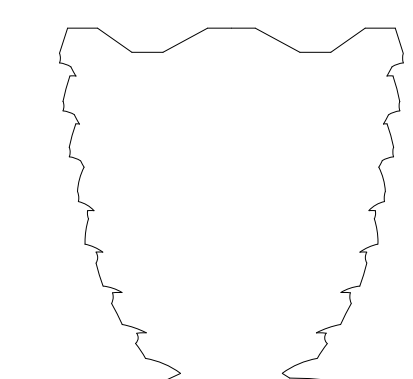
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT

Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
Date: 12/02/2016
NYC Development Hub

**HUDSON YARDS
 VESSEL**

530 WEST 33RD STREET
 NEW YORK, NY



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 60 Columbus Circle
 New York, NY 10023
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Oxford Properties Group
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 New York, NY 10022
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 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

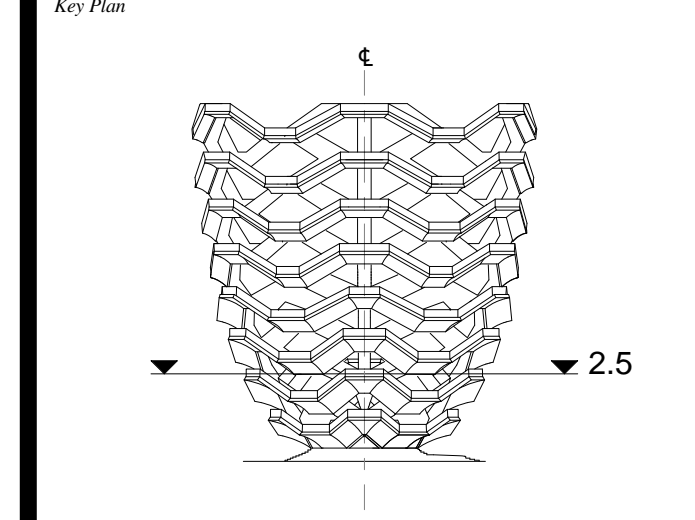
Structural Engineer
 Thornton Tomasetti, Inc.
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 New York, NY 10010
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HYE-VS-A-104
**LEVEL 2.5 PLAN
 (DISPLAY 2)**
 Drawing Title
 A-104.00
 SHEET 10 OF 86

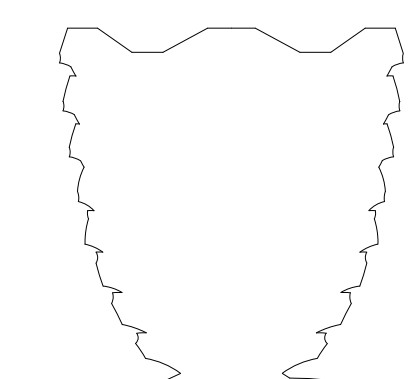
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT

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Architects & Planning Consultants
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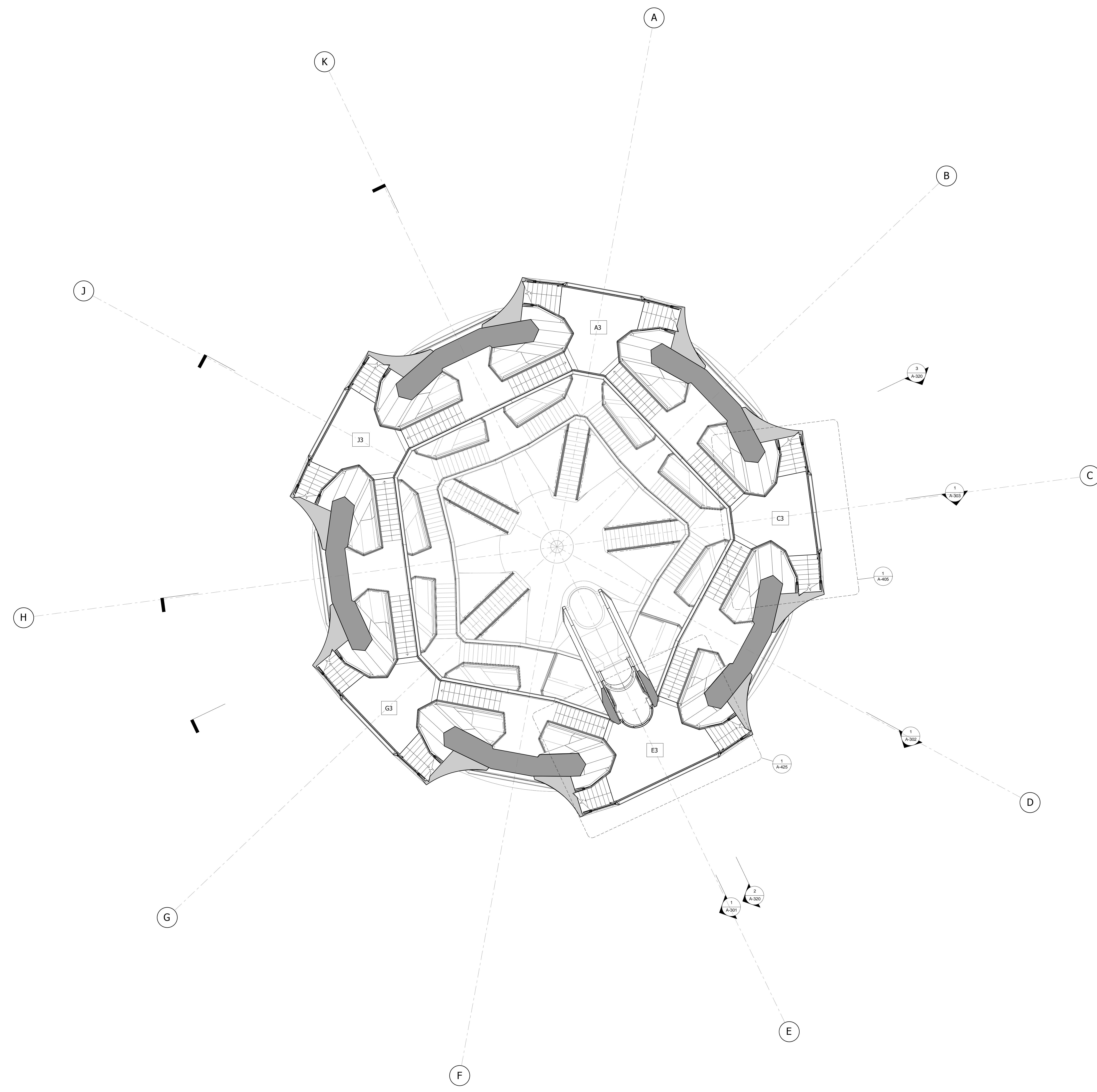
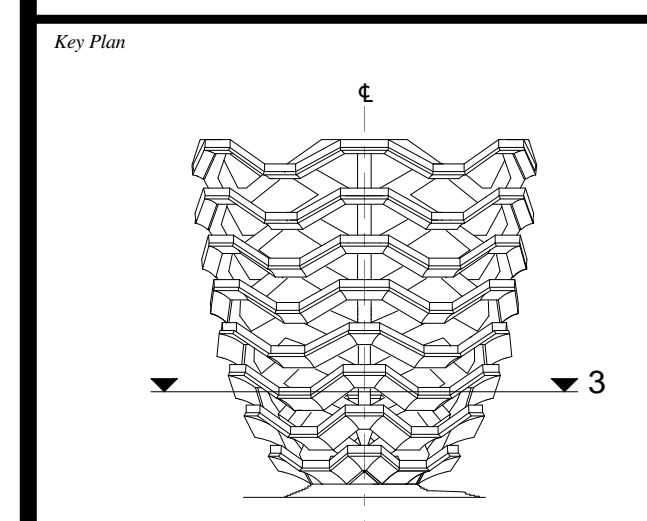
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1 LEVEL 3 (DISPLAY 3)
26.176m / 85'-10 1/2"
1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM TOP

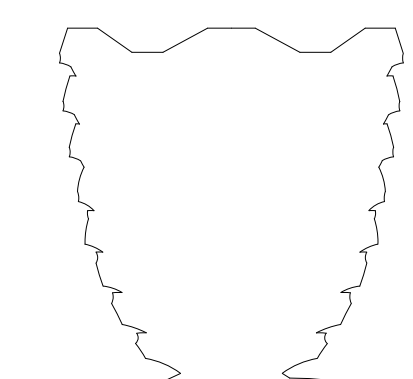
Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
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Date: 05/15/14
Project No: 2298407
Drawn By: [Signature]
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HYE-VS-A-105
**LEVEL 3 PLAN
(DISPLAY 3)**
Sheet Number:
A-105.00

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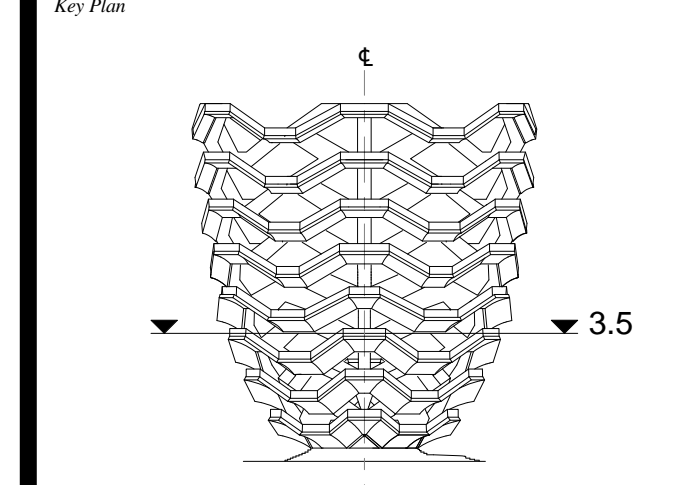
Structural Engineer
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1 LEVEL 3.5 (DISPLAY 3)
29.202m / 95'-9 3/4"
1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM [Symbol]

Under Directive 2 of 1975
Date: 12/02/2016
NYC Development Hub

Date: 05/15/14
Project No: 2298002
Drawn By: [Signature]
Sheet Number: [Signature]

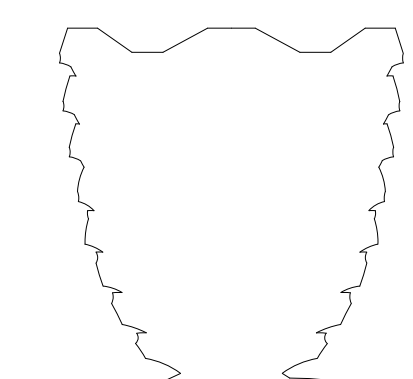
HYE-VS-A-106

**LEVEL 3.5 PLAN
(DISPLAY 3)**

Sheet Number
A-106.00

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New York, NY 10022
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Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

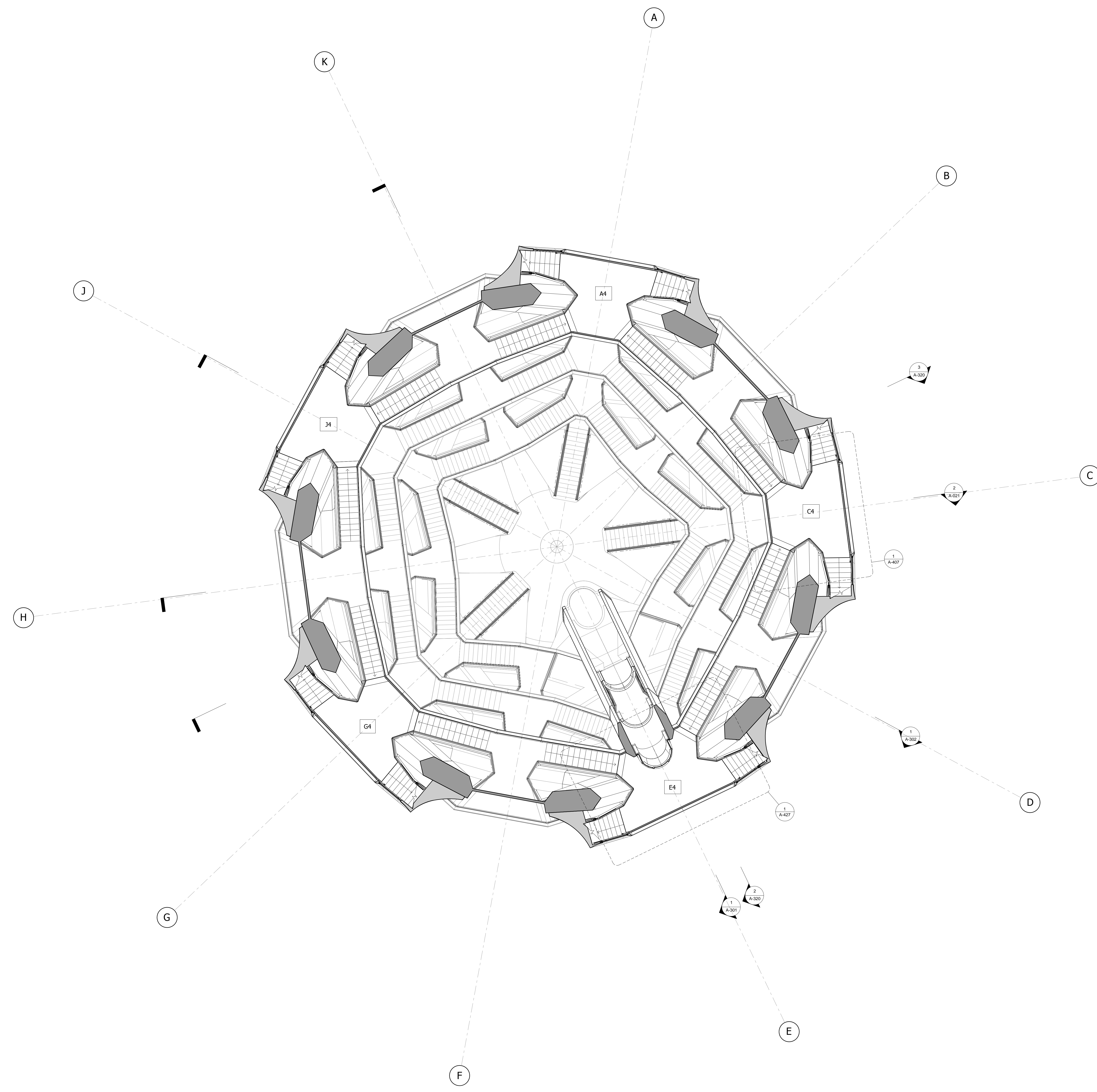
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Design Architect
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United Kingdom
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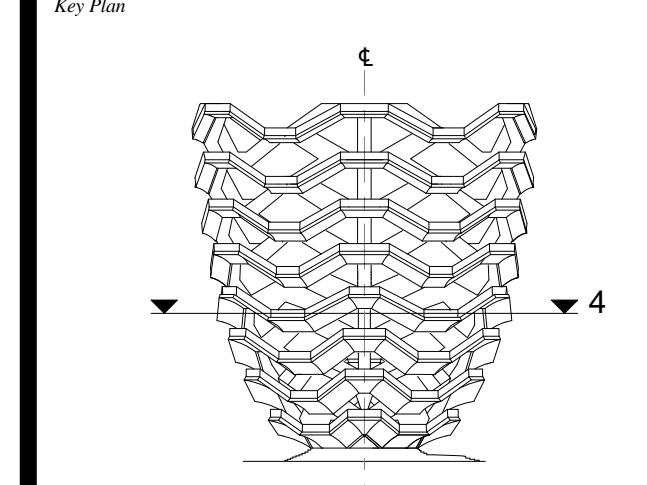
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1 LEVEL 4 (DISPLAY 4)
31.694m / 103'-11 3/4" 1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM [Symbol]

Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
Date: 12/02/2016
NYC Development Hub

Date: 05/15/14
Project No: 2298007
Drawn By: [Signature]
Sheet Number: [Signature]

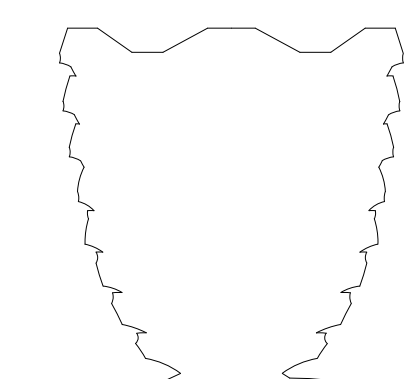
HYE-VS-A-107

**LEVEL 4 PLAN
(DISPLAY 4)**

Sheet Number
A-107.00

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VESSEL

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Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

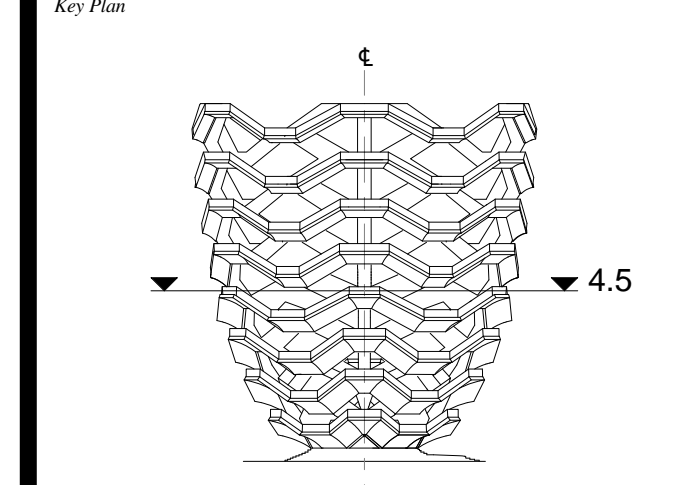
Design Architect
Heatherwick Studio
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Structural Engineer
Thornton Tomasetti, Inc.
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Date: 05/15/14
Project No: 2298002
Drawn By: *[Signature]*
Sheet Number: _____

HYE-VS-A-108

**LEVEL 4.5 PLAN
(DISPLAY 4)**

Sheet Number
A-108.00



1 LEVEL 4.5 (DISPLAY 4)
34.720m / 113'-11"
1 : 100

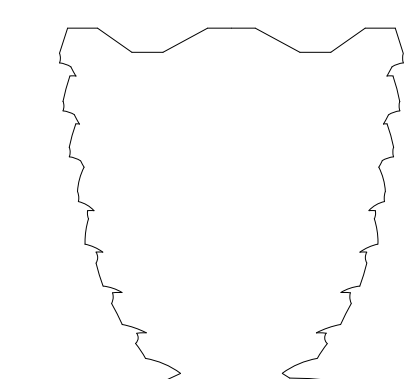
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM [Symbol]

Under Directive 3 of 1975
Date: 12/02/2016
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Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.866.7514 Fax: 212.9863.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

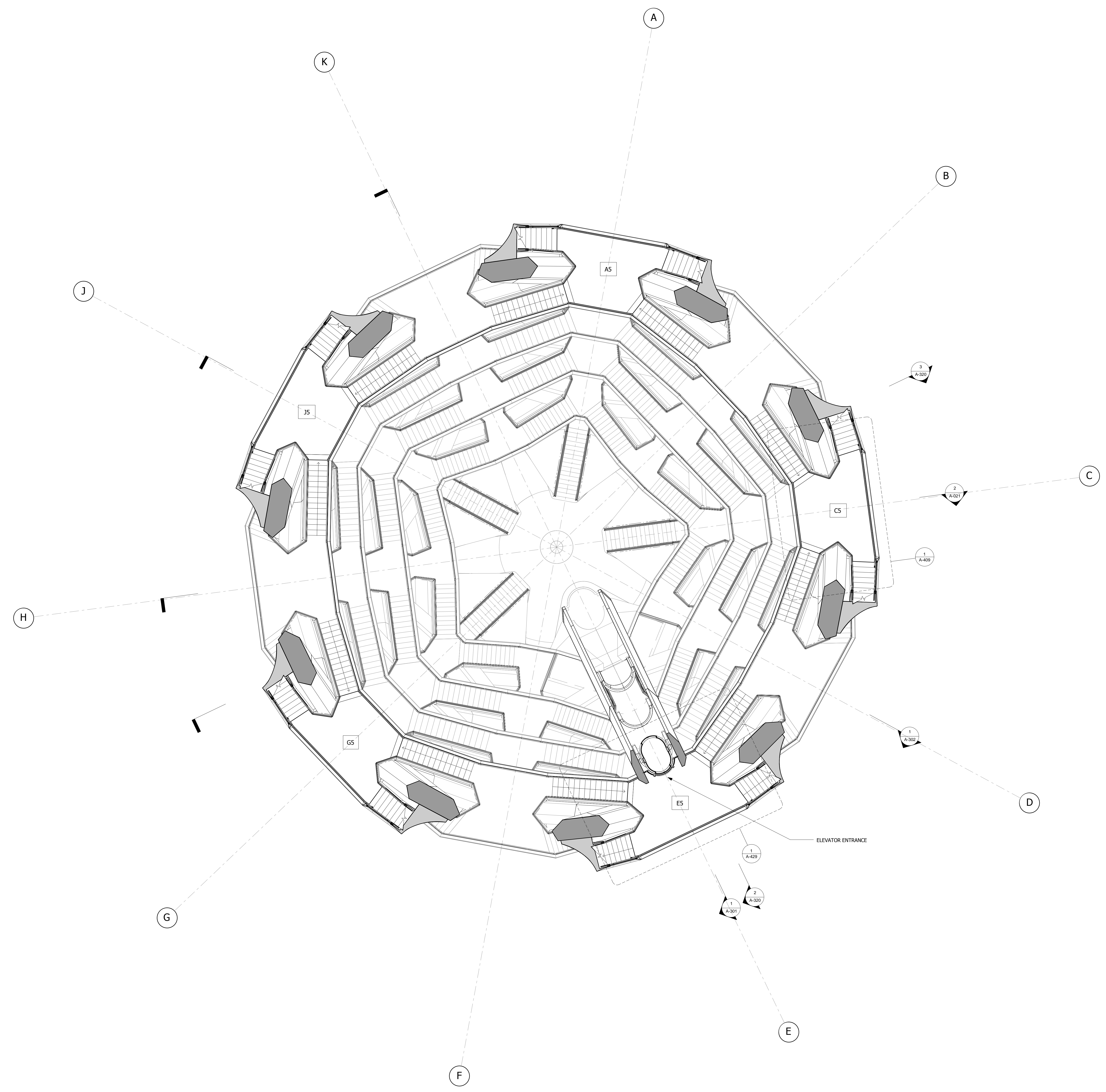
Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

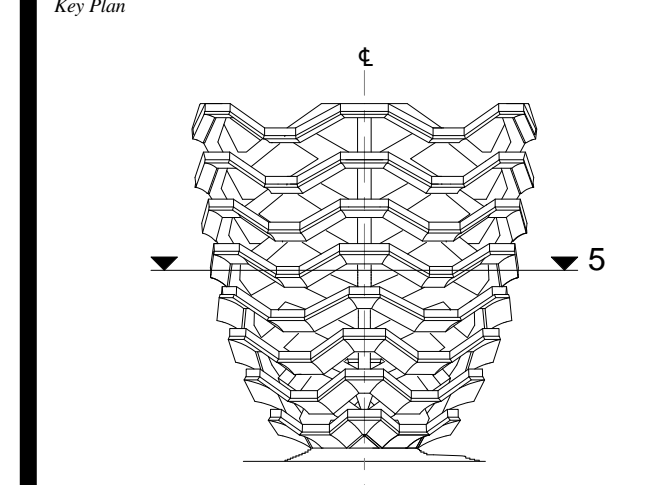
Structural Engineer
Thornton Tomasetti, Inc.
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New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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HYE-VS-A-109

**LEVEL 5 PLAN
(DISPLAY 5)**

Sheet Number
A-109.00

1 LEVEL 5 (DISPLAY 5)
37.390m / 122'-8" 1 : 100

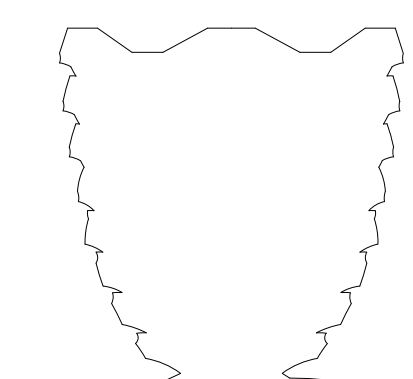
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM [Image]

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New York, NY 10022
Tel: 212.866.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

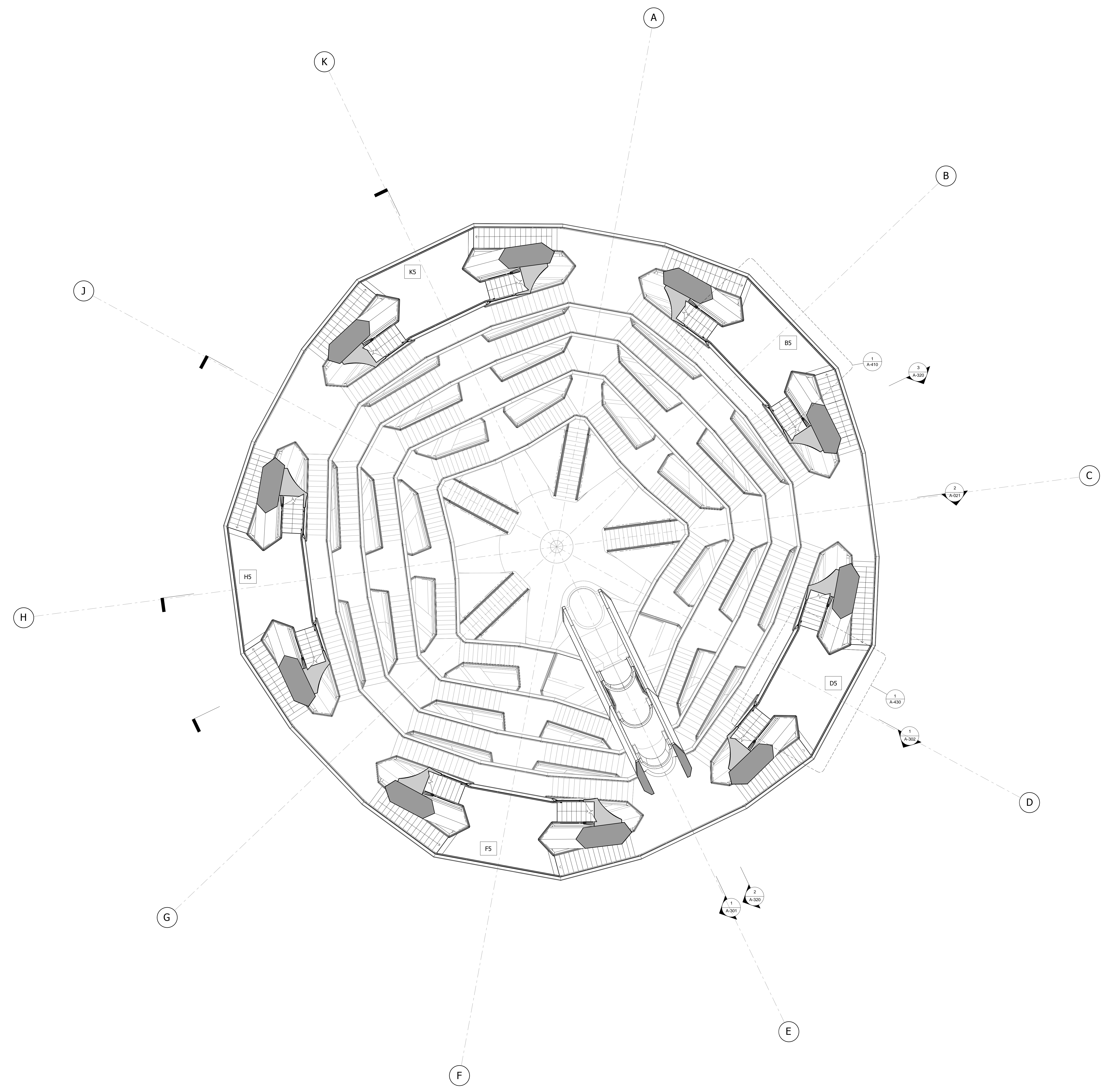
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
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Design Architect
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United Kingdom
Tel: 44(0)20 7833 8800

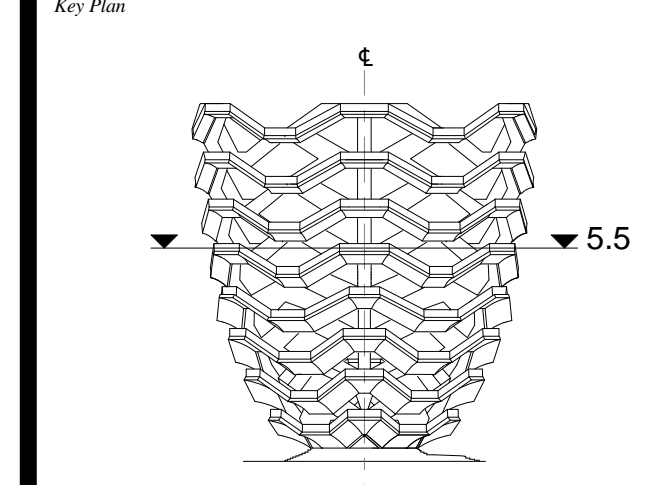
Structural Engineer
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1 LEVEL 5.5 (DISPLAY 5)
40.416m / 132'-7 1/4"
1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING PANEL

Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
Date: 12/02/2016
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Date: 05/15/14
Project No: 2298002
Drawn By: [Signature]
Sheet Number: [Signature]

REGISTERED ARCHITECT
DAMIAN TITUS
STATE OF NEW YORK

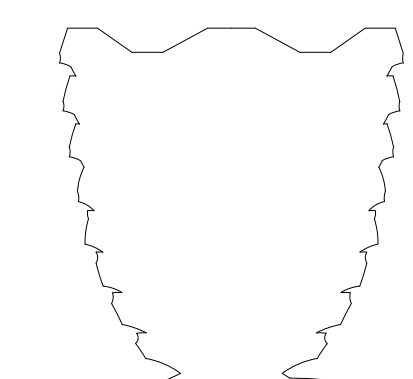
HYE-VS-A-110

**LEVEL 5.5 PLAN
(DISPLAY 5)**

Sheet Number
A-110.00

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Architects & Planning Consultants
11 West 42nd Street
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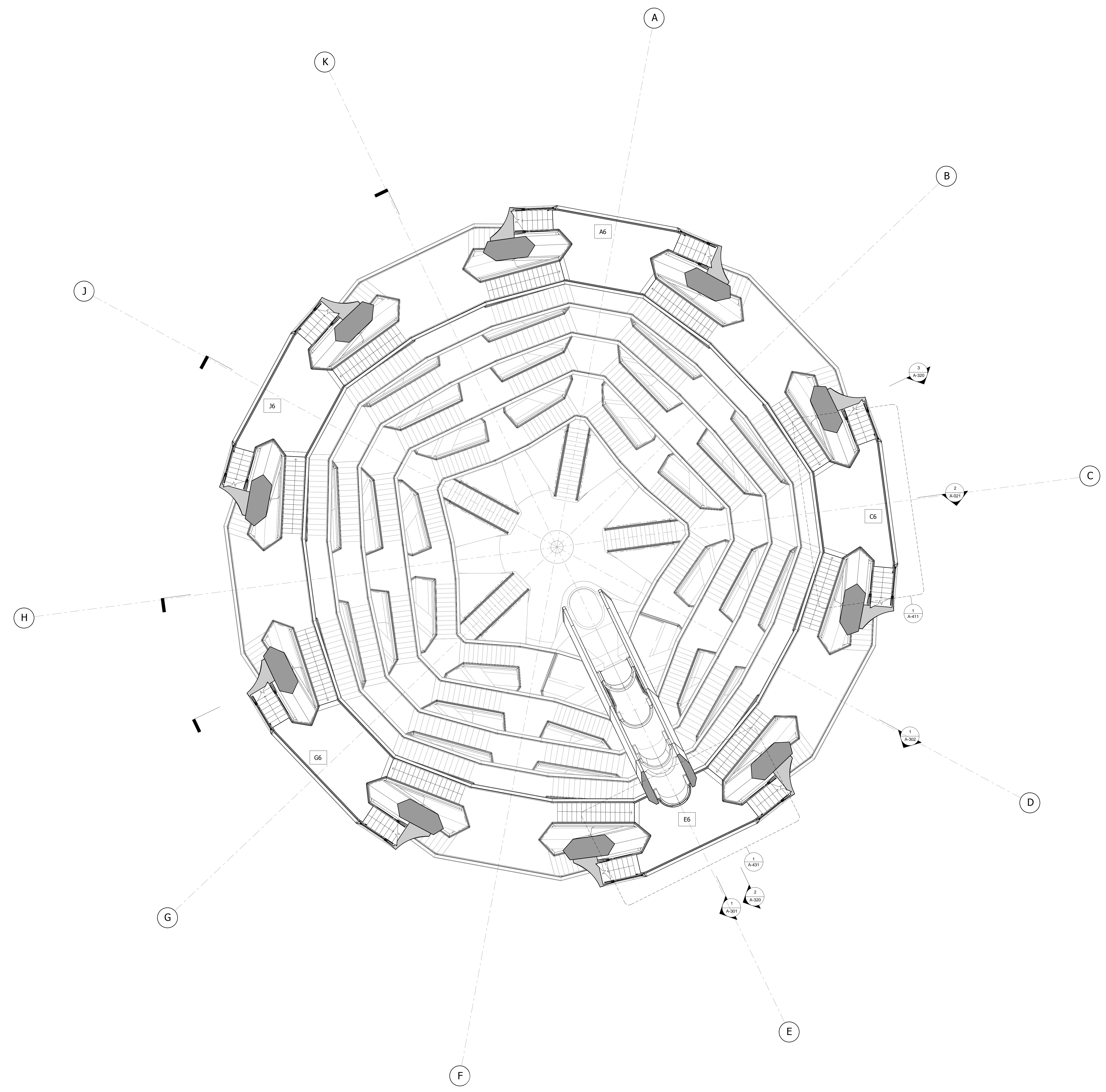
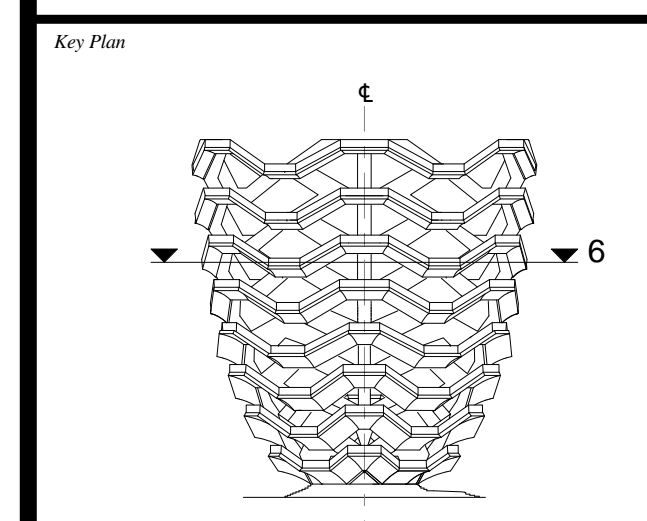
Design Architect
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United Kingdom
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1 LEVEL 6 (DISPLAY 6)
43.442m / 142'-6 1/4"
1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM EP

Under Directive 2 of 1975
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Date: 05/15/14
Project No: 2298402
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HYE-VS-A-111

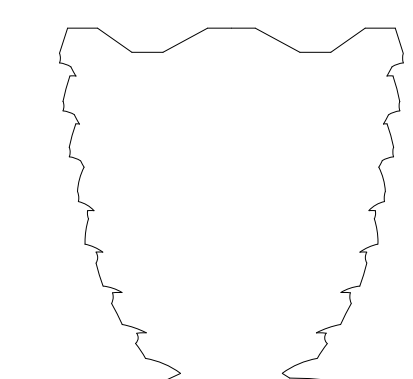
**LEVEL 6 PLAN
(DISPLAY 6)**

Sheet Number
A-111.00

SHEET 17 OF 86

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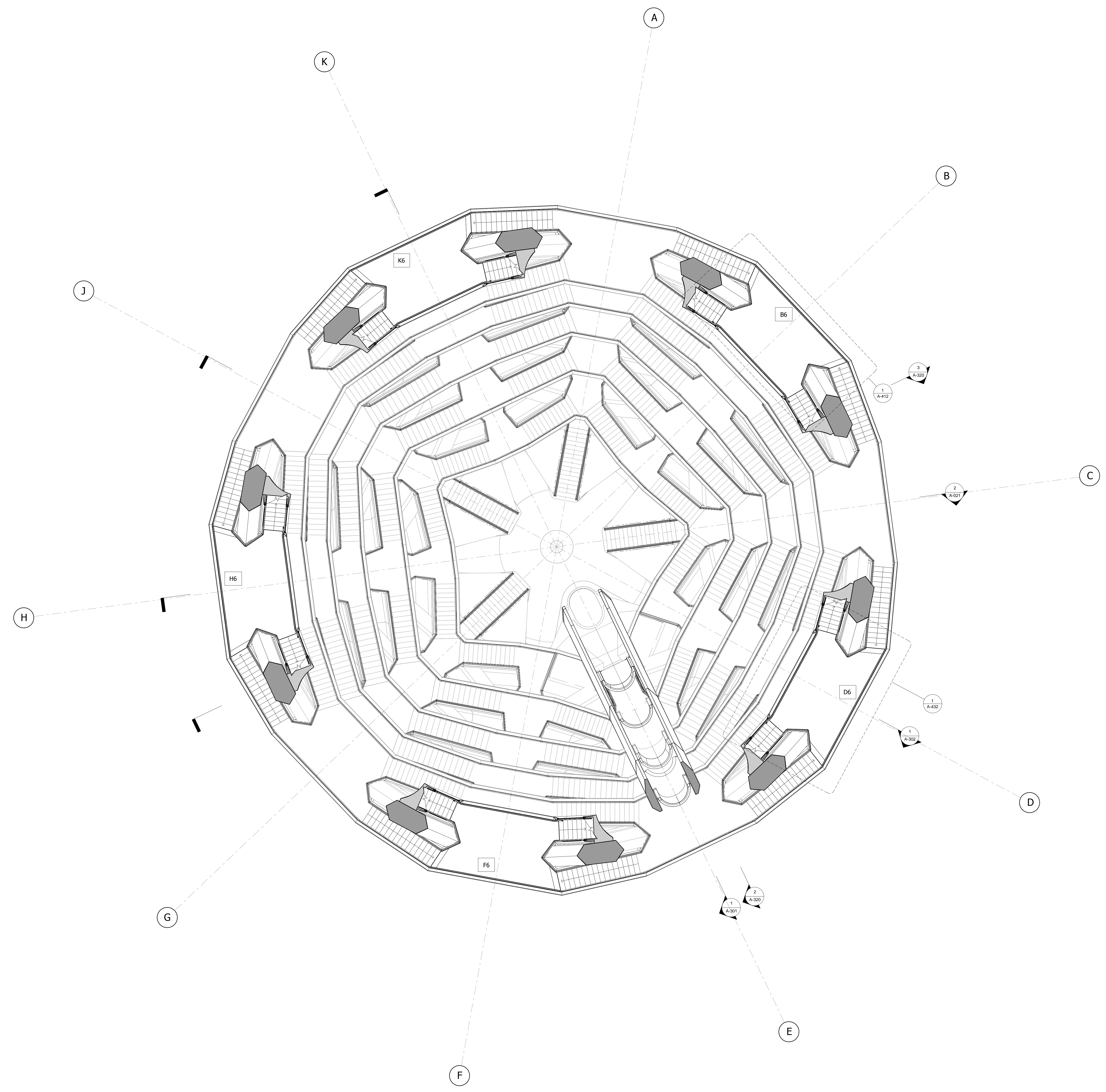
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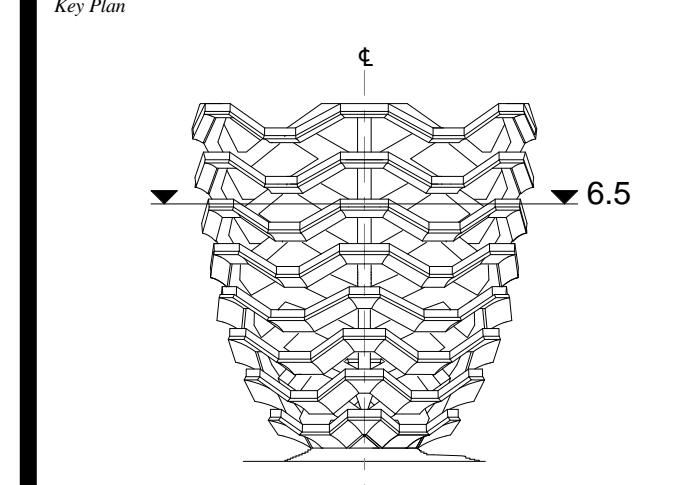
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1 LEVEL 6.5 (DISPLAY 6)
46.468m / 152'-5 1/2"
1 : 100

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HYE-VS-A-112

**LEVEL 6.5 PLAN
(DISPLAY 6)**

Sheet Number
A-112.00

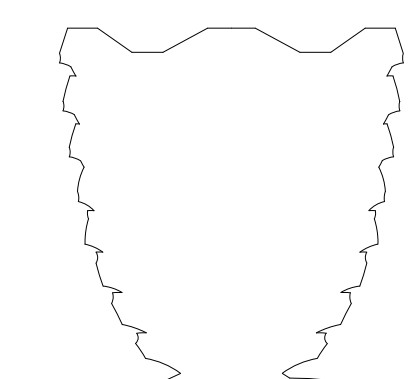
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING PROFILE

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Executive Architect
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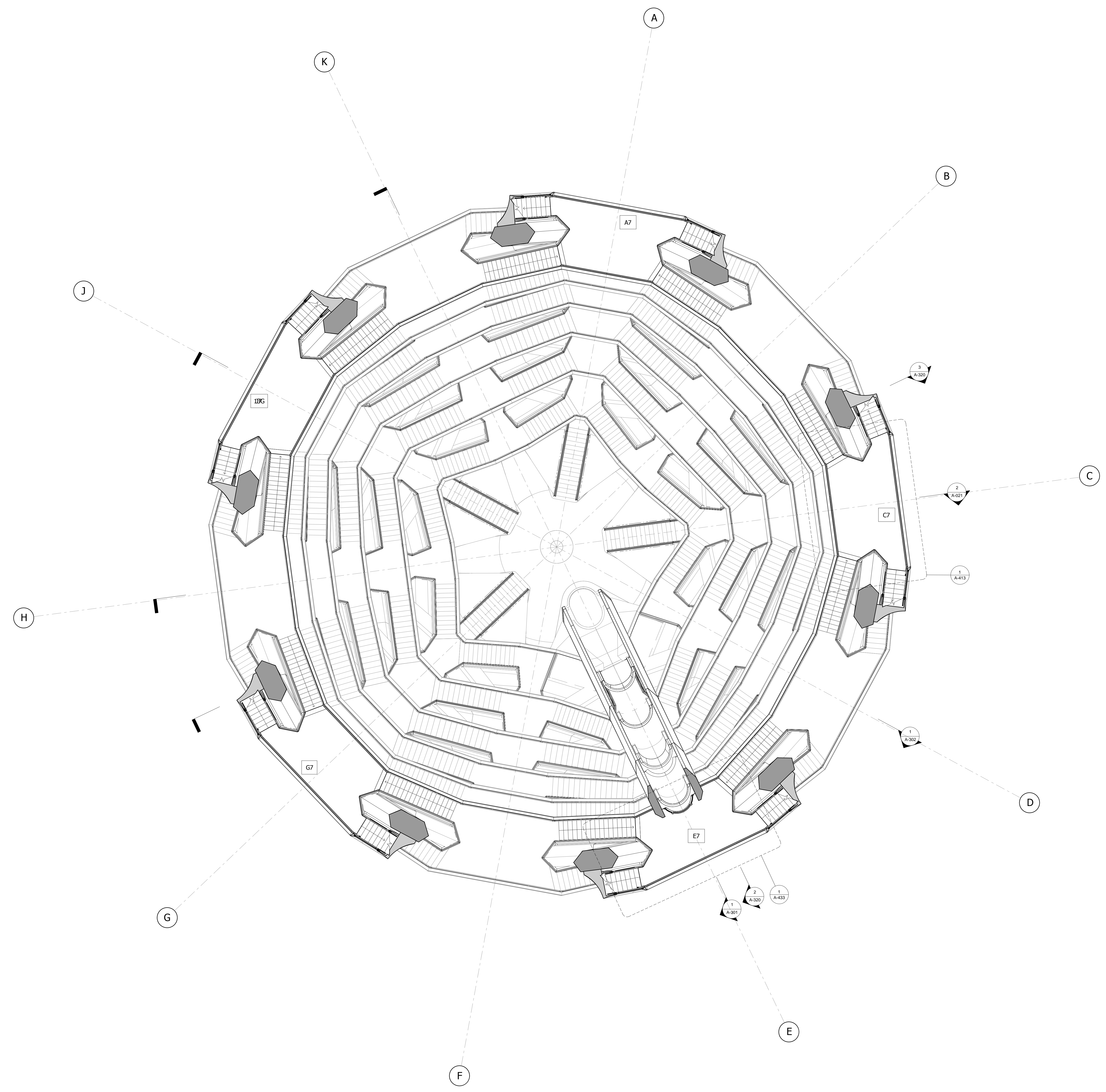
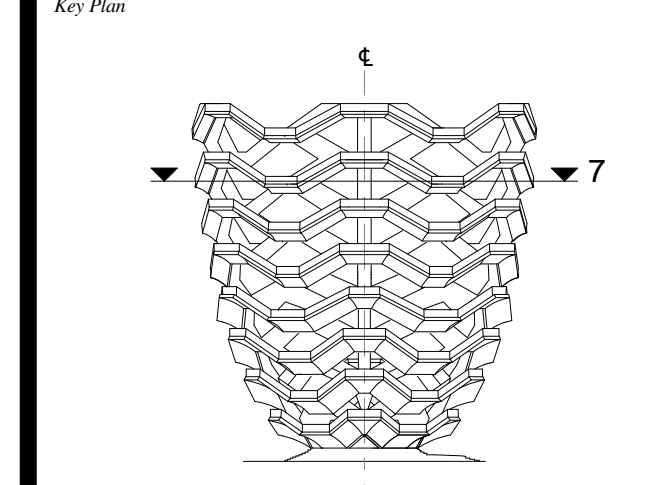
Design Architect
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1 LEVEL 7 (DISPLAY 7)
49.672m / 162'-11 1/2" 1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING PANEL

Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
Date: 12/02/2016
NYC Development Hub

Date: 05/15/14
Project No: 2298002
Drawn By: *[Signature]*
Sheet Number: _____

HYE-VS-A-113

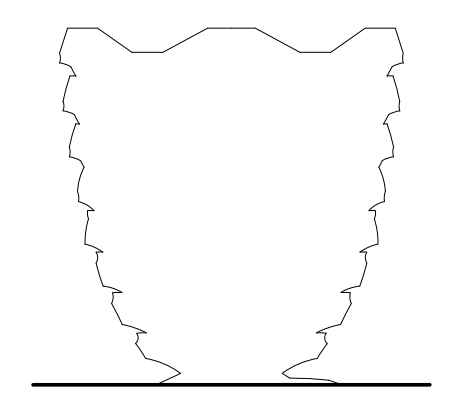
**LEVEL 7 PLAN
(DISPLAY 7)**

Sheet Number
A-113.00

SHEET 19 OF 86

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.866.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

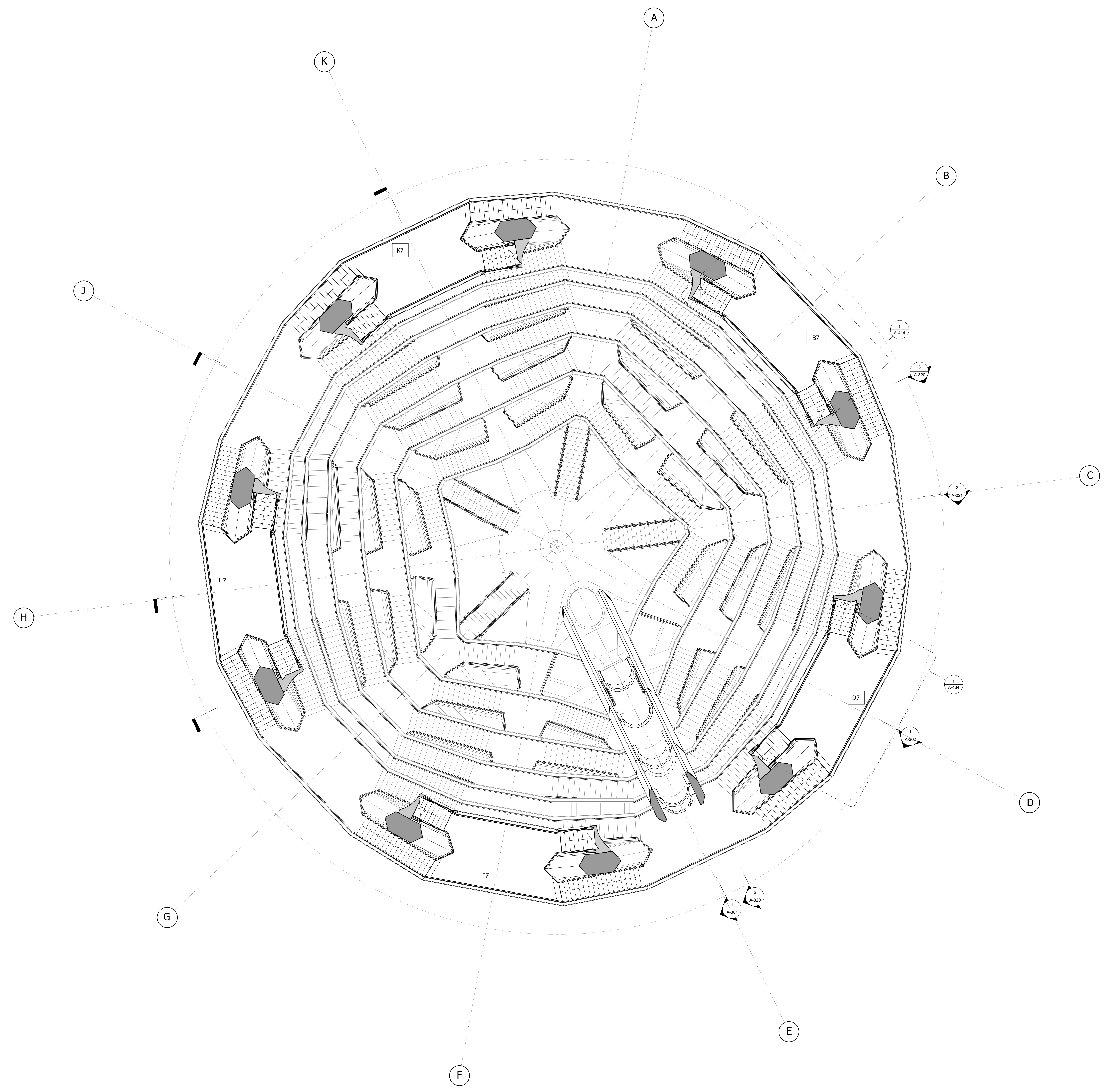
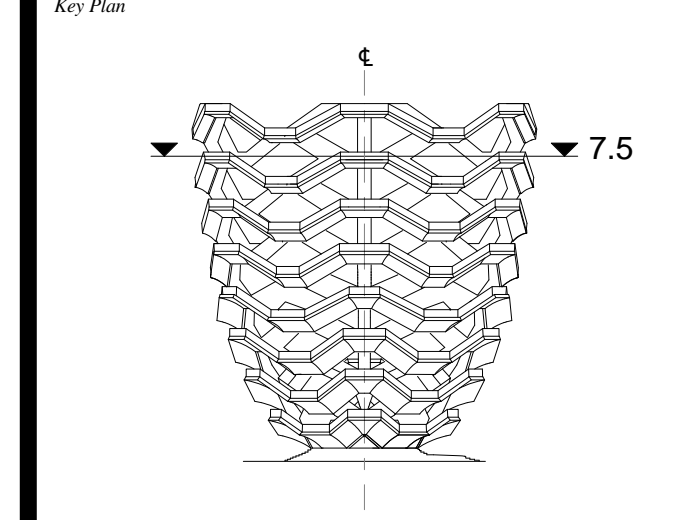
Design Architect
 Heatherwick Studio
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 London WC1X 8BH
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 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
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1 LEVEL 7.5 (DISPLAY 7)
 52.876m / 173'-5 3/4"
 1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING PANEL

Damian Titus
 REGISTERED ARCHITECT
 Under Directive 2 of 1975
 Date: 12/02/2016
 NYC Development Hub

Date: 05/15/14
 Project No: 2298007
 Drawn By: *[Signature]*
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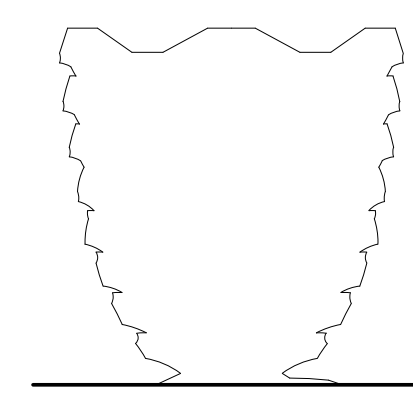
HYE-VS-A-114

**LEVEL 7.5 PLAN
(DISPLAY 7)**

Sheet Number
A-114.00

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Tishman Construction Corporation
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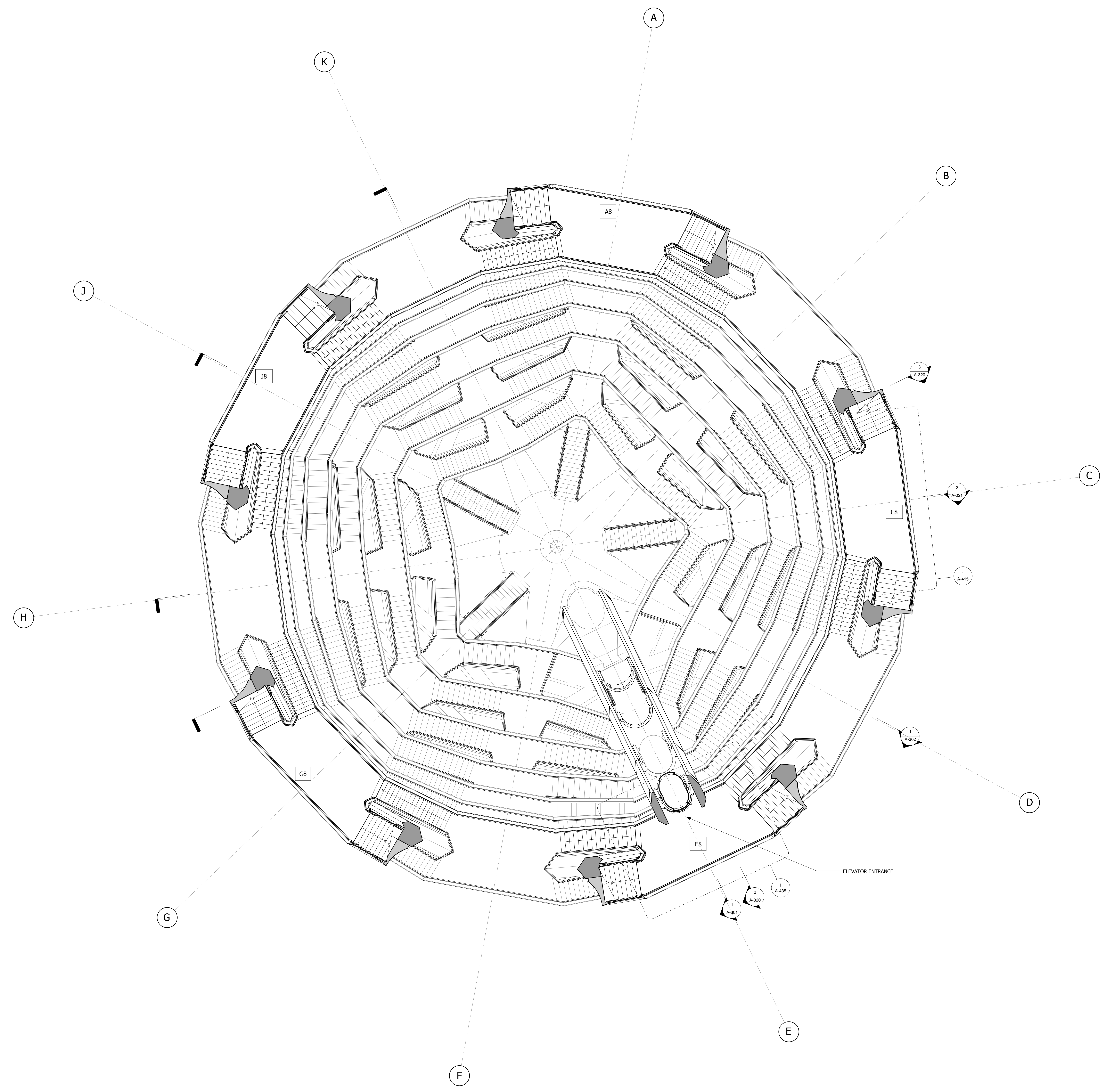
Executive Architect
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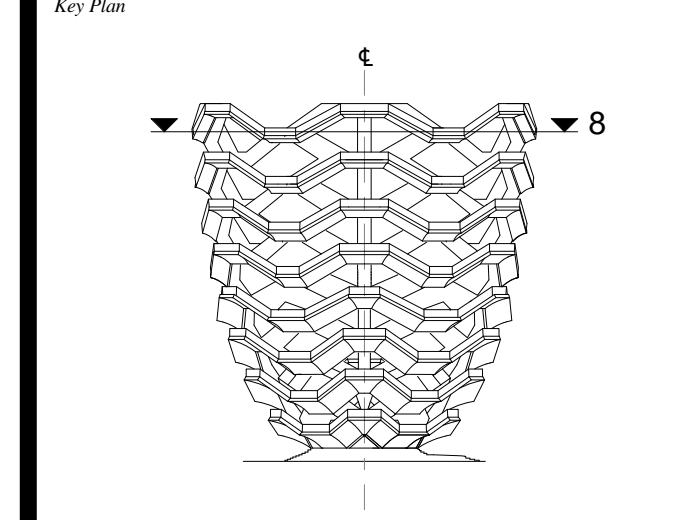
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1 LEVEL 8 (DISPLAY 8)
56.080m / 183'-11 3/4"
1 : 100

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Date: 05/15/14
Project No: 2298402
Drawn By: [Signature]
Sheet Number: HYE-VS-A-115

HYE-VS-A-115
**LEVEL 8 PLAN
(DISPLAY 8)**
Drawing Title
A-115.00
SHEET 21 OF 86

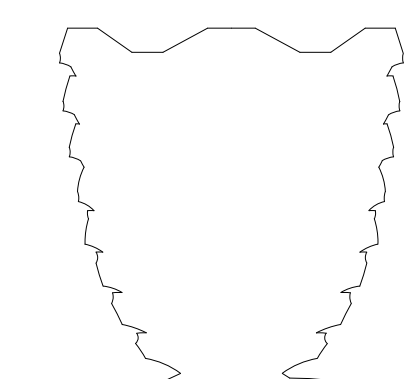
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT

Damian Titus
REGISTERED ARCHITECT
Under Directive 2 of 1975
Date: 12/02/2016
NYC Development Hub

HUDSON YARDS
VESSEL

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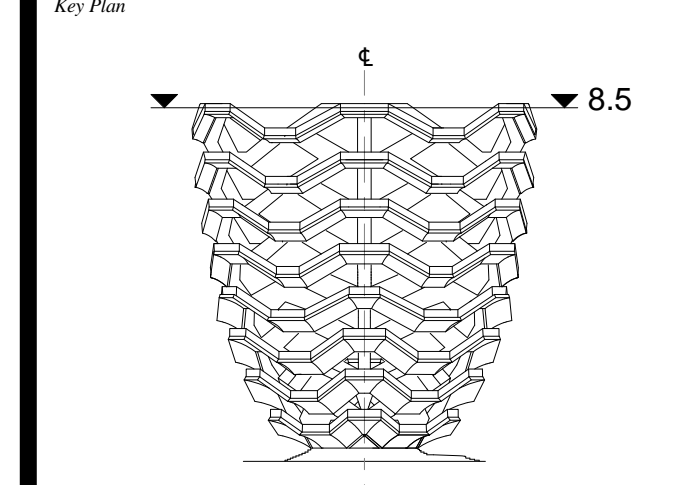
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1 LEVEL 8.5 (DISPLAY 8)
59.284m / 194'-6"
1 : 100

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Date: 05/15/14
Project No: 2298002
Drawn By: [Signature]
Sheet Number: [Signature]

HYE-VS-A-116

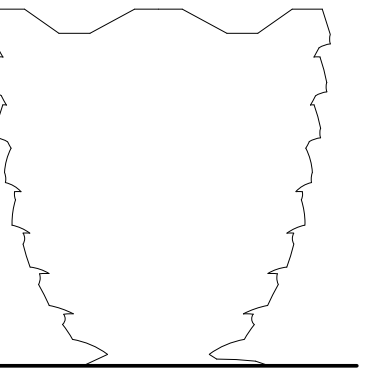
**LEVEL 8.5 PLAN
(DISPLAY 8)**

Sheet Number
A-116.00

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING FROM [Image]

Under Directive 2 of 1975
Date: 12/02/2016
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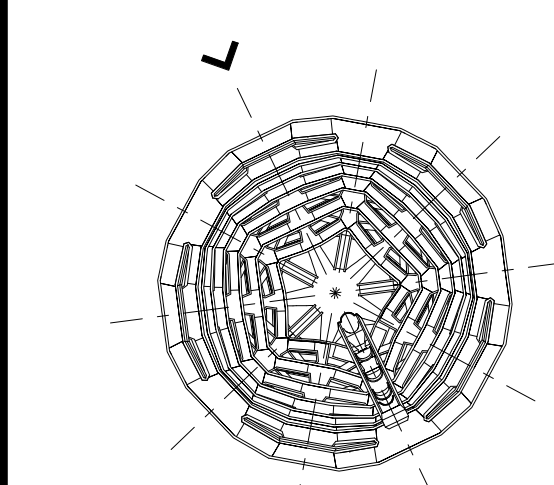
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Key Plan



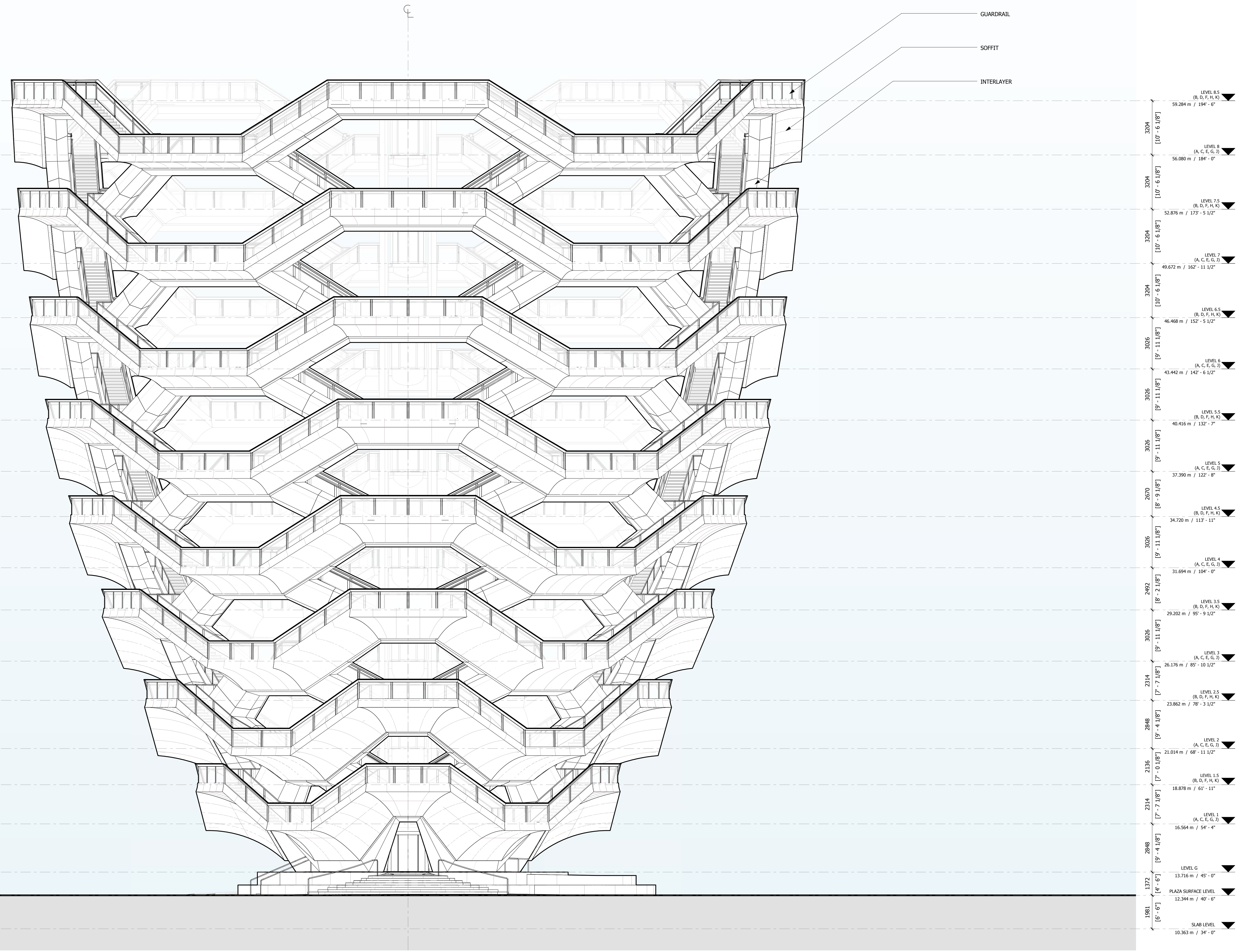
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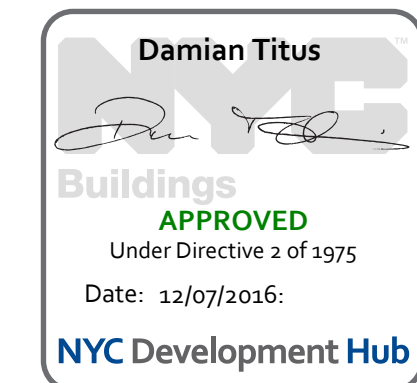
NORTH ELEVATION

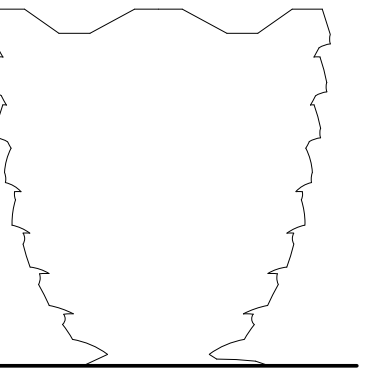
Sheet Number
A-201.00

SHEET 23 OF 86



1 NORTH ELEVATION 1 : 100





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Tel: 44(0)20 7833 8800

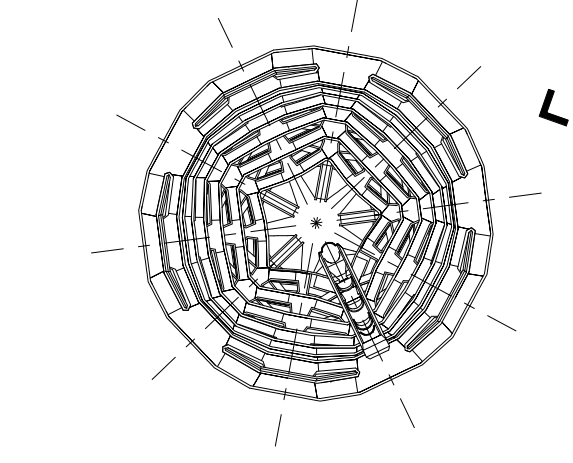
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Key Plan

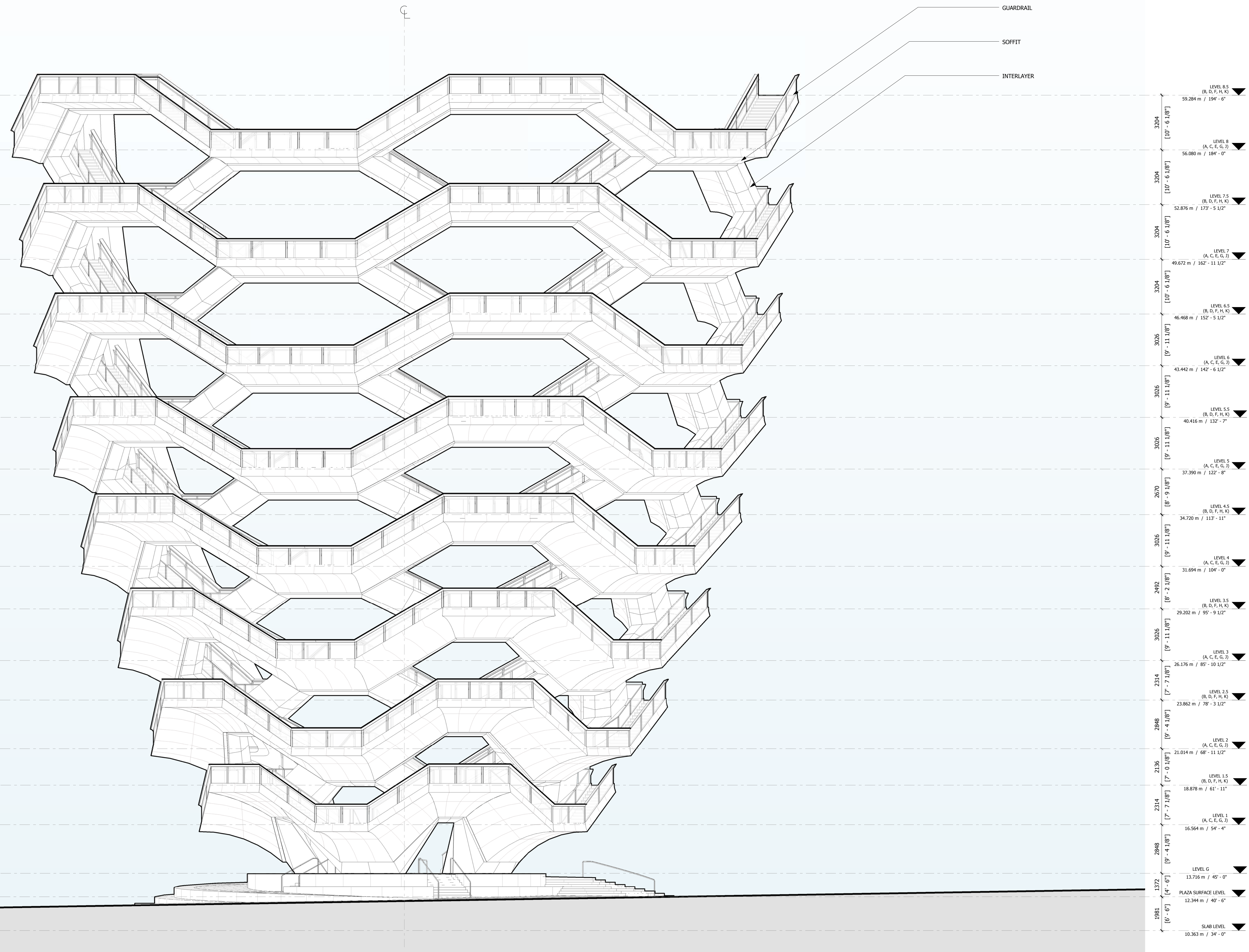


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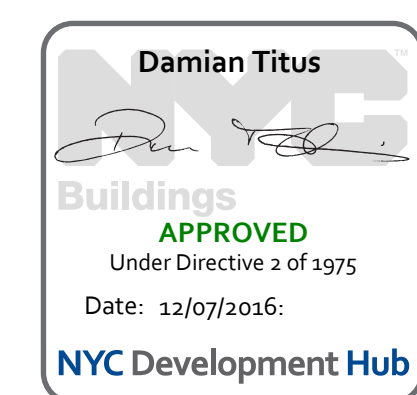
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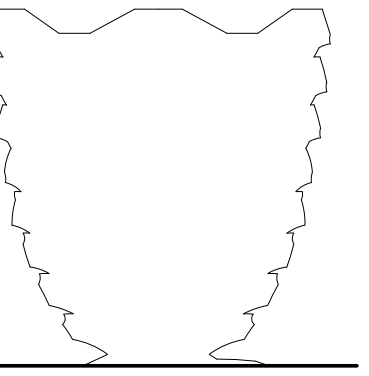
EAST ELEVATION

Sheet Number
A-202.00



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3004	LEVEL 8 (A, C, E, J)	55.800 m / 183'-0"
3004	LEVEL 7.5 (B, D, F, H, K)	52.876 m / 173'-5 1/2"
3004	LEVEL 7 (A, C, E, J)	49.672 m / 162'-11 1/2"
3004	LEVEL 6.5 (B, D, F, H, K)	46.468 m / 152'-9 1/2"
3006	LEVEL 6 (A, C, E, J)	43.442 m / 142'-6 1/2"
3006	LEVEL 5.5 (B, D, F, H, K)	40.416 m / 132'-7"
3006	LEVEL 5 (A, C, E, J)	37.390 m / 122'-0"
2609	LEVEL 4.5 (B, D, F, H, K)	34.320 m / 112'-11"
3006	LEVEL 4 (A, C, E, J)	31.694 m / 104'-0"
2402	LEVEL 3.5 (B, D, F, H, K)	28.902 m / 95'-9 1/2"
3006	LEVEL 3 (A, C, E, J)	26.176 m / 85'-10 1/2"
2214	LEVEL 2.5 (B, D, F, H, K)	23.862 m / 78'-3 1/2"
2888	LEVEL 2 (A, C, E, J)	21.044 m / 68'-11 1/2"
2136	LEVEL 1.5 (B, D, F, H, K)	18.878 m / 61'-11"
2314	LEVEL 1 (A, C, E, J)	16.564 m / 54'-4"
2848	LEVEL 0 (A, C, E, J)	13.756 m / 45'-0"
1372	PLAZA SURFACE (LEVEL)	12.344 m / 40'-5"
1981	SLAB LEVEL	10.363 m / 34'-0"





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100 Park Avenue
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Executive Architect
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Architects & Planning Consultants
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Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

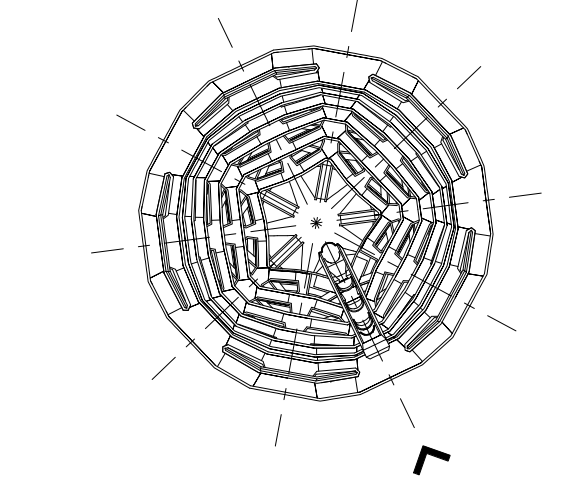
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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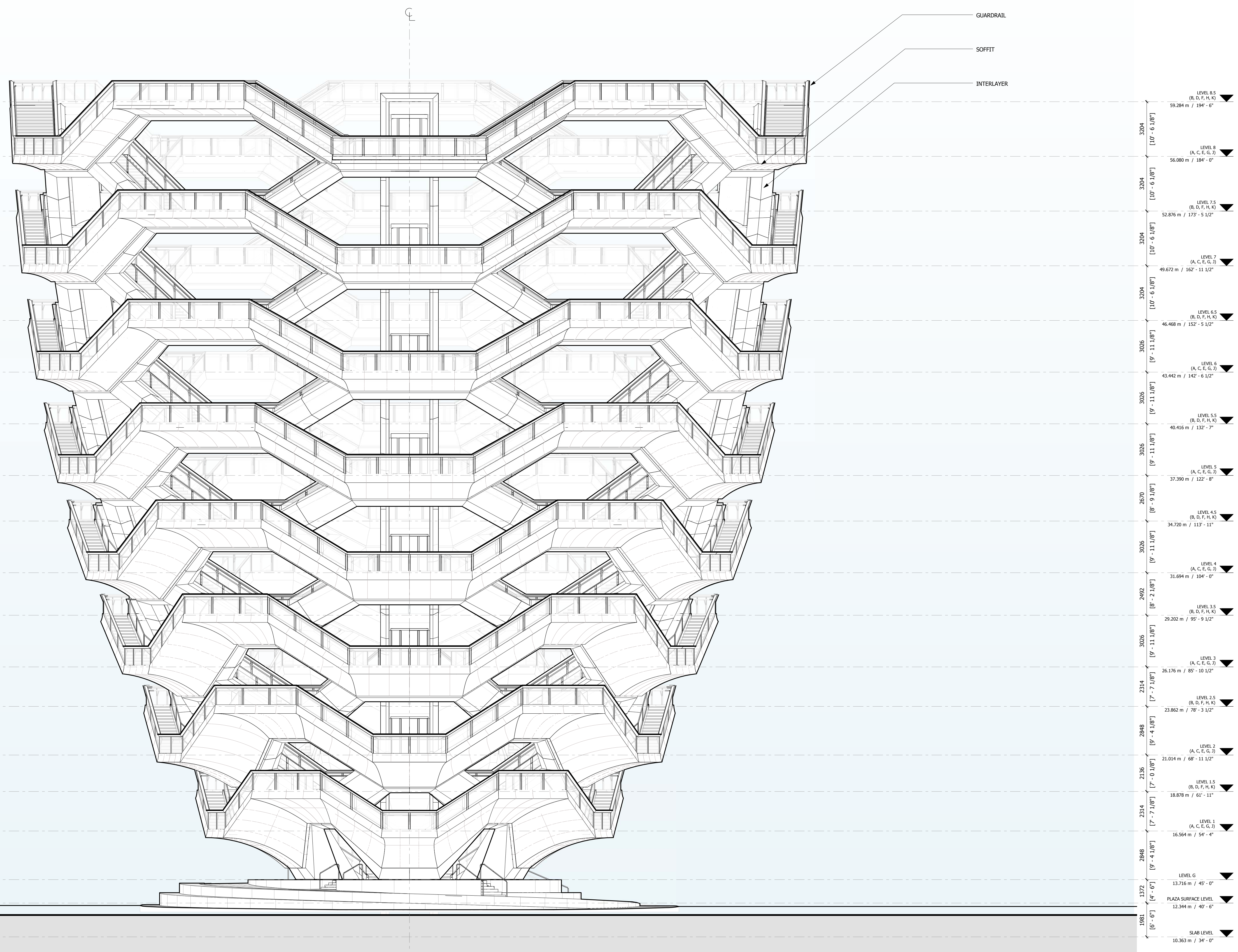
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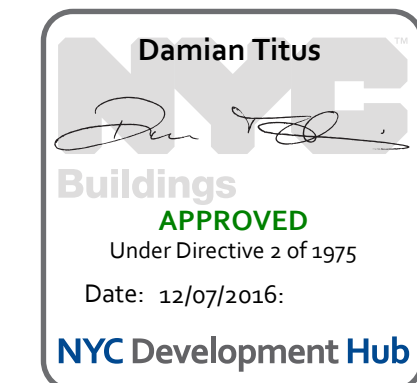
SOUTH ELEVATION

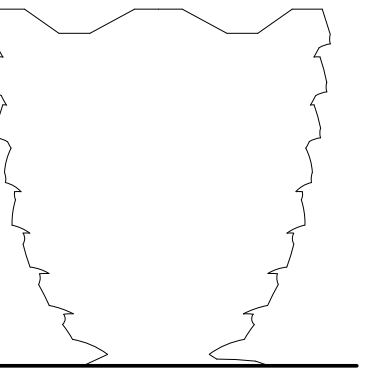
Sheet Number
A-203.00

SHEET 25 OF 86



1 SOUTH ELEVATION
1 : 100





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Related Companies
60 Columbus Circle
New York, NY 10023
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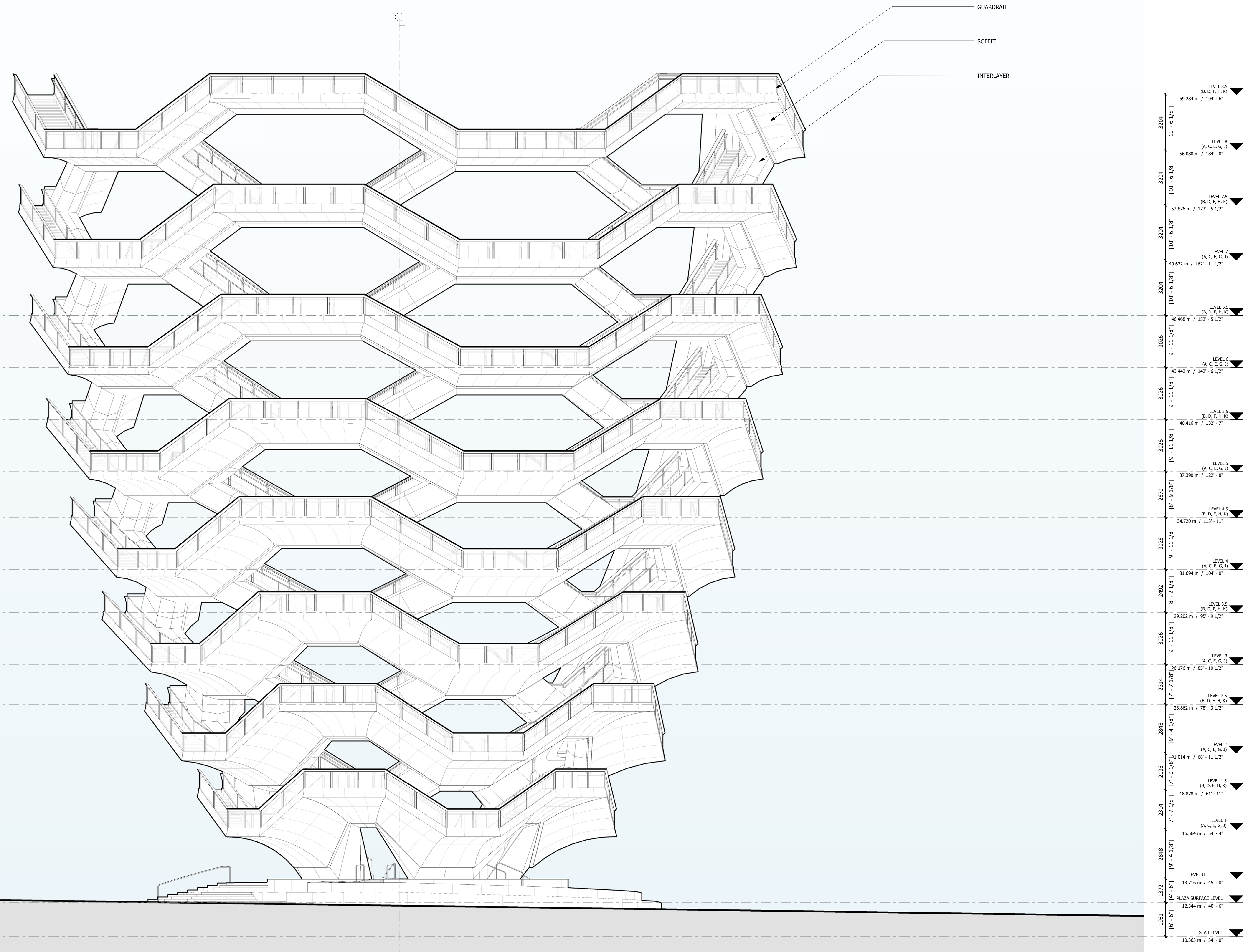
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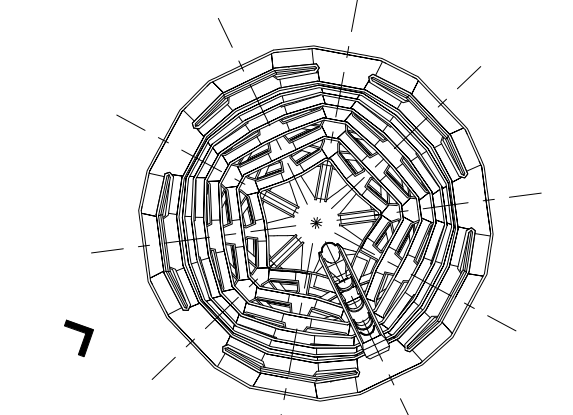
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1 WEST ELEVATION
1 : 100

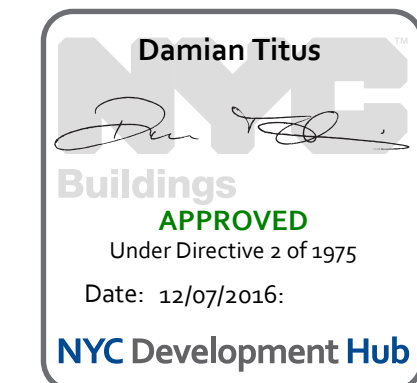


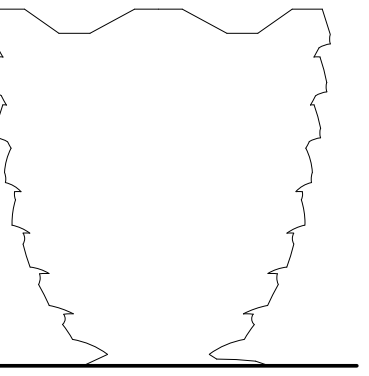
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Drawn By: Damian Titus
Sheet Number: HYE-VS-A-204

HYE-VS-A-204

WEST ELEVATION

Sheet Number
A-204.00





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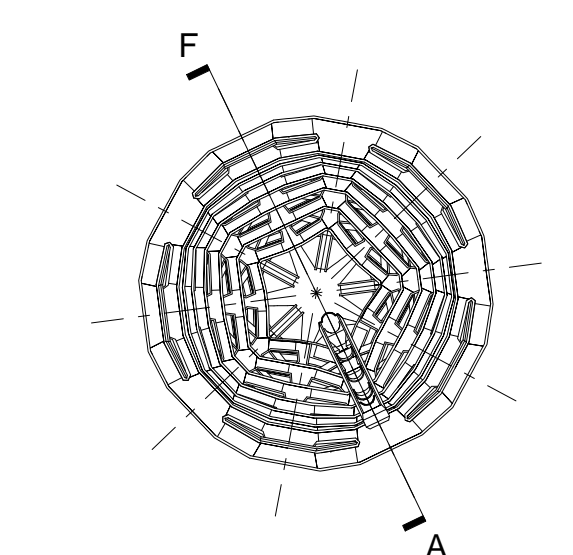
Structural Engineer
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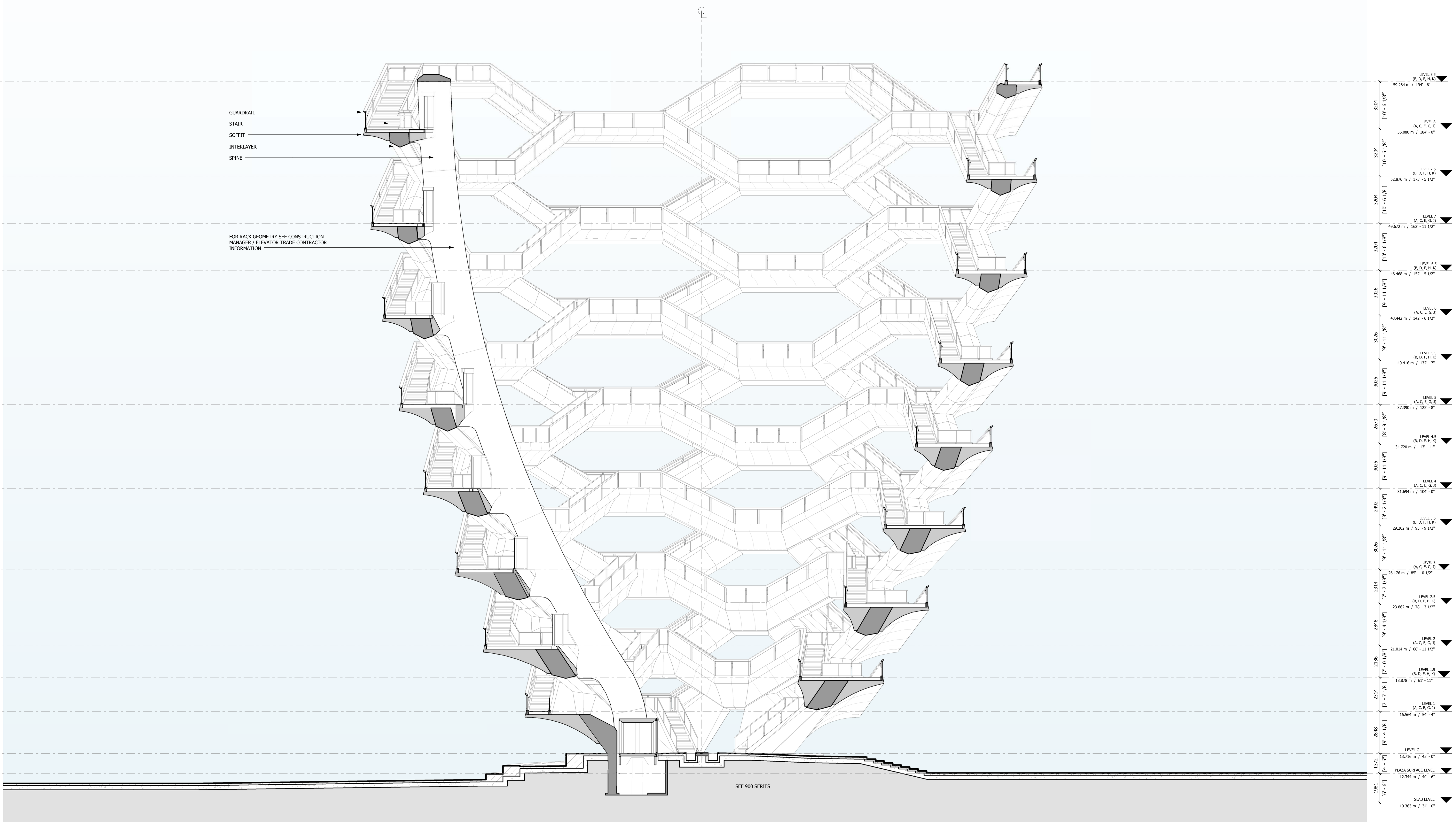
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Project No: 2298407
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Sheet Number: [Signature]

HYE-VS-A-301

SECTION A-F

Sheet Number
A-301.00

SHEET 27 OF 86



GUARDRAIL
STAIR
SOFFIT
INTERLAYER
SPINE

FOR RACK GEOMETRY SEE CONSTRUCTION
MANAGER / ELEVATOR TRADE CONTRACTOR
INFORMATION

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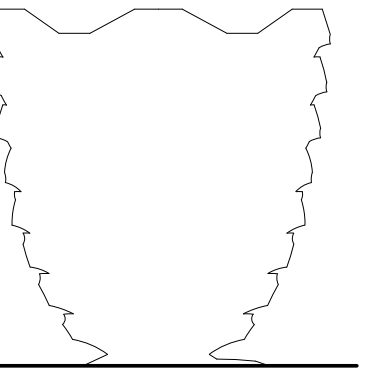
3004	LEVEL 8.5 (B, D, F, H, K)	93.284 m / 306'-0"
3004	LEVEL 8 (A, C, E, G, J)	56.080 m / 184'-0"
3004	LEVEL 7.5 (B, D, F, H, K)	52.876 m / 175'-5 1/2"
3004	LEVEL 7 (A, C, E, G, J)	49.672 m / 163'-11 1/2"
3006	LEVEL 6.5 (B, D, F, H, K)	46.468 m / 152'-5 1/2"
3006	LEVEL 6 (A, C, E, G, J)	43.264 m / 142'-0 1/2"
3006	LEVEL 5.5 (B, D, F, H, K)	40.060 m / 132'-7"
2870	LEVEL 5 (A, C, E, G, J)	37.290 m / 122'-0"
3006	LEVEL 4.5 (B, D, F, H, K)	34.720 m / 114'-0"
2492	LEVEL 4 (A, C, E, G, J)	31.894 m / 104'-0"
3006	LEVEL 3.5 (B, D, F, H, K)	29.320 m / 96'-0 1/2"
2114	LEVEL 3 (A, C, E, G, J)	26.176 m / 86'-10 1/2"
2848	LEVEL 2.5 (B, D, F, H, K)	23.600 m / 78'-1 1/2"
2136	LEVEL 2 (A, C, E, G, J)	21.024 m / 69'-0 1/2"
2314	LEVEL 1.5 (B, D, F, H, K)	18.448 m / 61'-0"
2848	LEVEL 1 (A, C, E, G, J)	15.872 m / 52'-1 1/2"
1372	LEVEL 0 (A, C, E, G, J)	13.296 m / 44'-0"
1981	PLAZA SURFACE LEVEL (A, C, E, G, J)	12.344 m / 40'-5"
1981	SLAB LEVEL (B, D, F, H, K)	10.360 m / 34'-0"

1 SECTION A-F
1 : 100

LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT
- CLADDING PROVIDED Under Directive 9 of 1975 Date: 12/22/2016

Damian Titus
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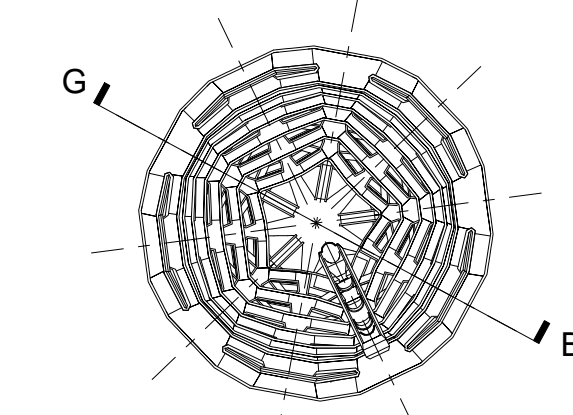
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Key Plan



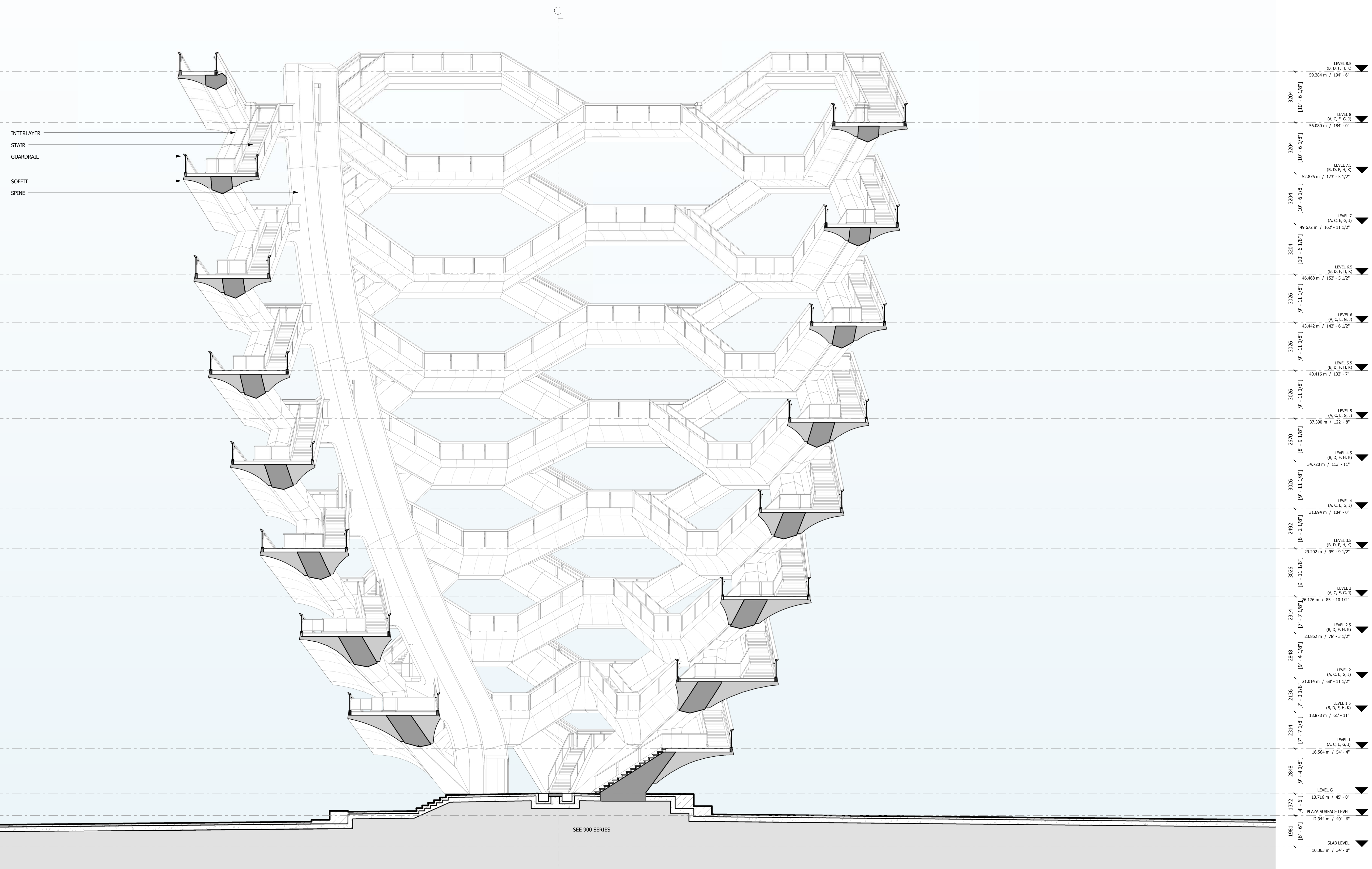
Date: 05/15/14
Project No: 2296002
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STATE OF NEW YORK

HYE-VS-A-302

SECTION B-G

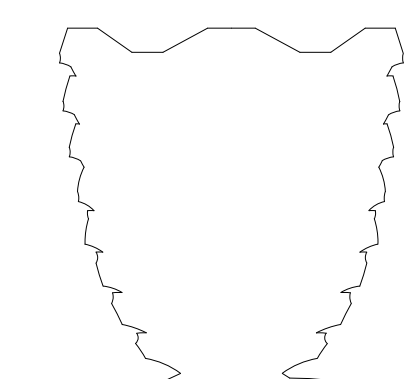
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SHEET 28 OF 86



1 SECTION B-G
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LEGEND
INTERLAYER
CAVITY BEHIND SOFFIT
CLADDING PROFILE
Under Directive 3 of 1975
Date: 12/22/2016
NYC Development Hub



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048
Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.866.7514 Fax: 212.986.7510
Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

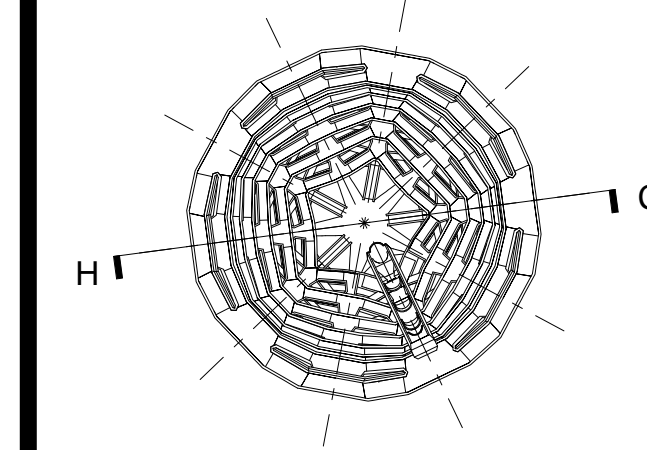
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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Key Plan



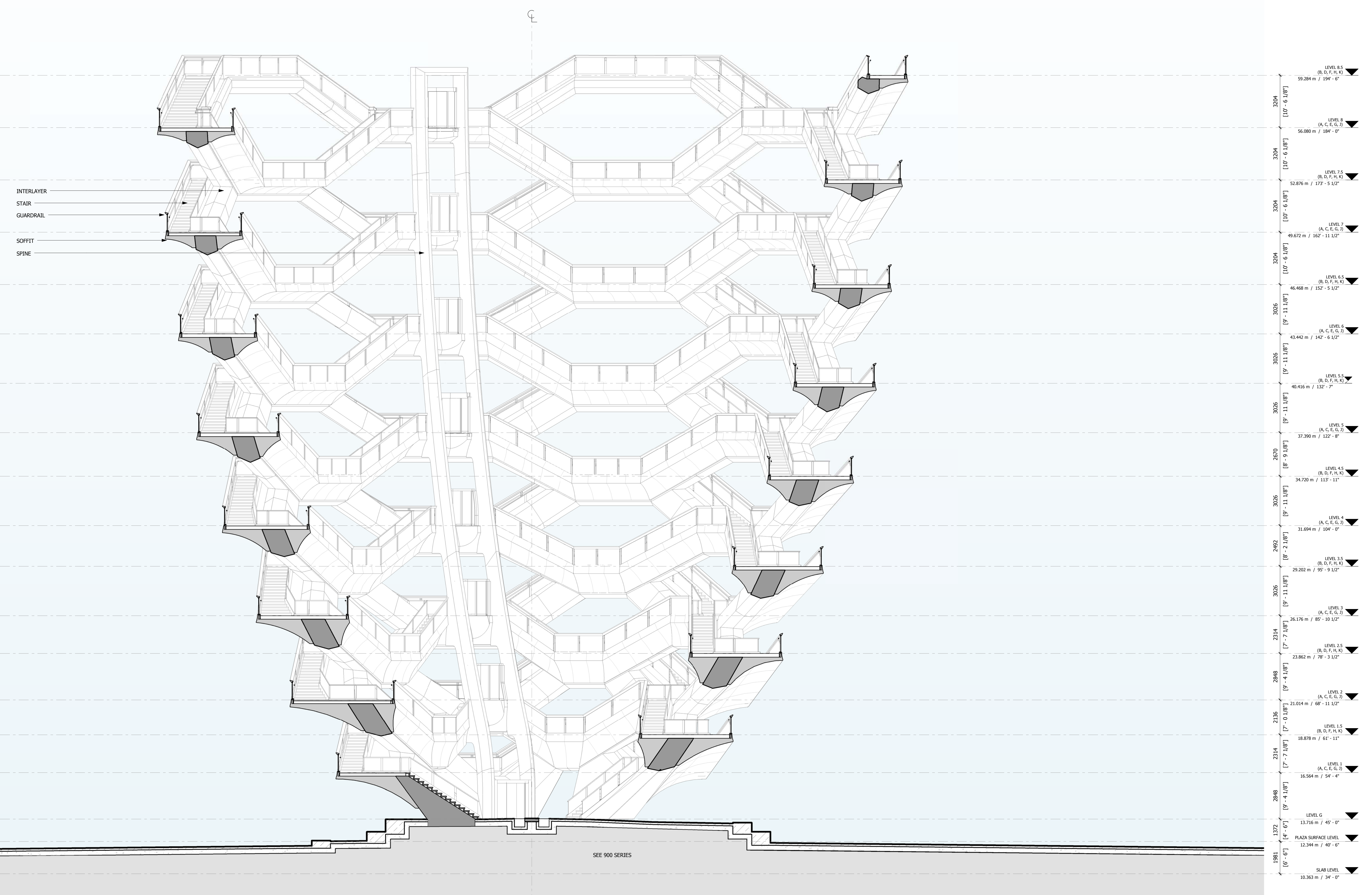
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REGISTERED ARCHITECT
STATE OF NEW YORK

HYE-VS-A-303

SECTION C-H

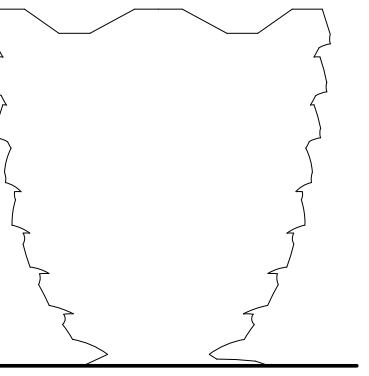
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SHEET 29 OF 86



1 SECTION C-H
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LEGEND
INTERSLAYER
CAVITY BEHIND SOFFIT
CLADDING PANELS
Under Directive 9 of 1975
Date: 12/22/2016
NYC Development Hub



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Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
330 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.966.7514 Fax: 212.966.7510

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Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

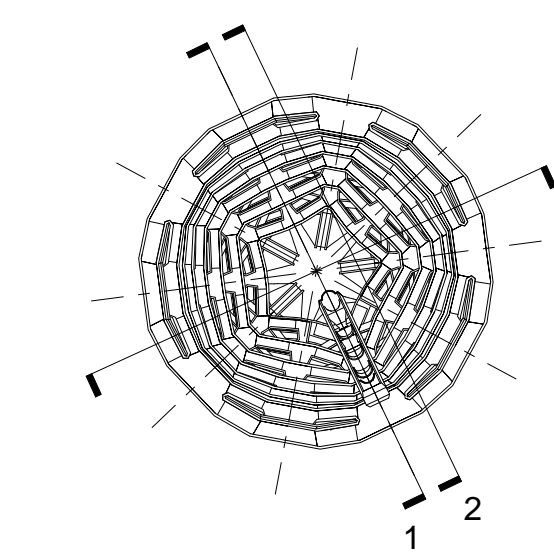
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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Rev. Plan



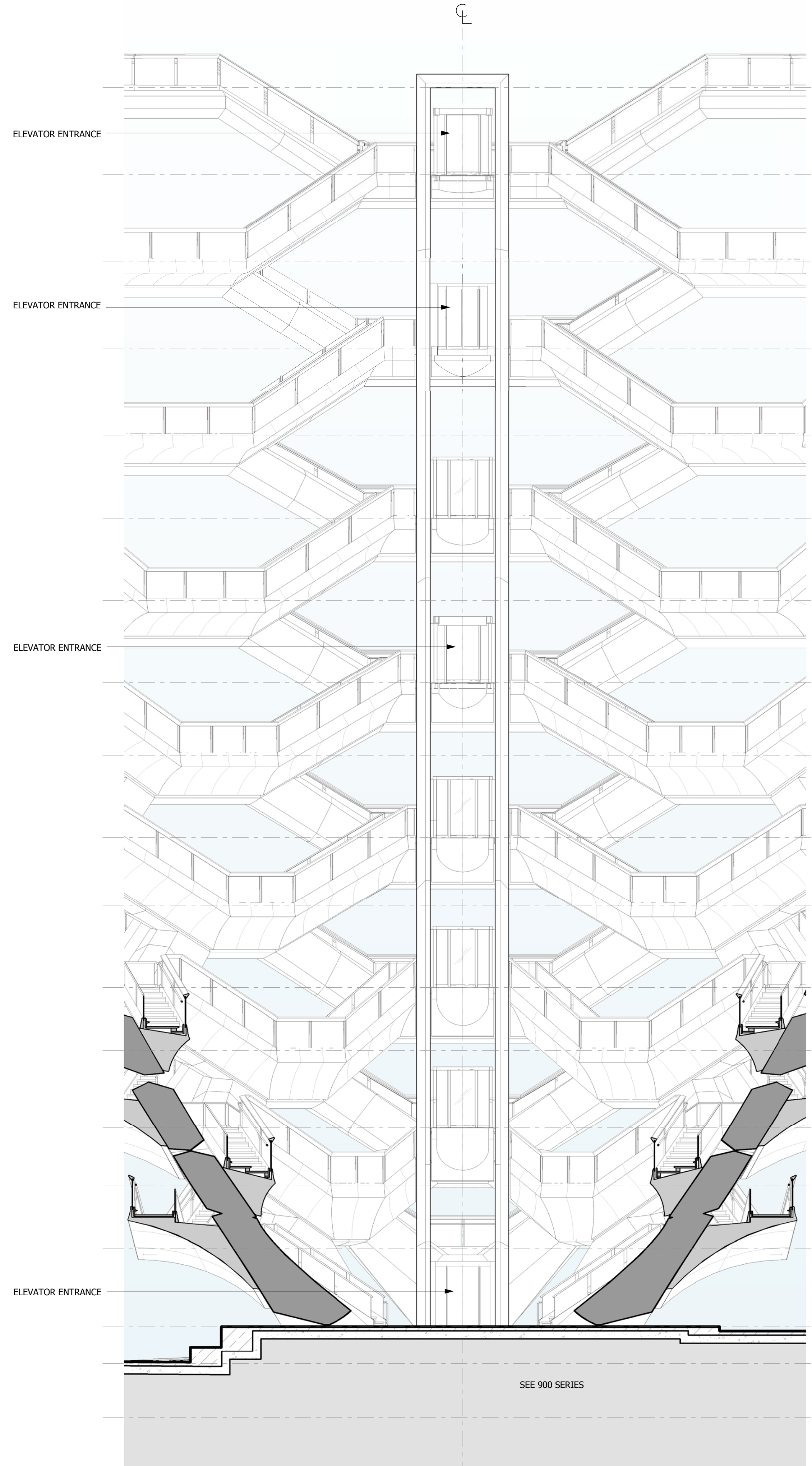
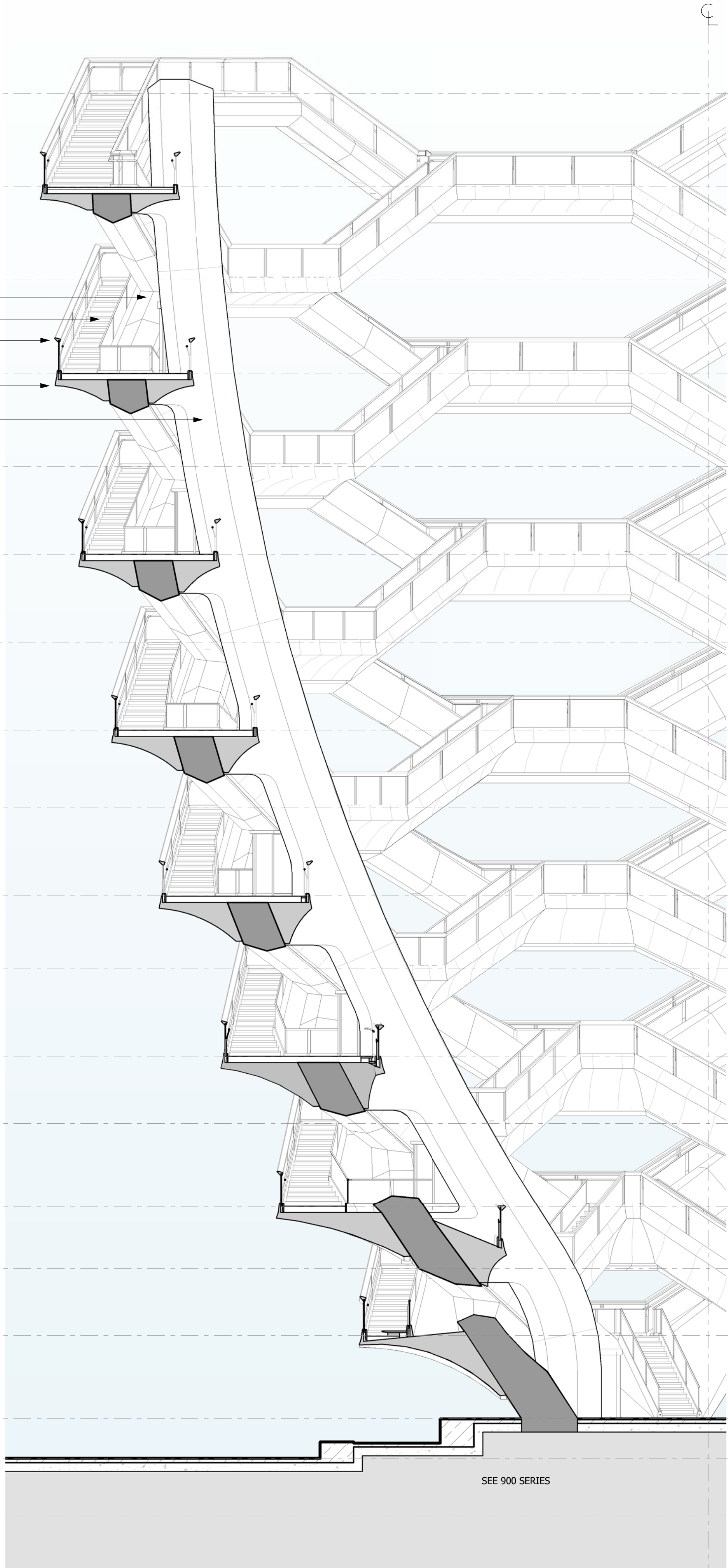
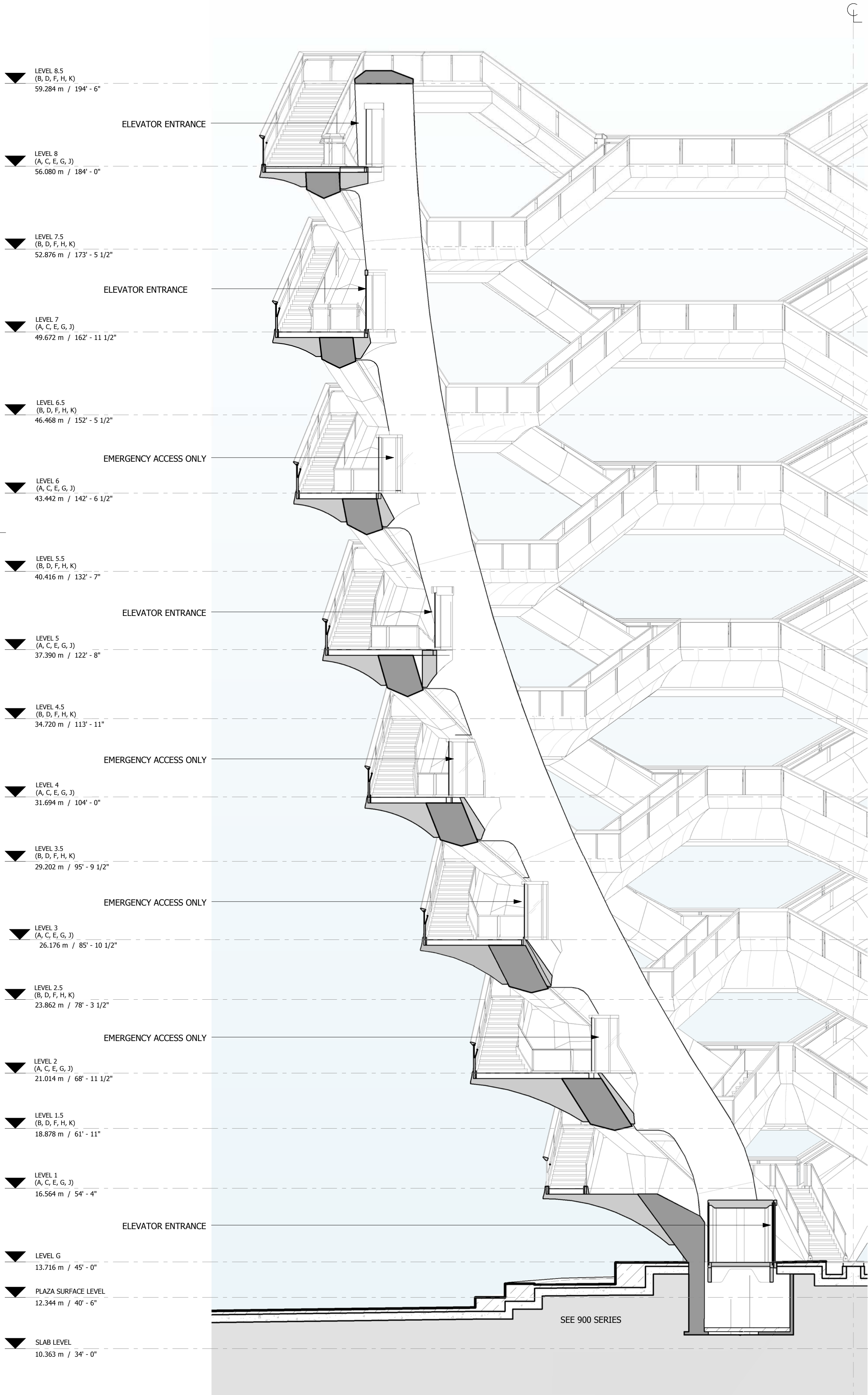
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HYE-VS-A-320

SPINE SECTION

Project Number: **A-320.00**

SHEET 30 OF 86



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2 ELEVATOR SPINE SECTION 02 1 : 100

3 ELEVATOR SPINE SECTION 03 1 : 100

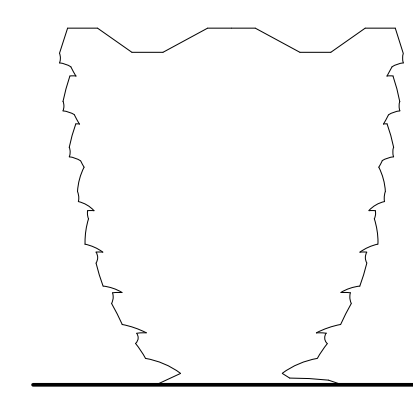
LEGEND

- INTERLAYER
- CAVITY BEHIND SOFFIT

Damian Titus
REGISTERED ARCHITECT
Under Directive 9 of 1975
Date: 12/22/2016
NYC Development Hub

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.866.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

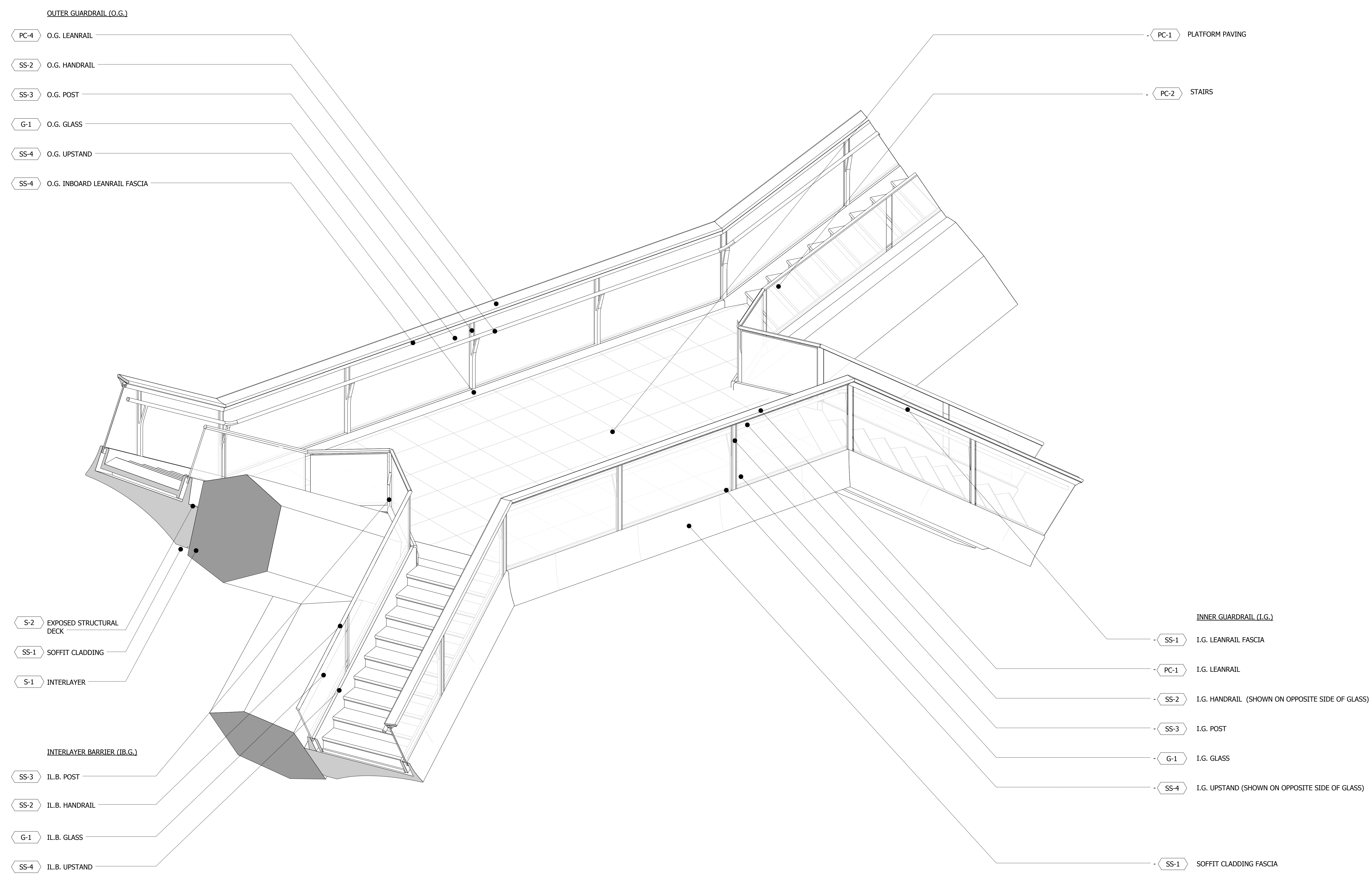
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

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Heatherwick Studio
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1 PLATFORM COMPONENT DIAGRAM

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No. Inset Date

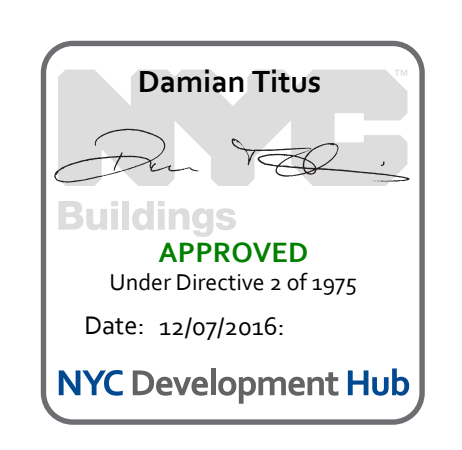
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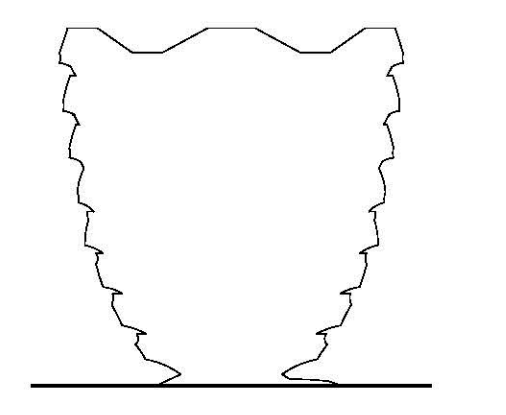
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Project No: 2206007
Drawn By: [Signature]
Sheet Number: [Signature]

HYE-VS-A-400

**PLATFORM
COMPONENT DIAGRAM**

Sheet Number
A-400.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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 Tishman Construction Corporation
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 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

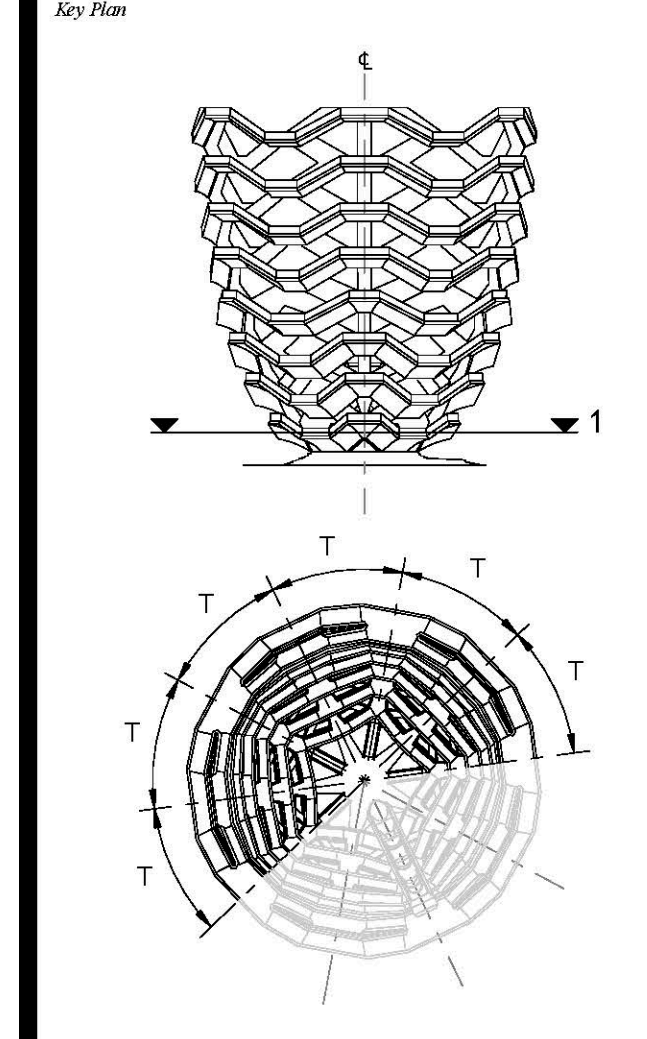
Design Architect
 Heatherwick Studio
 356-364 Greys Inn Road
 London WC1X 8DH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
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 No. Issue Date



Date: 08/29/14
 Project No: 2298-02
 Design By: [Signature]
 Sheet Number: [Signature]
HYE-VS-A-401

TYPICAL PLATFORM LEVEL 1 (DISPLAY 1)

Drawing Number: **A-401.00**

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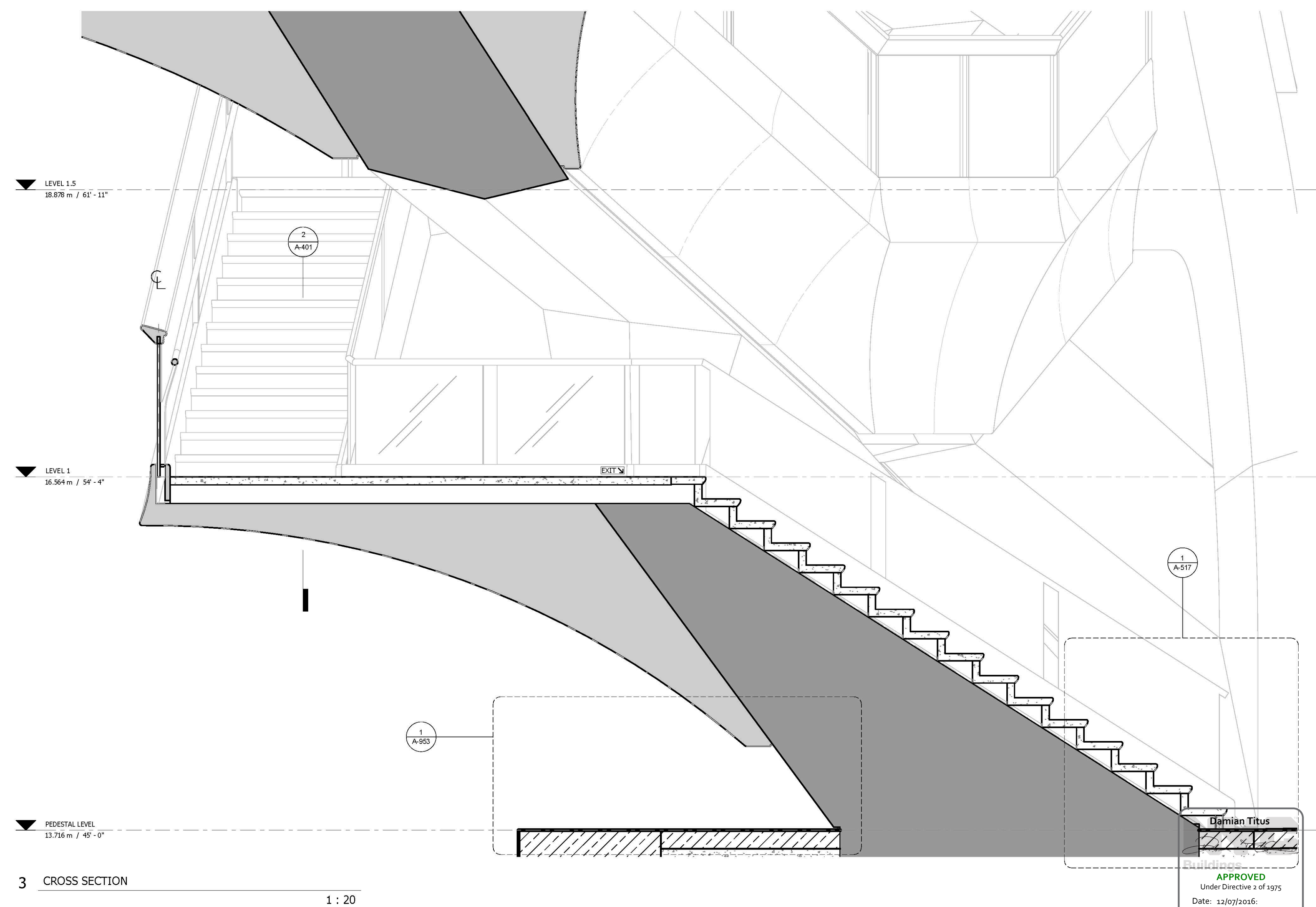
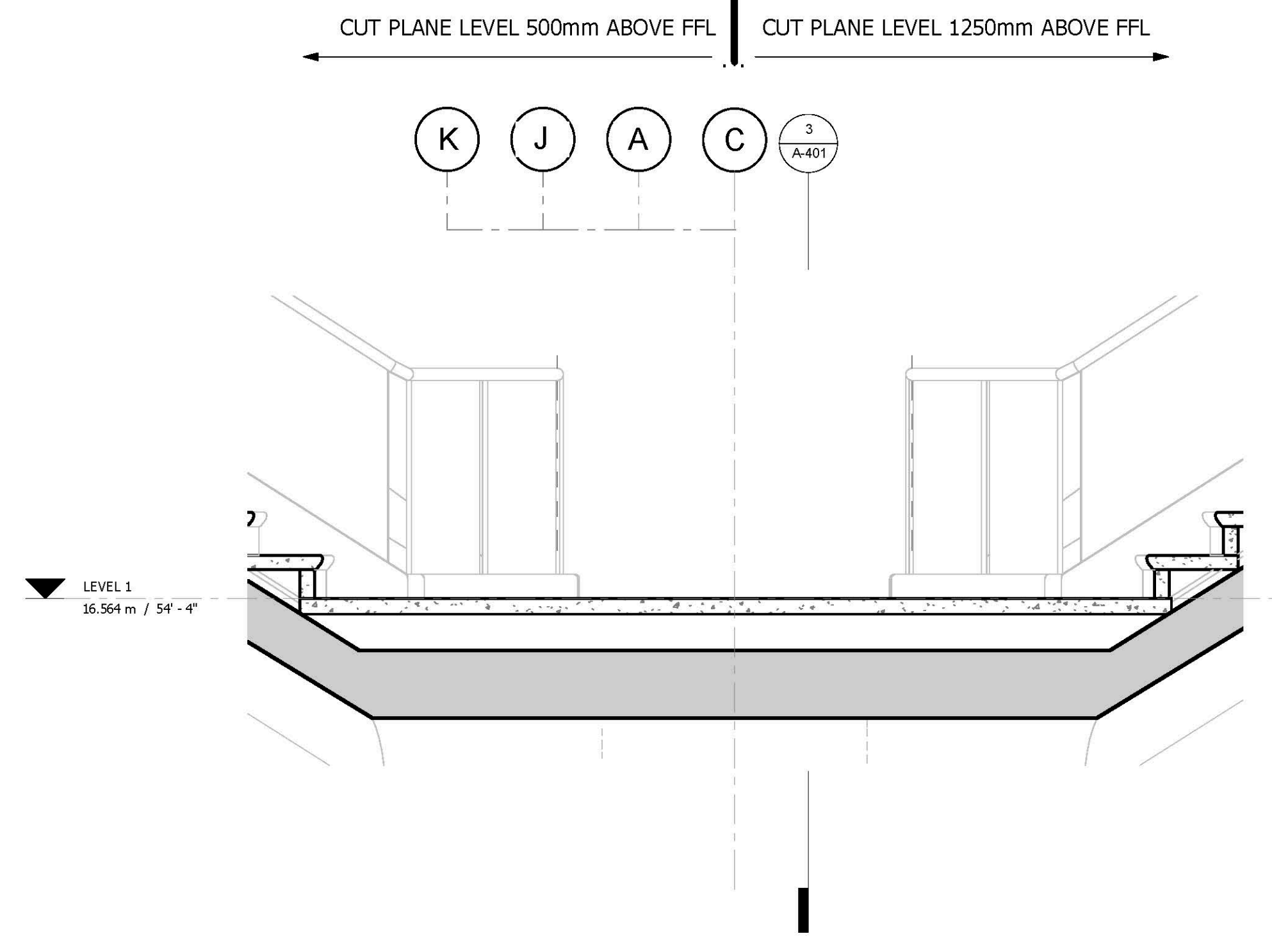
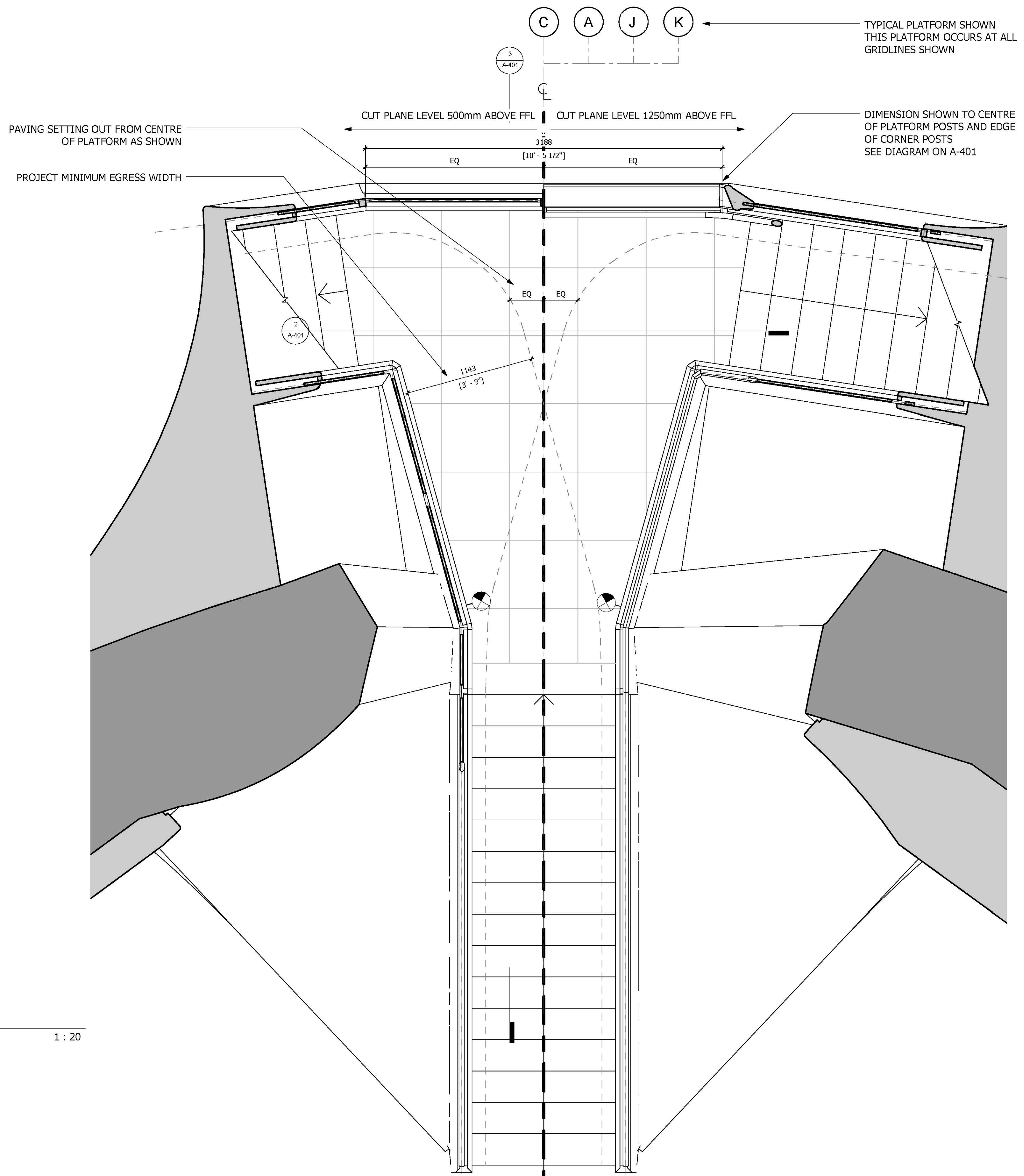
- OCCUPATION CAPACITY - BASED ON TIMED EGRESS ANALYSIS.
- POST DIMENSIONS GIVEN AS DIAGRAM BELOW:

- STAIR DIRECTION ARROWS ALWAYS POINT IN THE "UP" DIRECTION:

KEY:

EXIT SIGN PLAN VIEW, MOUNTED FLUSH TO BASE.

EXIT SIGN ELEVATION VIEW



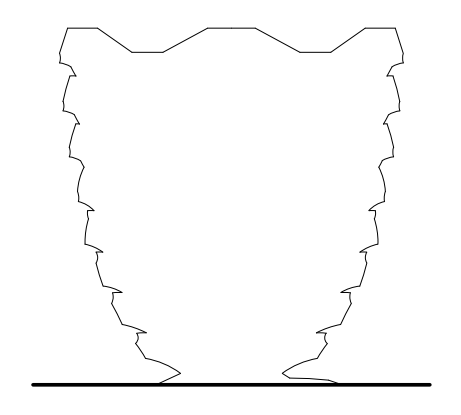
1 PLAN 1 : 20

2 LONG SECTION 1 : 20

3 CROSS SECTION 1 : 20

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
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Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.866.7514 Fax: 212.9863.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
New York, NY 10022
Tel: 212.708.6800

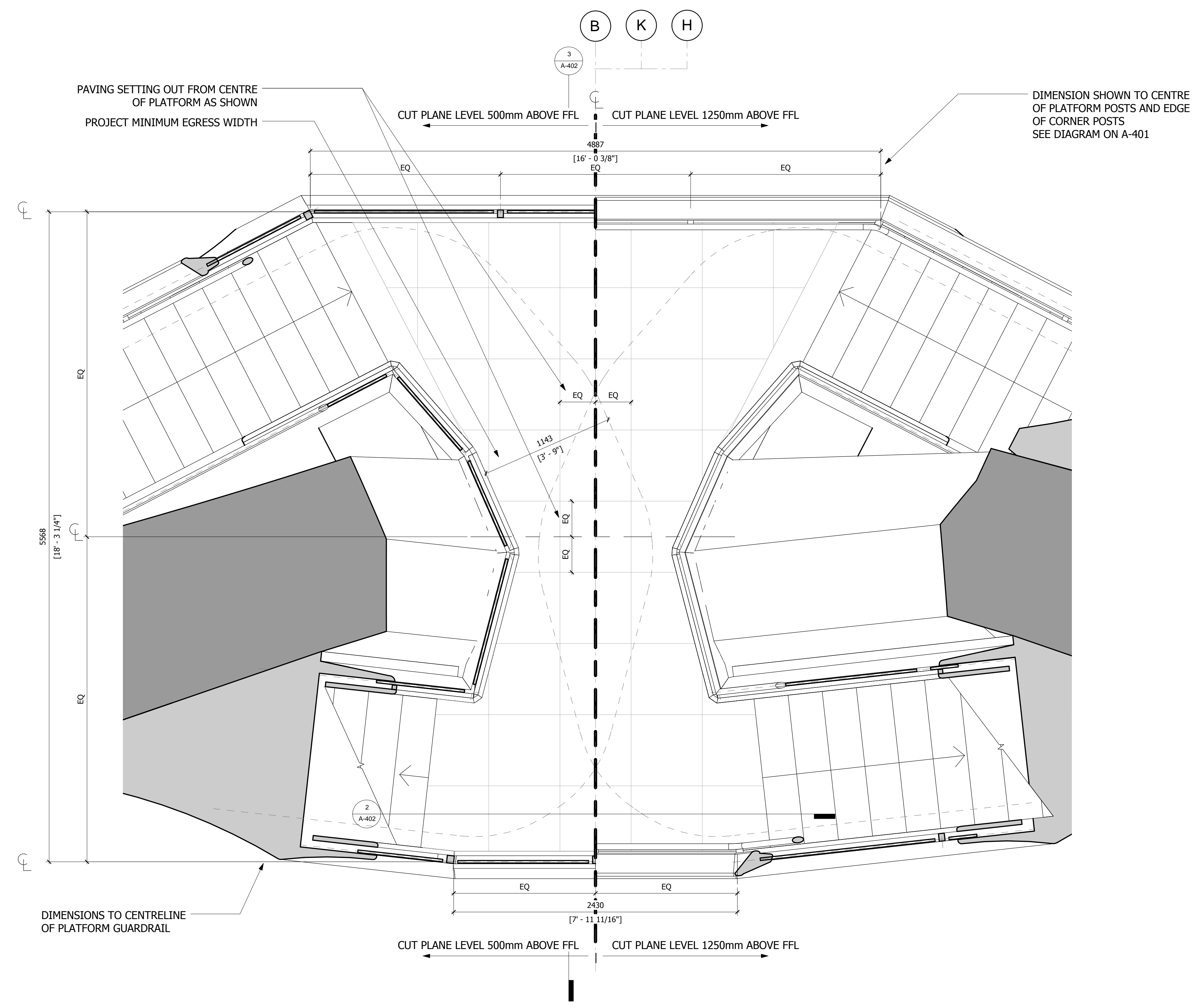
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10018
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

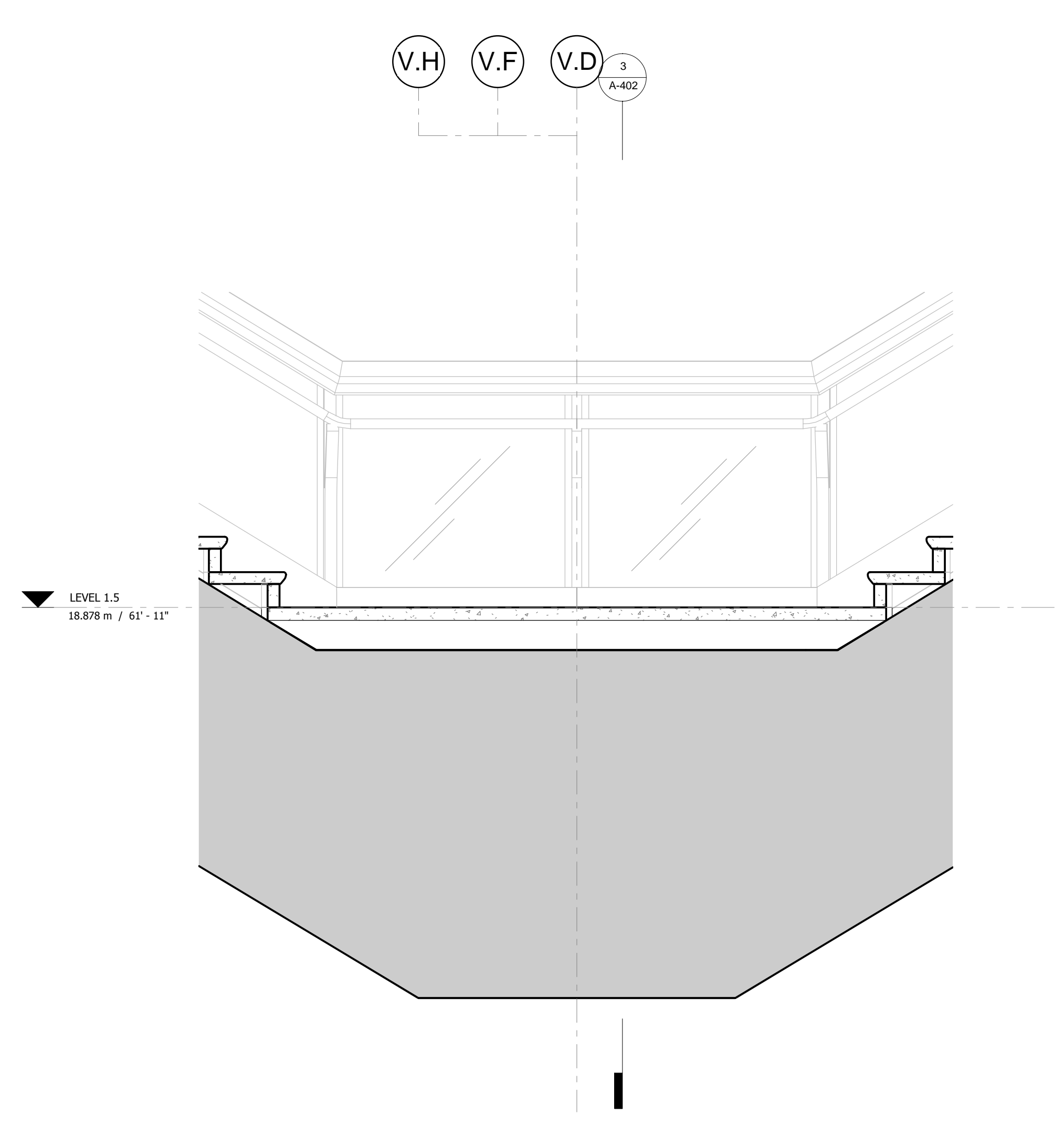
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10017
Tel: 917.661.7800 Fax: 917.661.7801

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Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

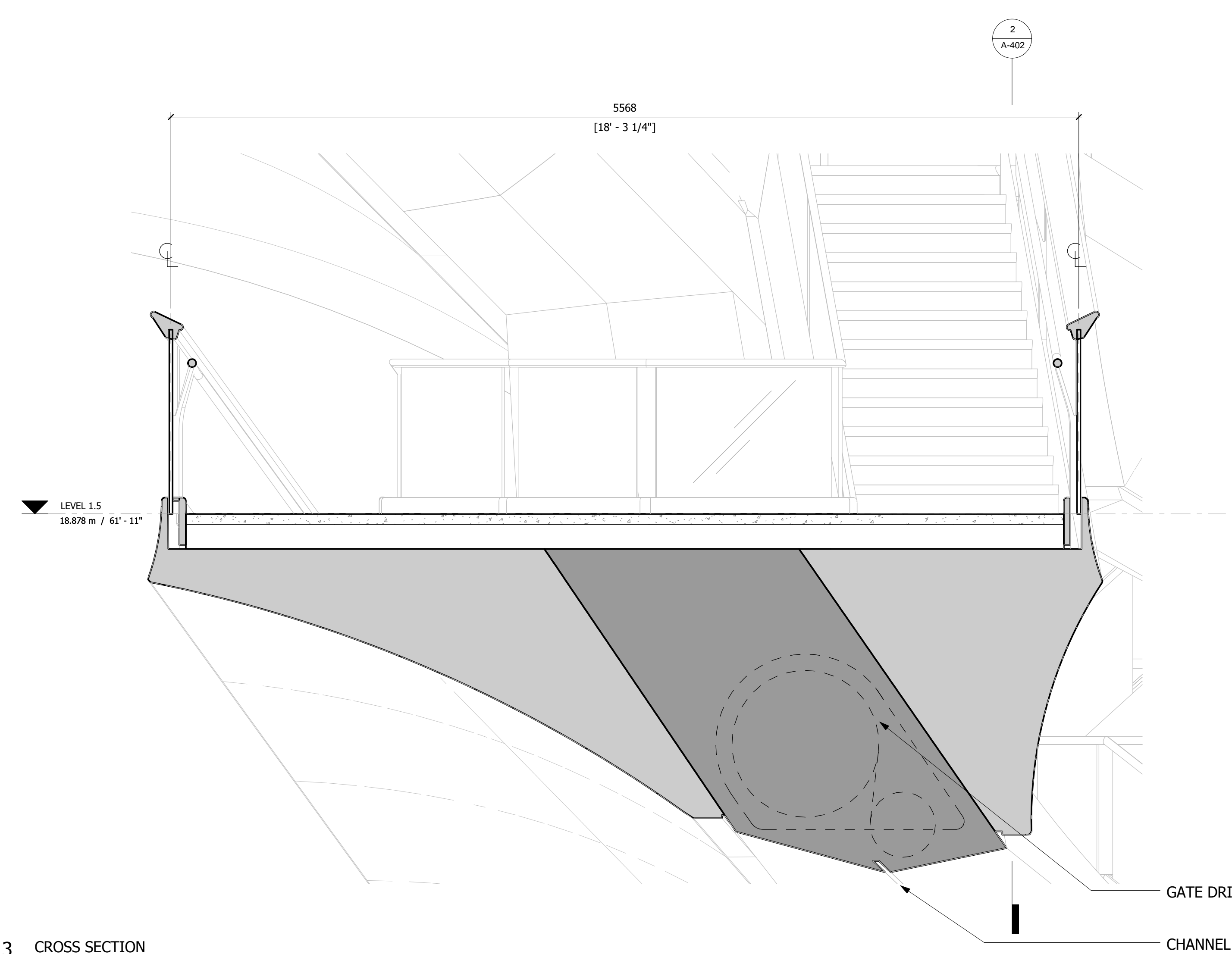
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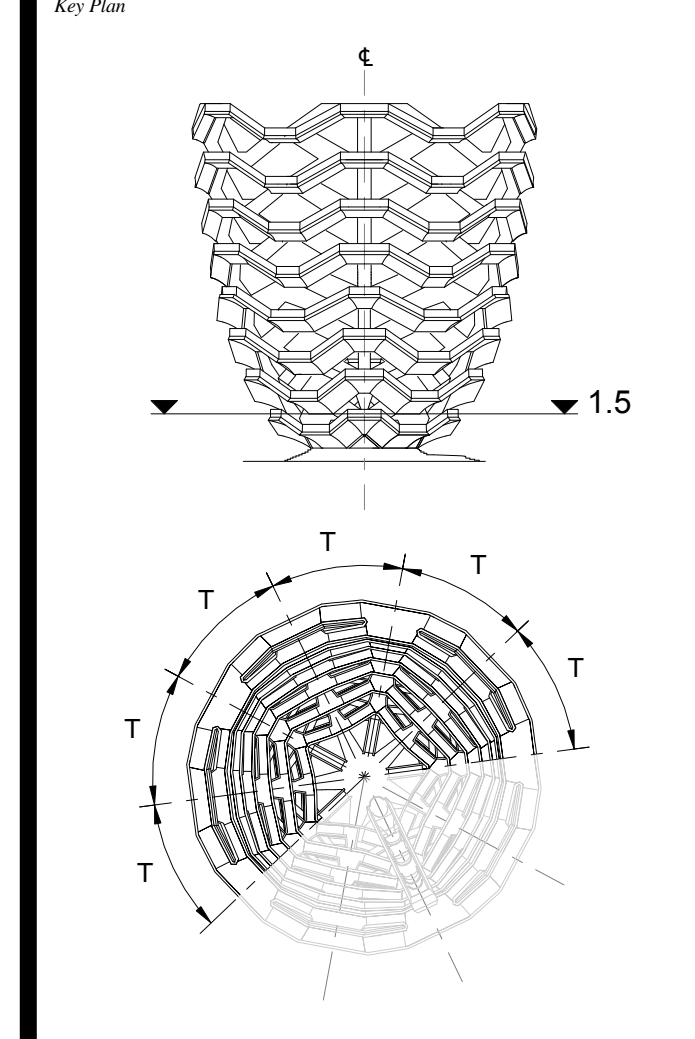


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3 CROSS SECTION 1 : 20

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No. Inset Date

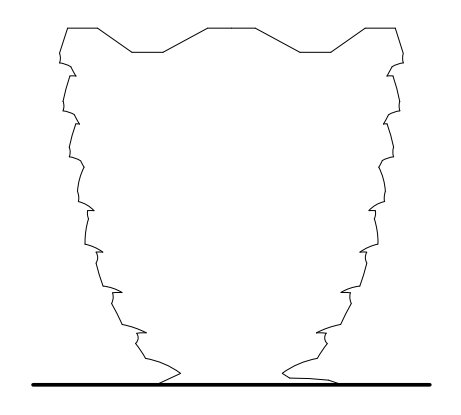


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Project No: 2298002
Drawn By: [Signature]
Sheet Number: HYE-VS-A-402

**TYPICAL PLATFORM
LEVEL 1.5 (DISPLAY 1)**

Project Number: **A-402.00**

Damian Titus
REGISTERED ARCHITECT
APPROVED
Buildings APPROVED
Channel for Security Gates
SEE DRAWINGS A-555 AND A-556
Date: 12/07/2016
NYC Development Hub



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
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Construction Manager
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 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

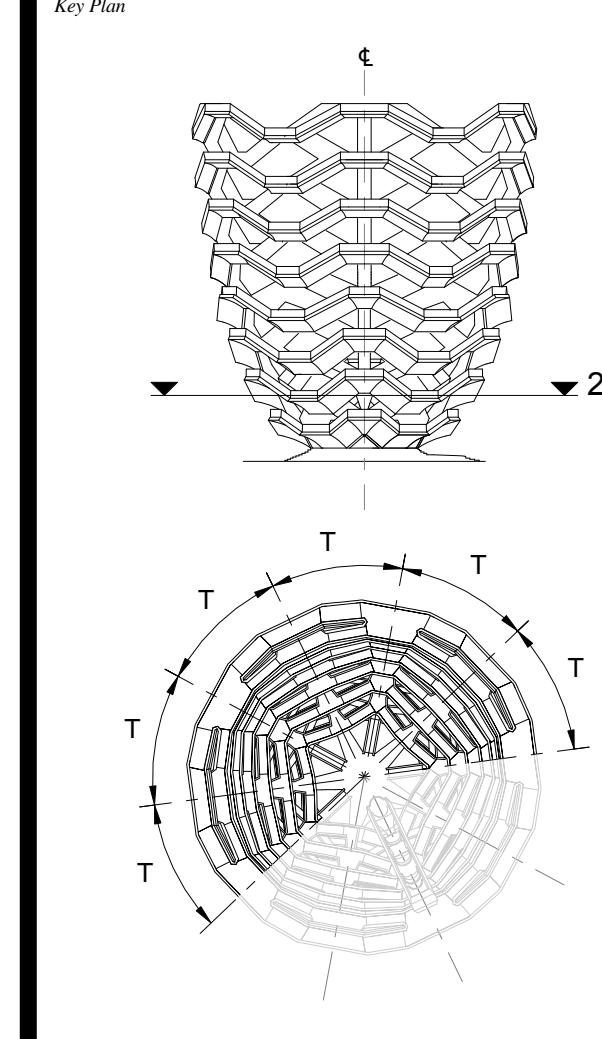
Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
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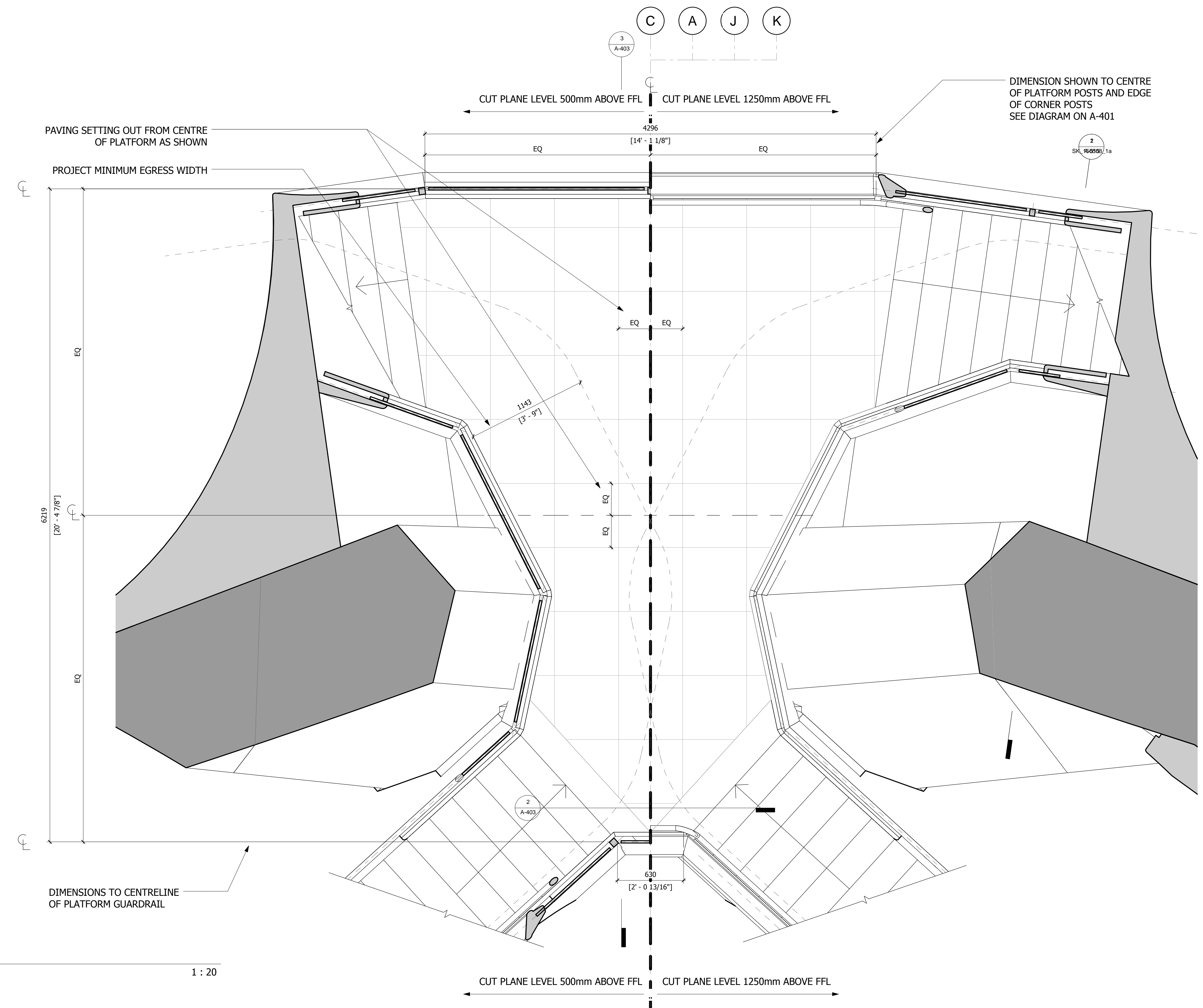


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 Project No: 2298407
 Drawn By: [Signature]
 Sheet Number: [Signature]

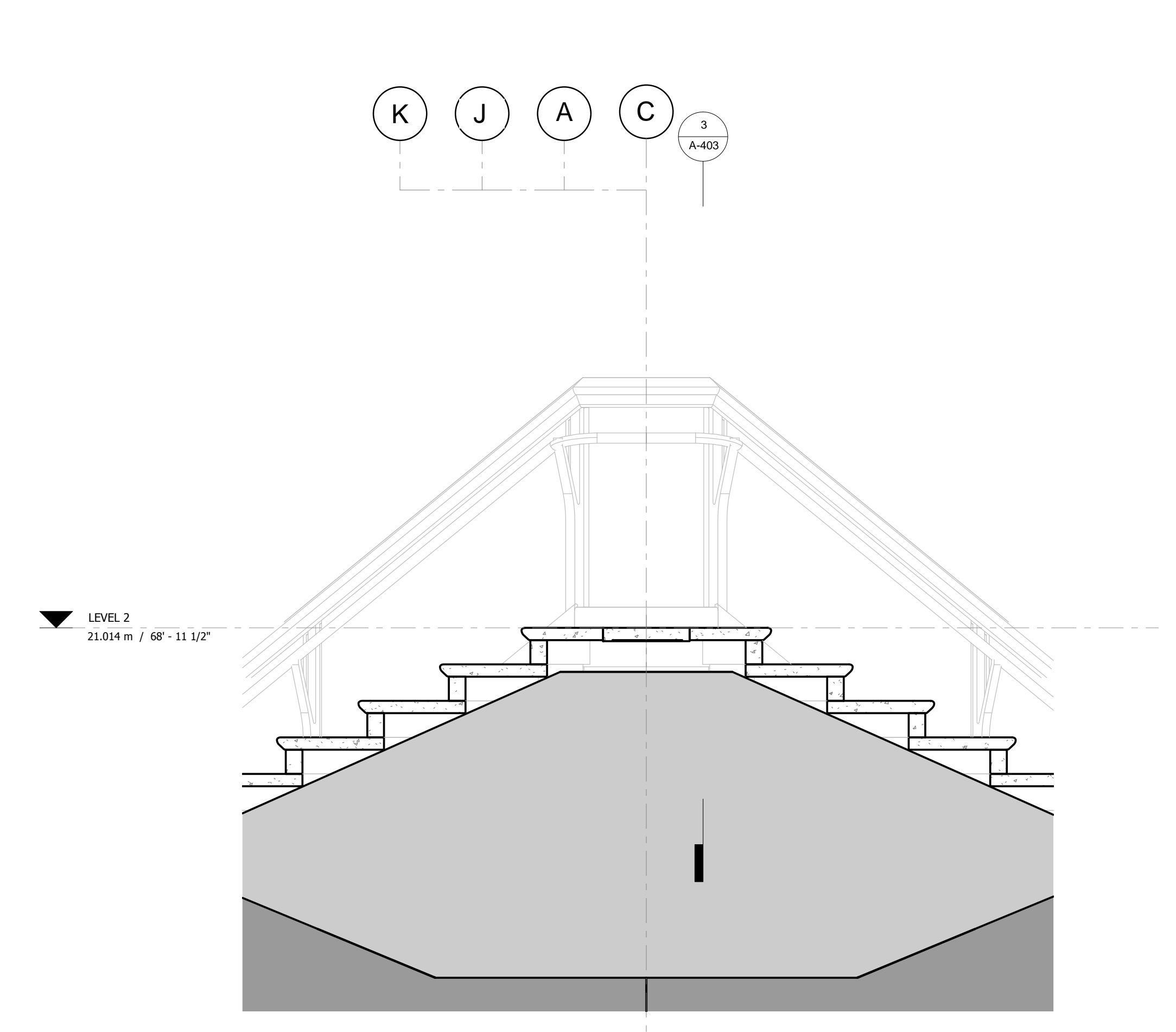
HYE-VS-A-403

**TYPICAL PLATFORM
 LEVEL 2 (DISPLAY 2)**

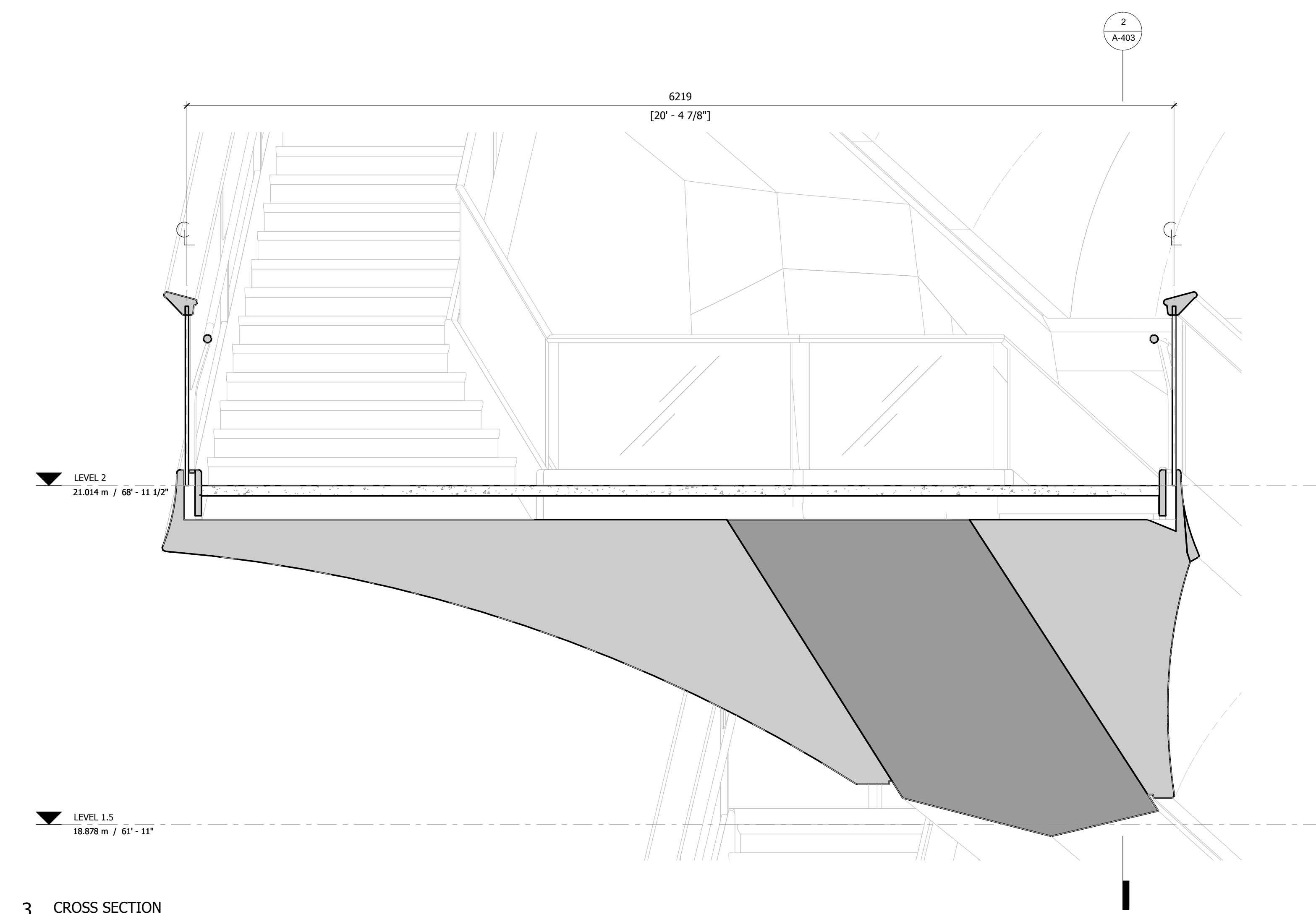
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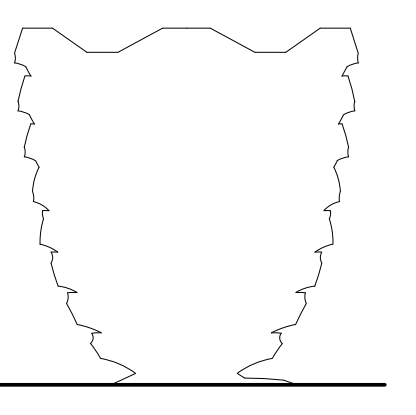


3 CROSS SECTION
 1 : 20



HUDSON YARDS
VESSEL

530 WEST 33RD STREET
NEW YORK, NY



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Related Companies
60 Columbus Circle
New York, NY 10023
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Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

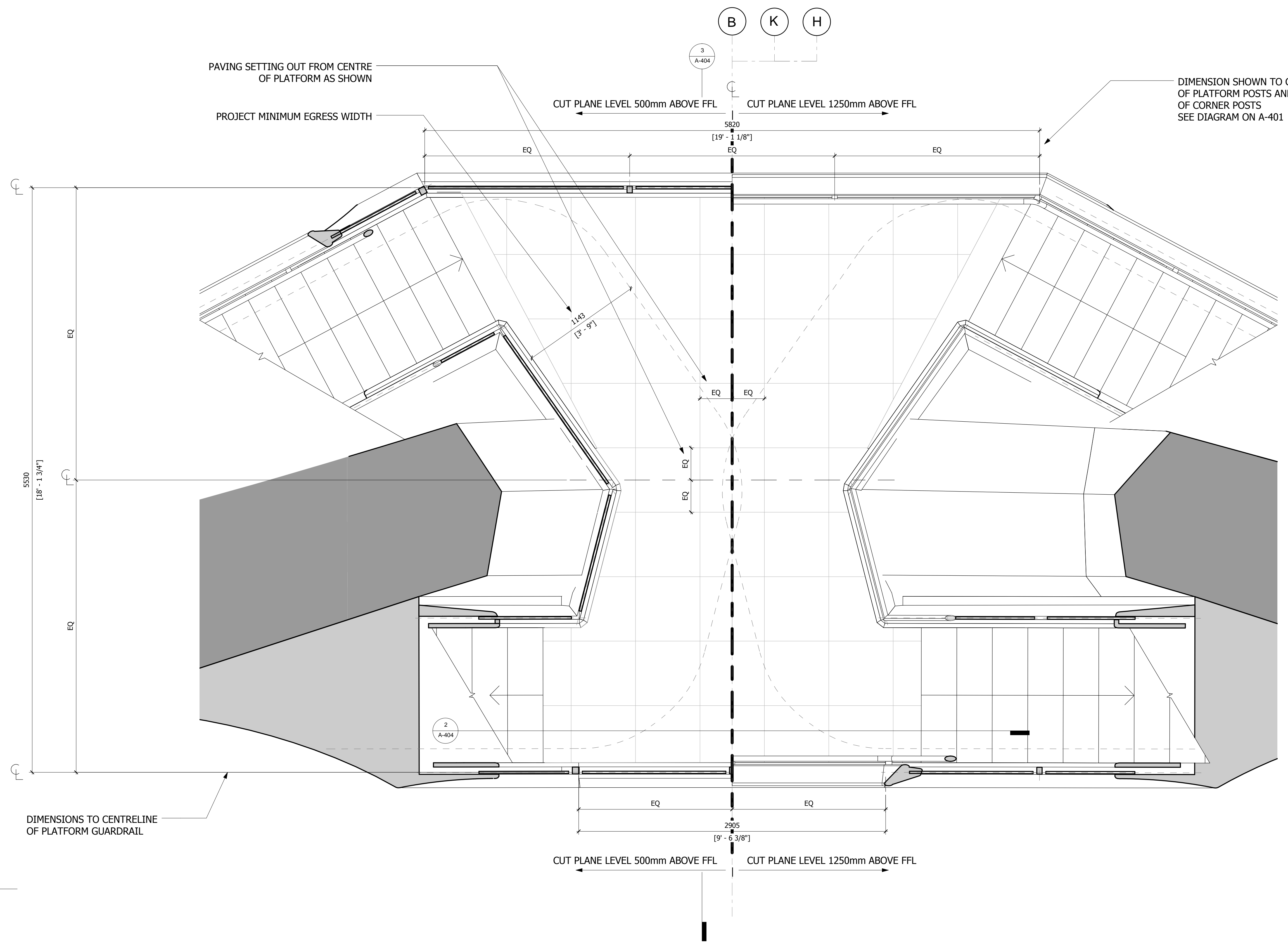
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

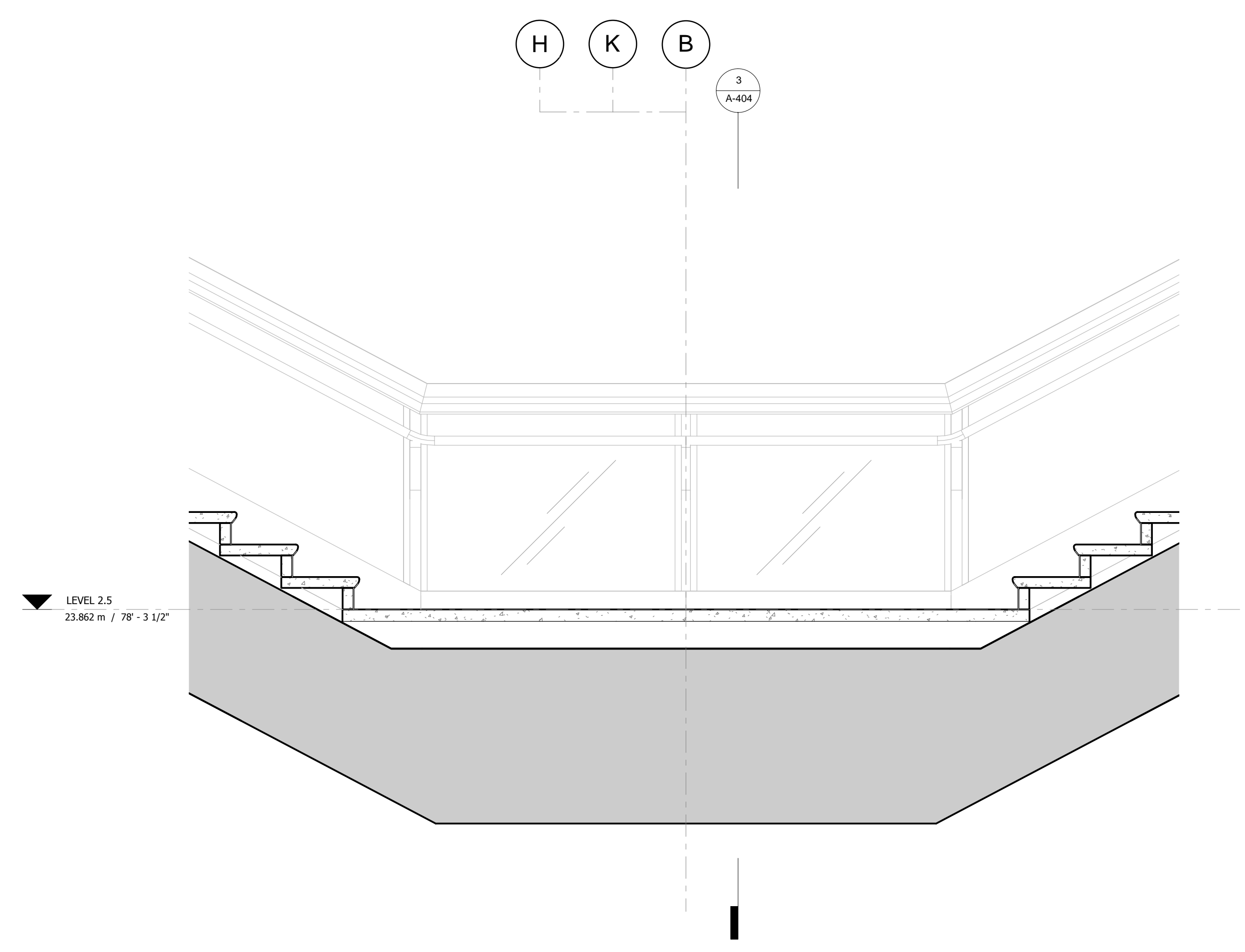
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

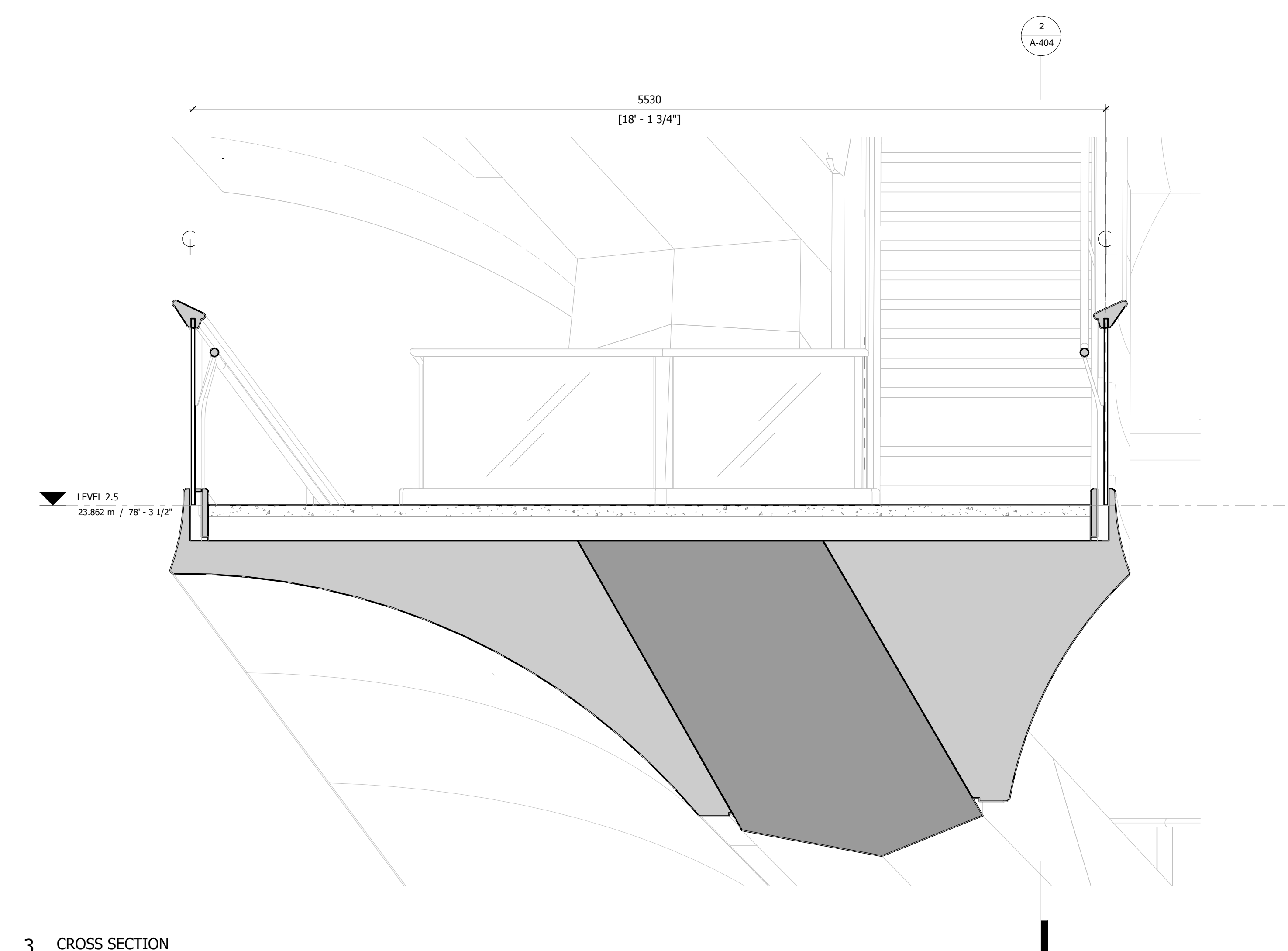
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1 PLAN 1 : 20



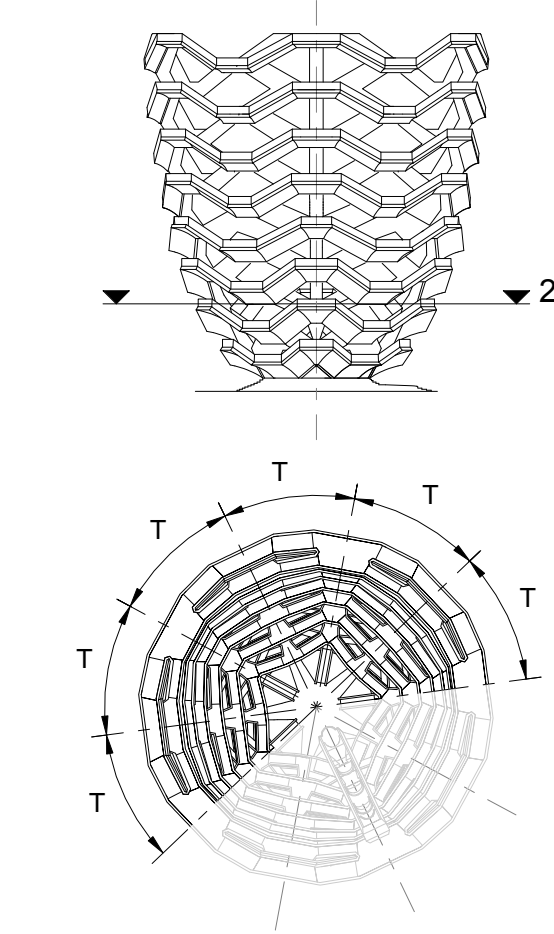
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1 D.O.B. BUILDING PERMIT FILING 05/20/2016

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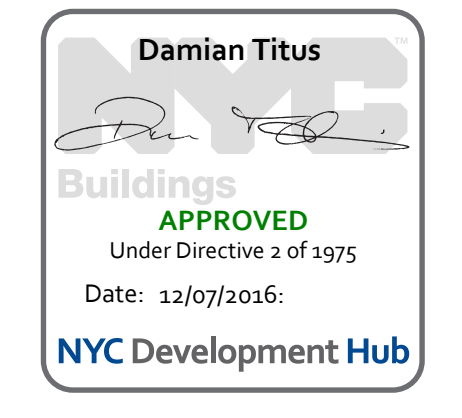


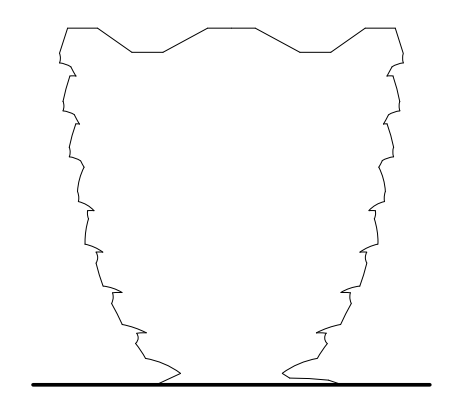
Date: 08/29/14
Project No: 2298007
Drawn By: [Signature]
Sheet Number: HYE-VS-A-404

HYE-VS-A-404

**TYPICAL PLATFORM
LEVEL 2.5 (DISPLAY 2)**

Sheet Number
A-404.00





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 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

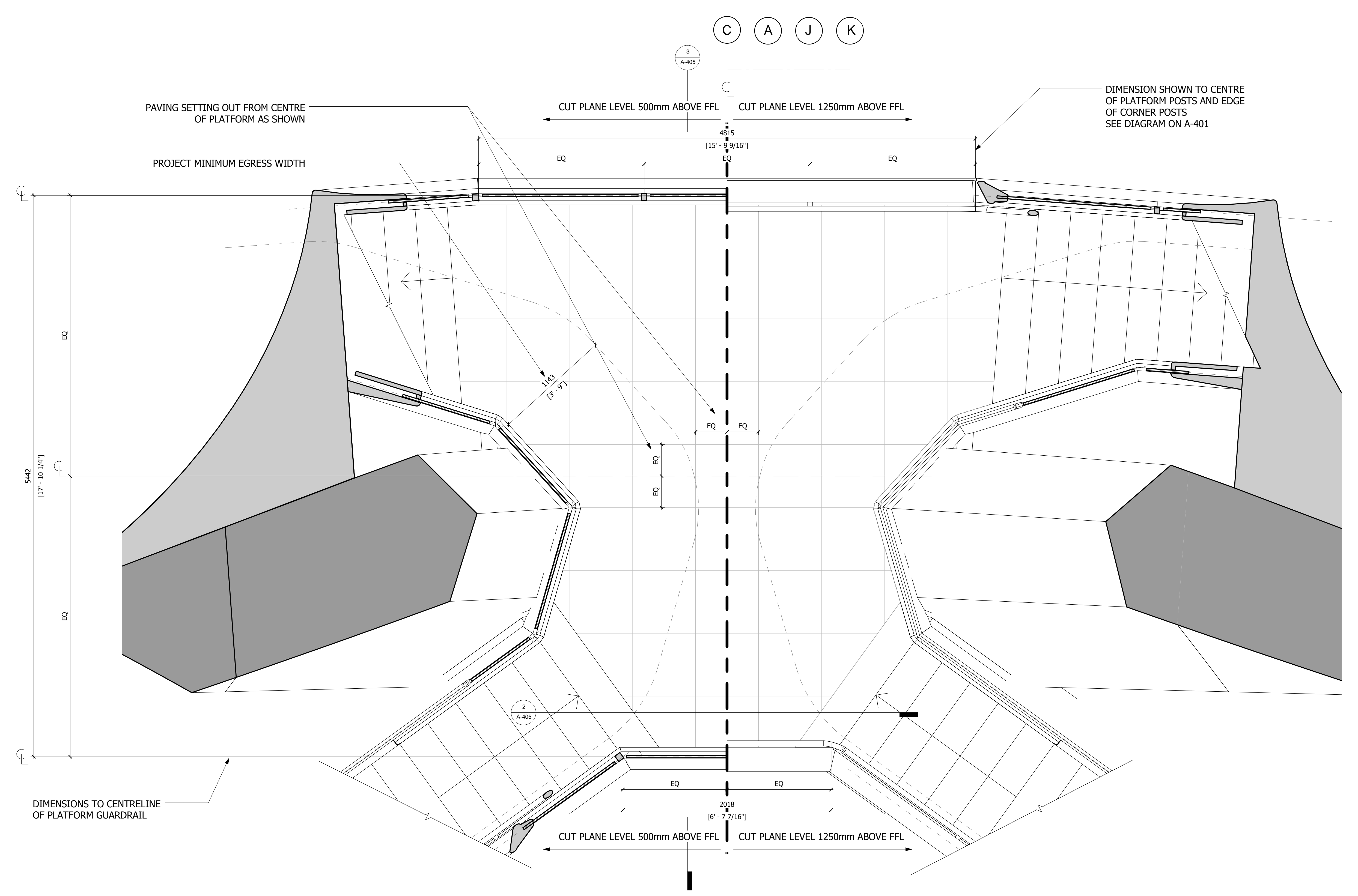
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
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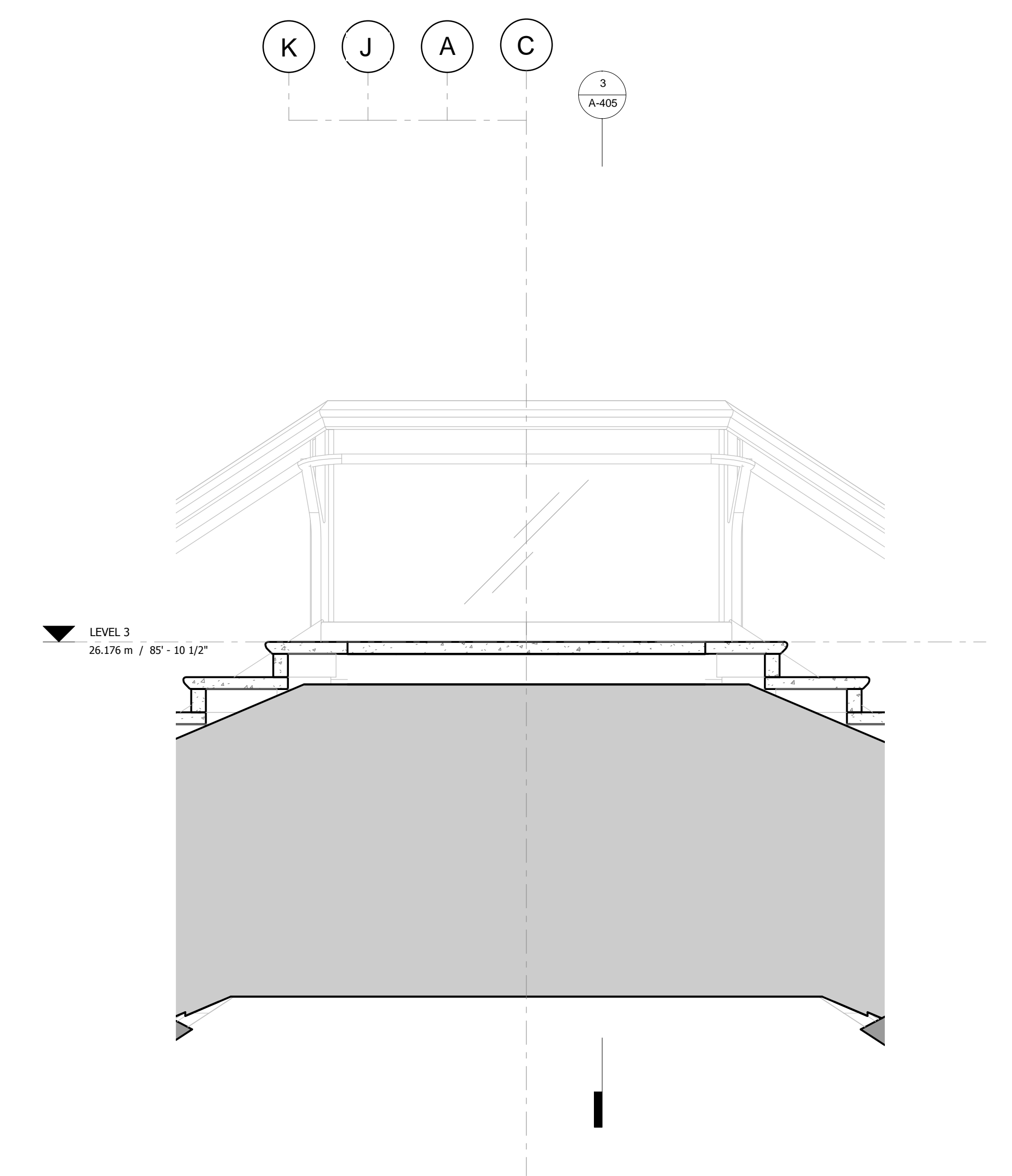
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
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 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

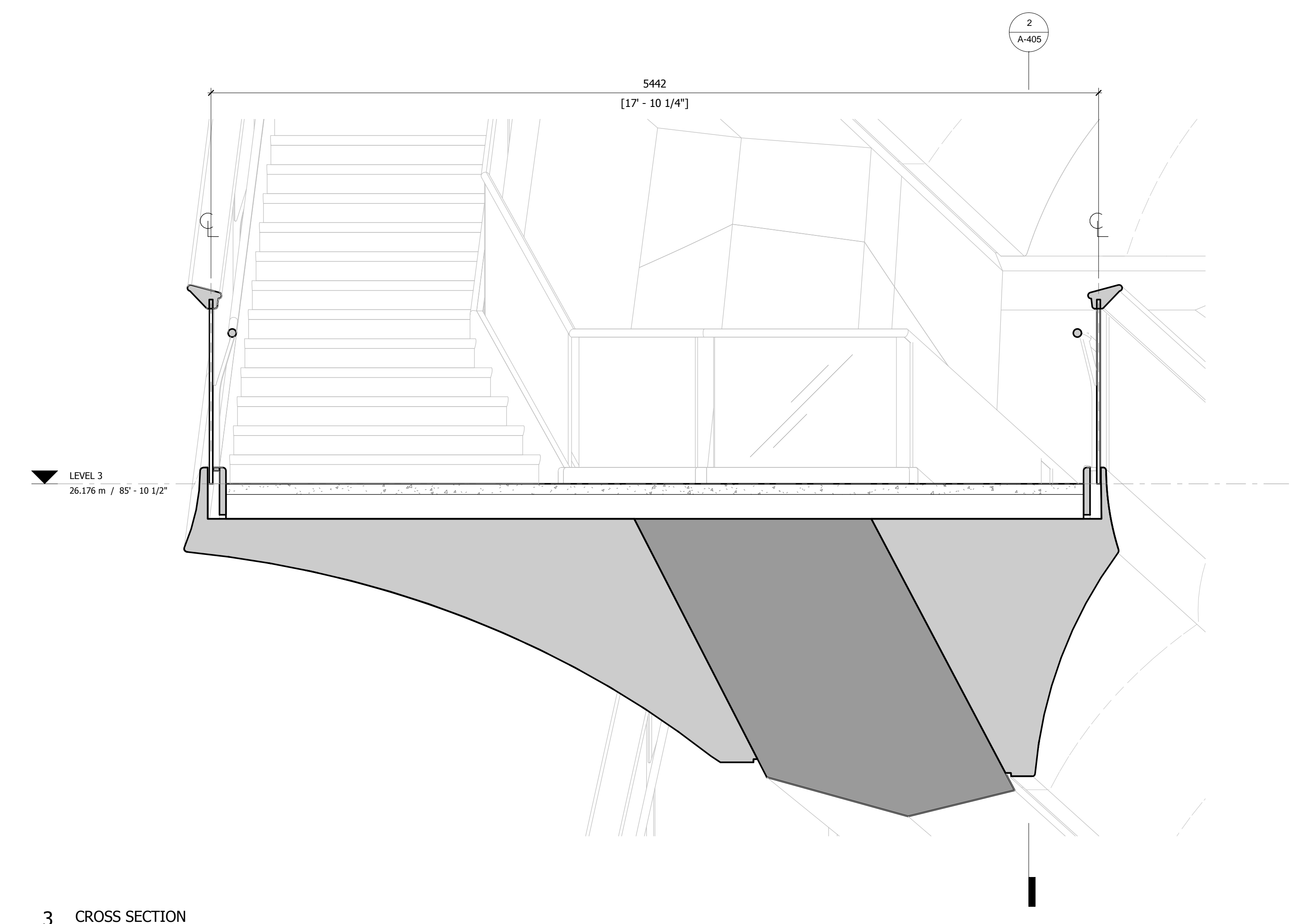
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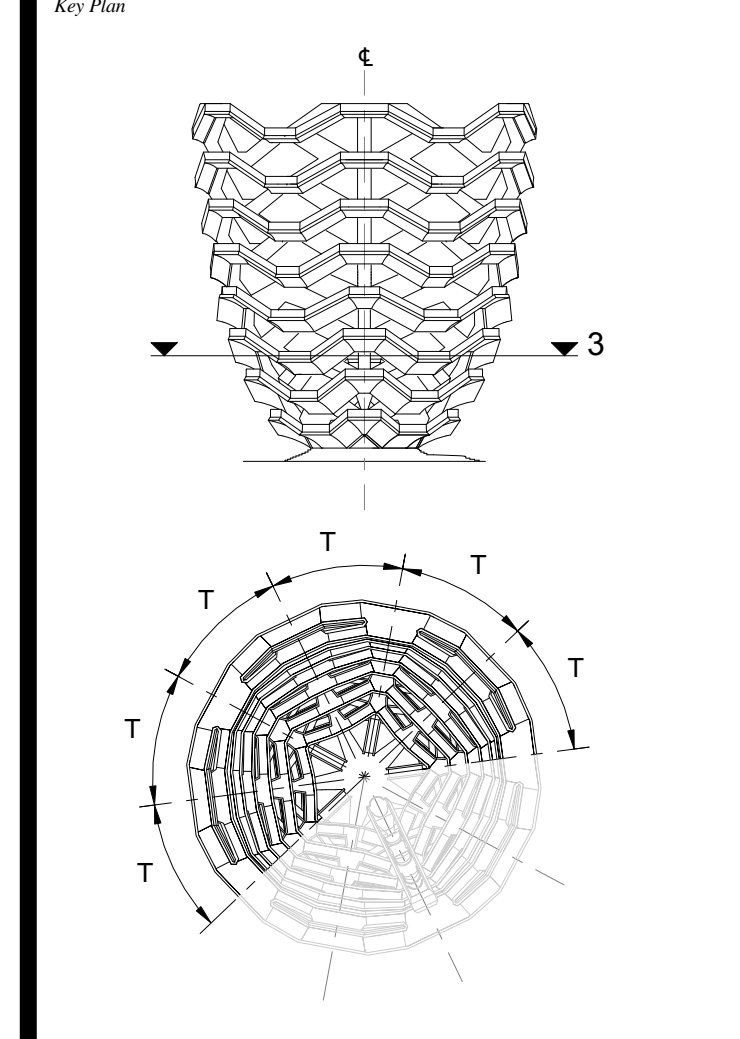


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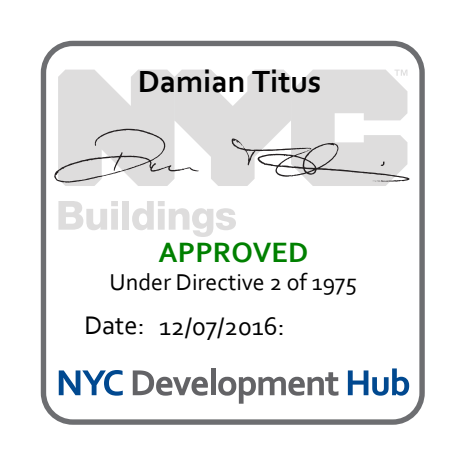
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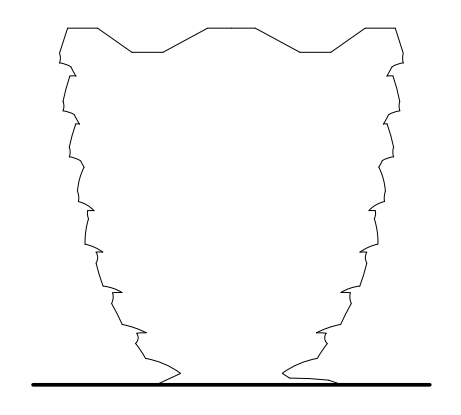
Date: 08/29/14
 Project No: 2298007
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-405

**TYPICAL PLATFORM
LEVEL 3 (DISPLAY 3)**
 Drawing Title
 Project Number
A-405.00



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VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



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 Related Companies
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 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

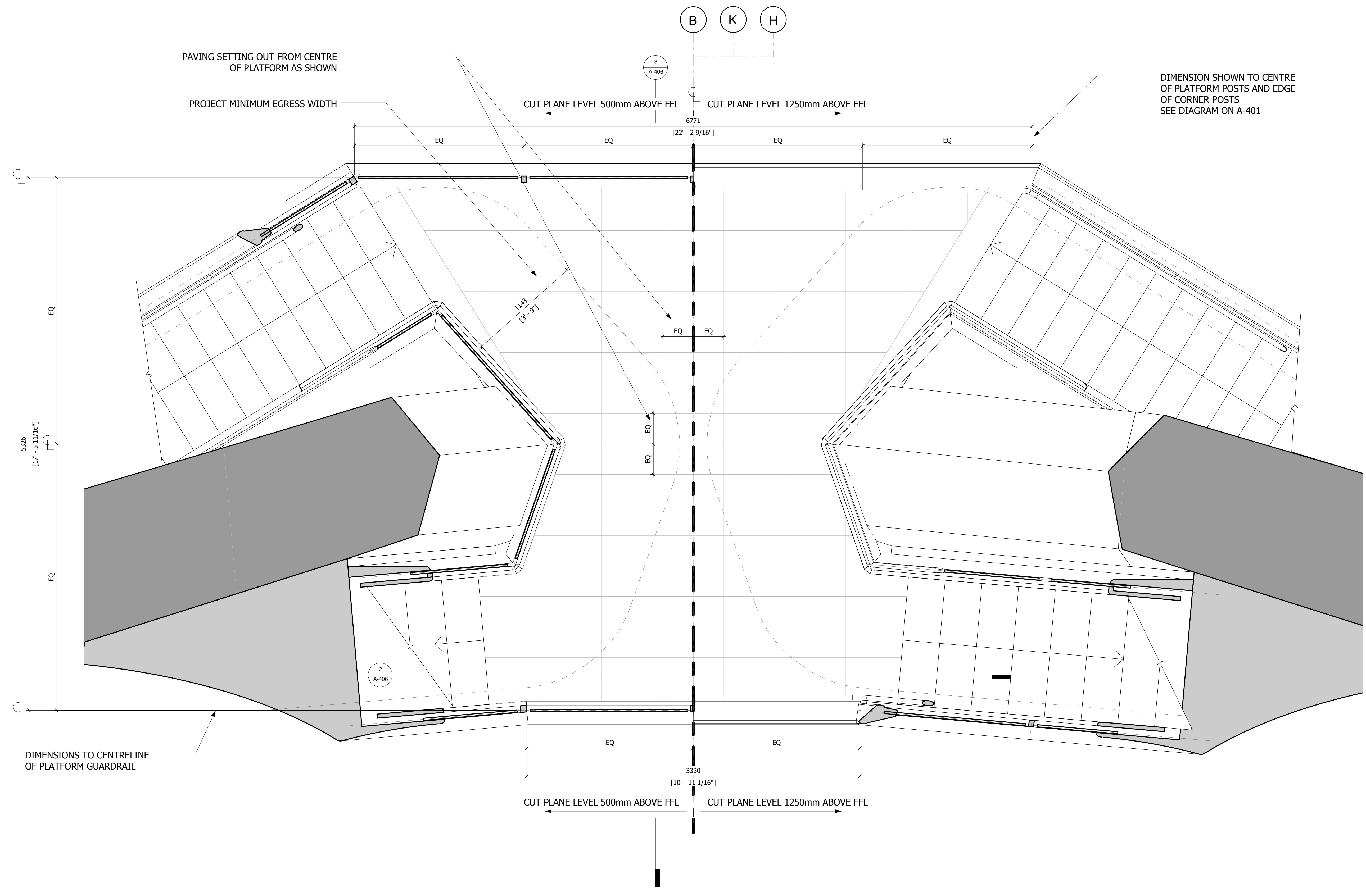
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

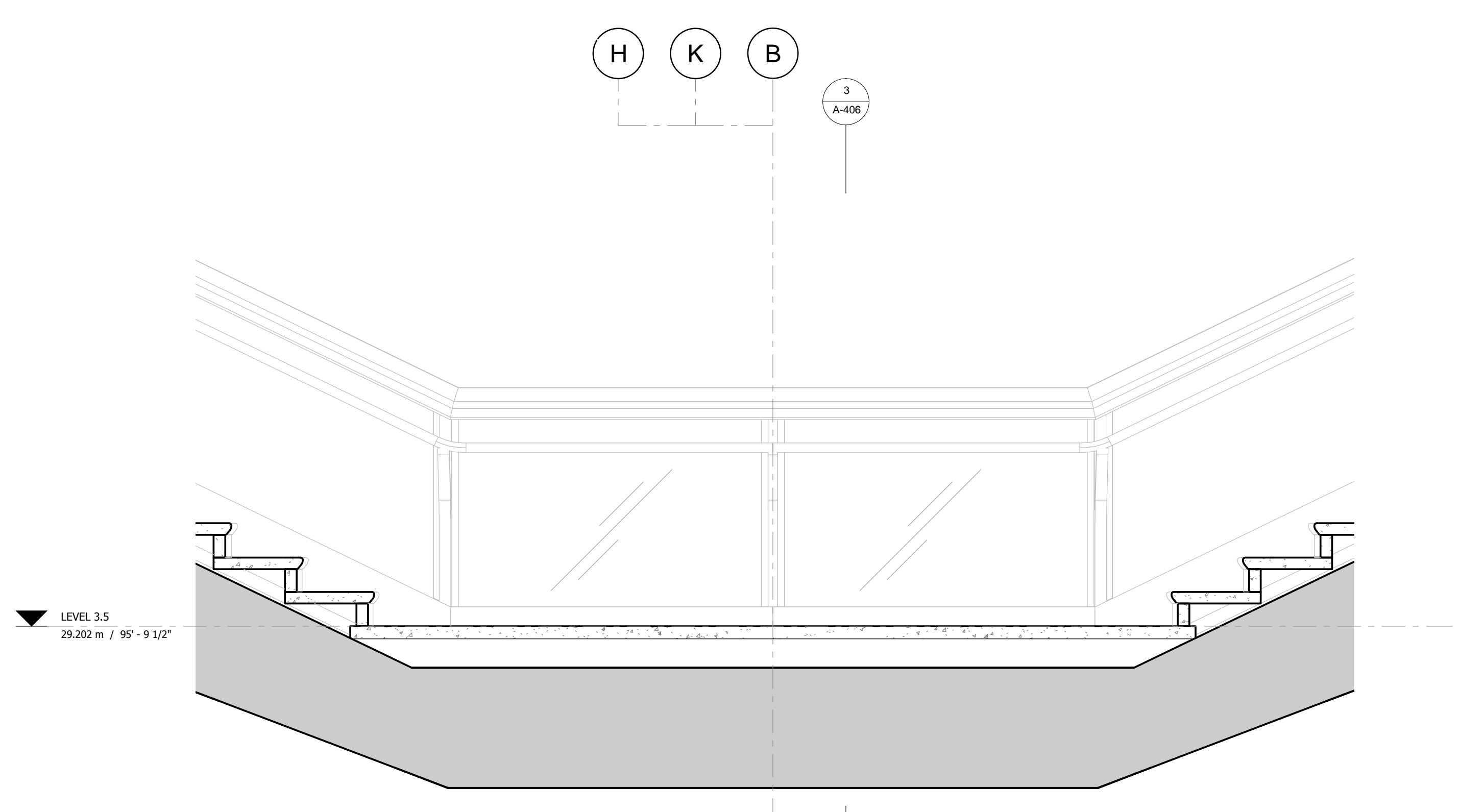
Structural Engineer
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 51 Madison Avenue
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 Tel: 917.661.7800 Fax: 917.661.7801

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 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
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 New York, NY 10005
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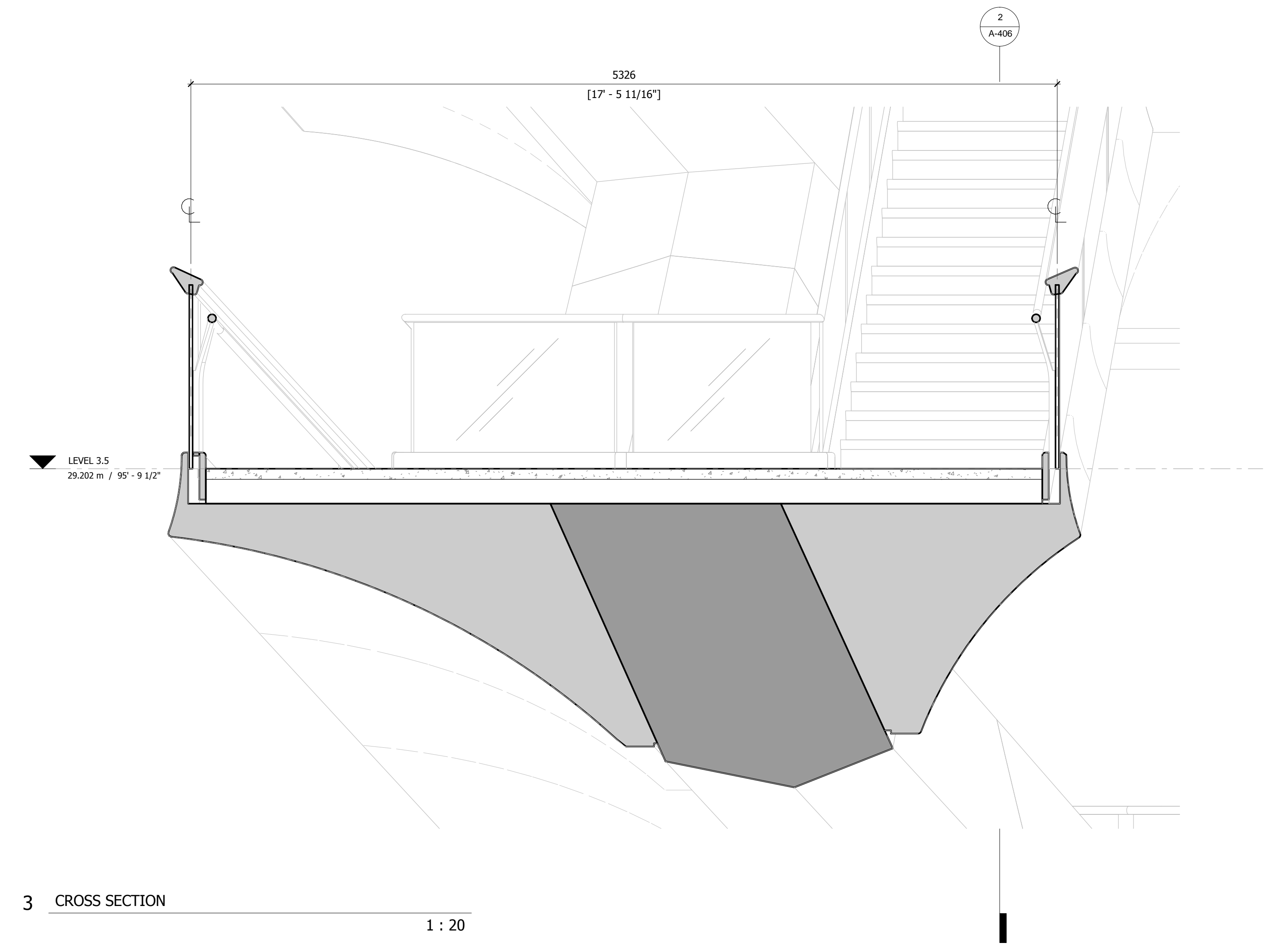
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1 PLAN 1 : 20

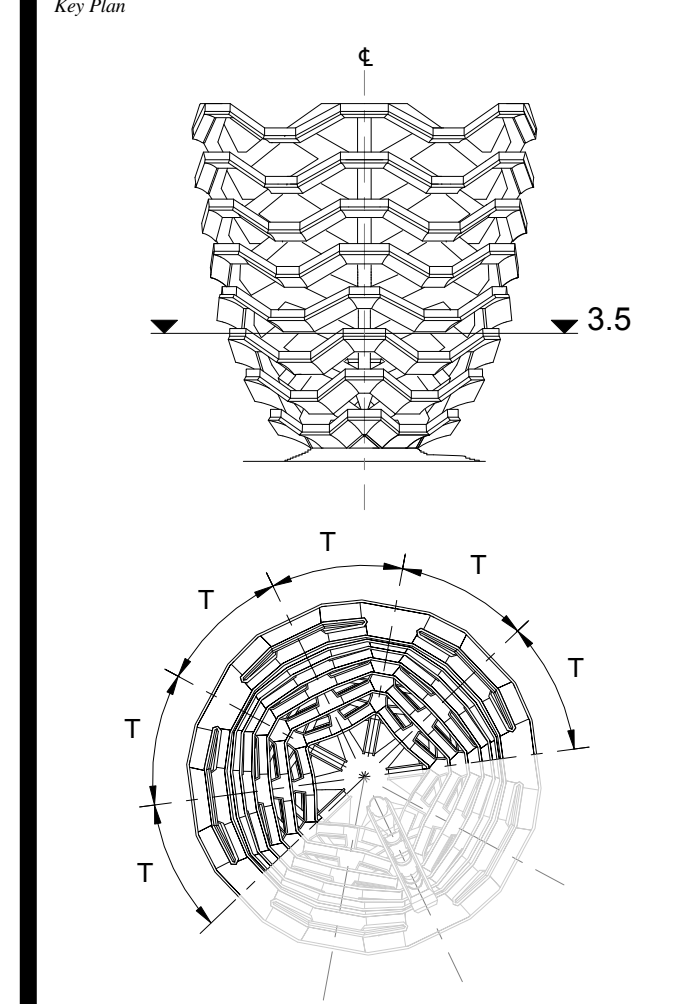


2 LONG SECTION 1 : 20



3 CROSS SECTION 1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

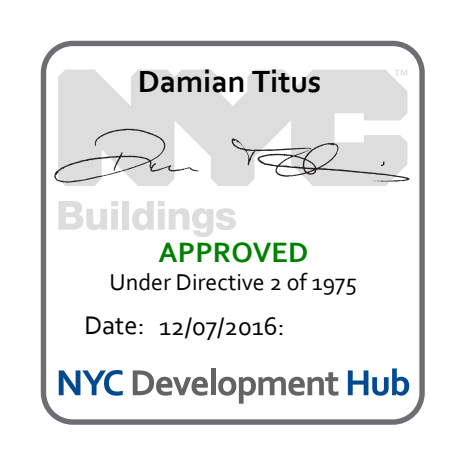


Date: 08/29/14
 Project No: 2298407
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-406

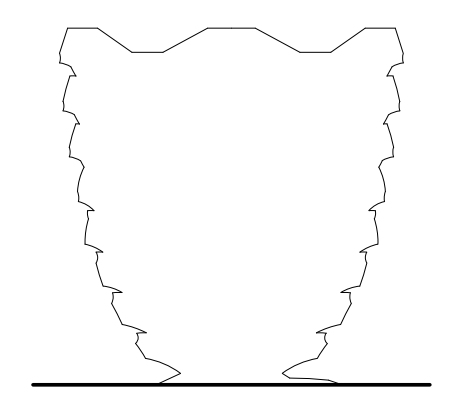
**TYPICAL PLATFORM
LEVEL 3.5 (DISPLAY 3)**

Sheet Number
A-406.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

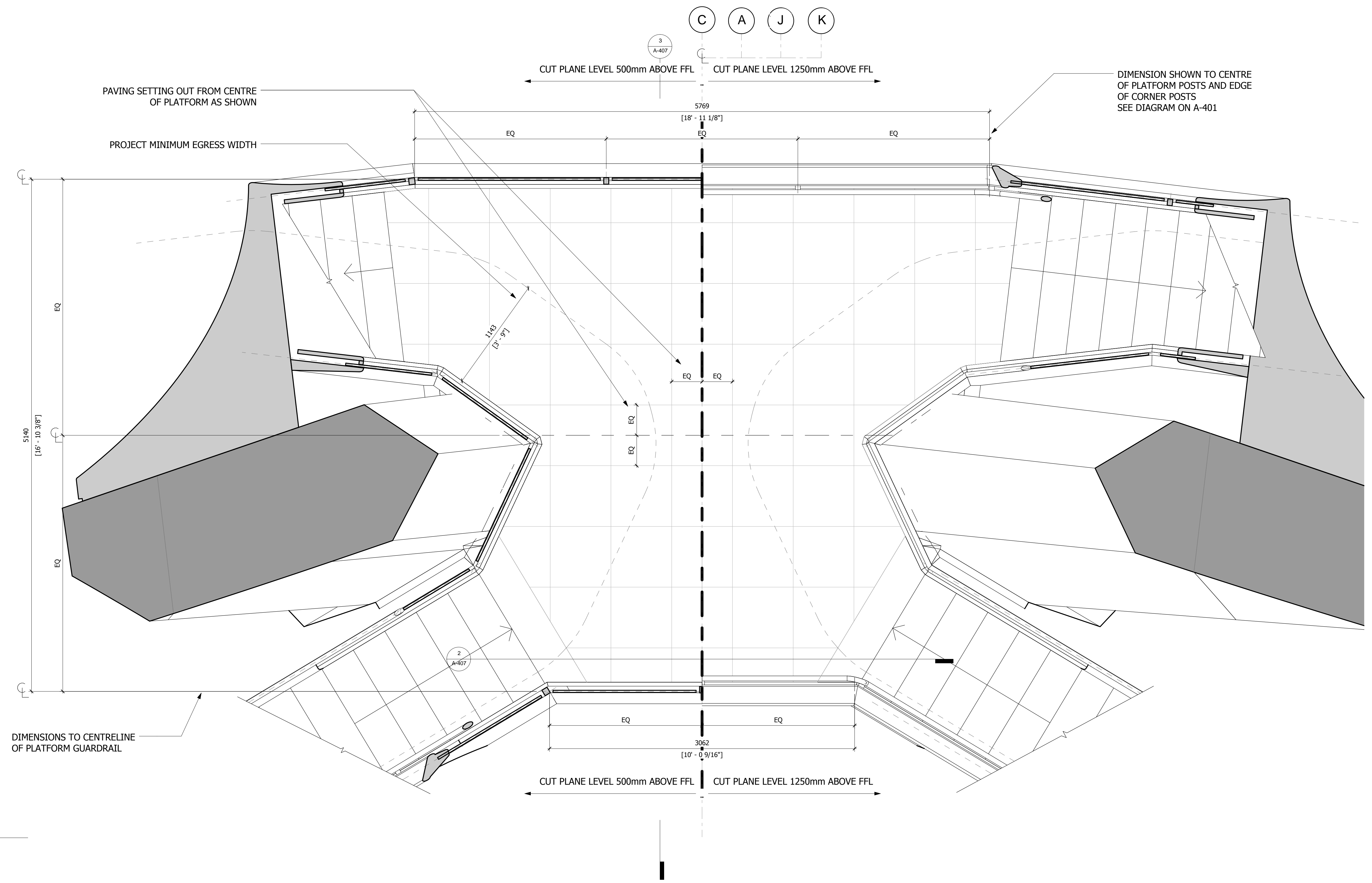
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

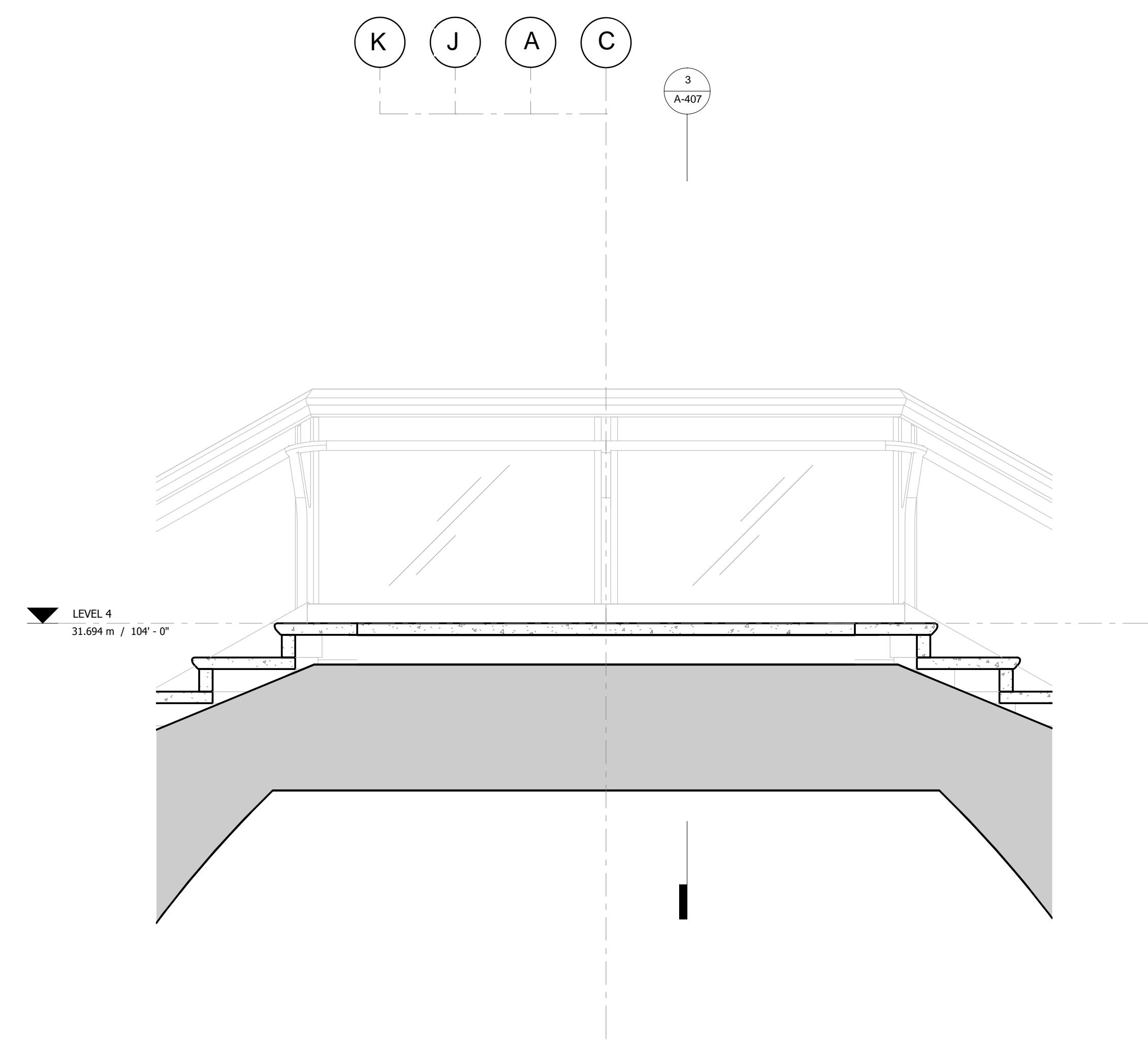
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

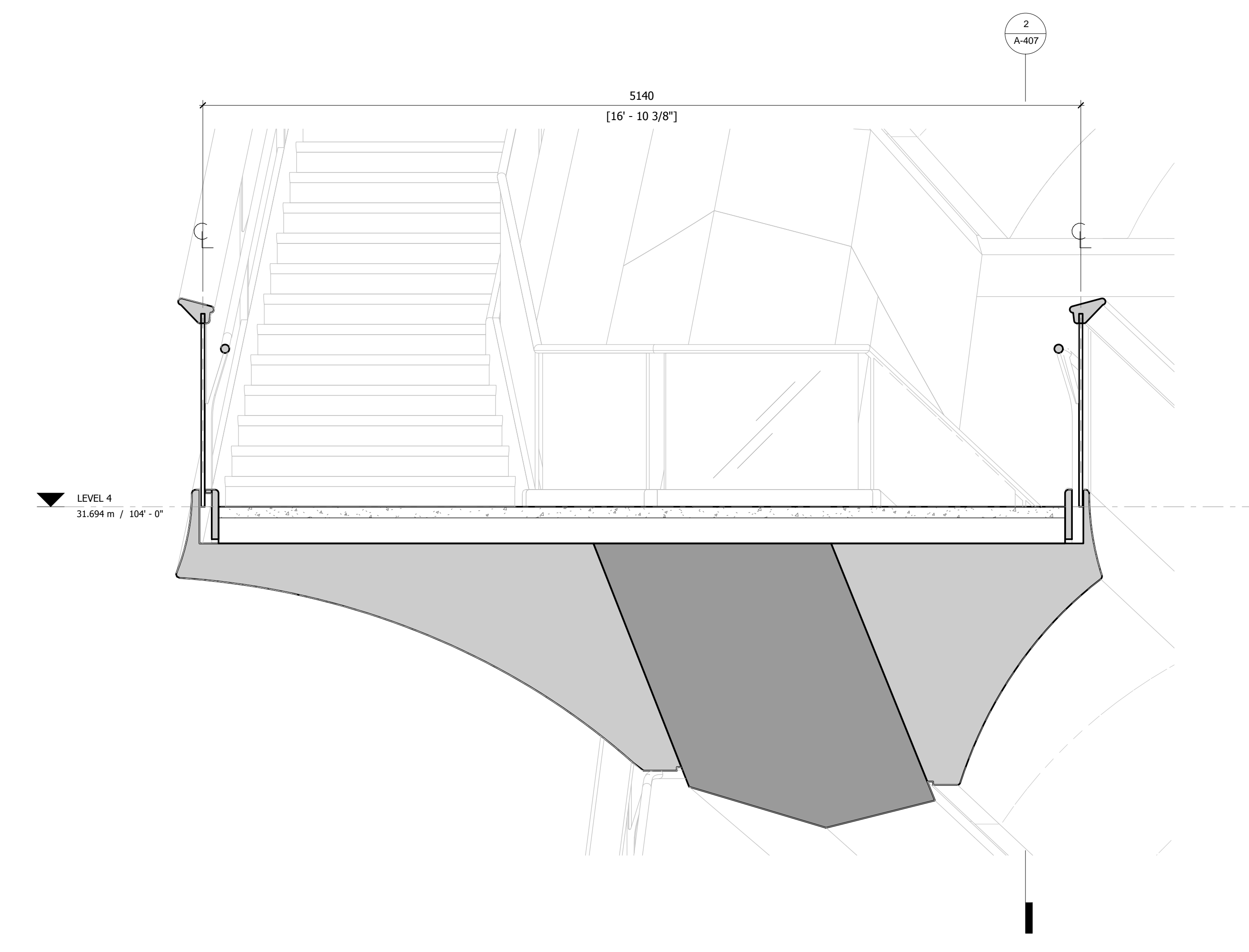
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1 PLAN 1 : 20

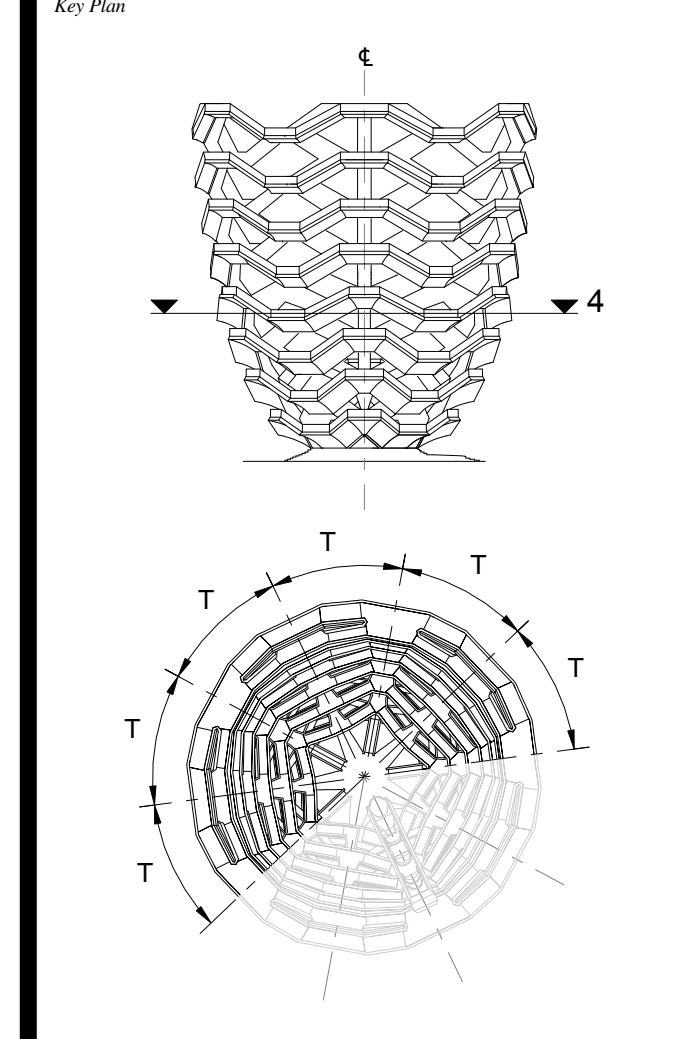


2 LONG SECTION 1 : 20



3 CROSS SECTION 1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

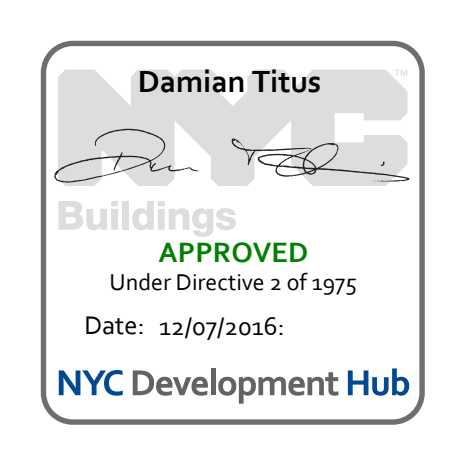


Date: 08/29/14
 Project No: 2298407
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-407

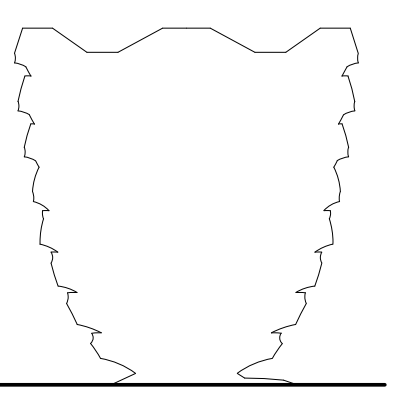
**TYPICAL PLATFORM
LEVEL 4 (DISPLAY 4)**

Sheet Number
A-407.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

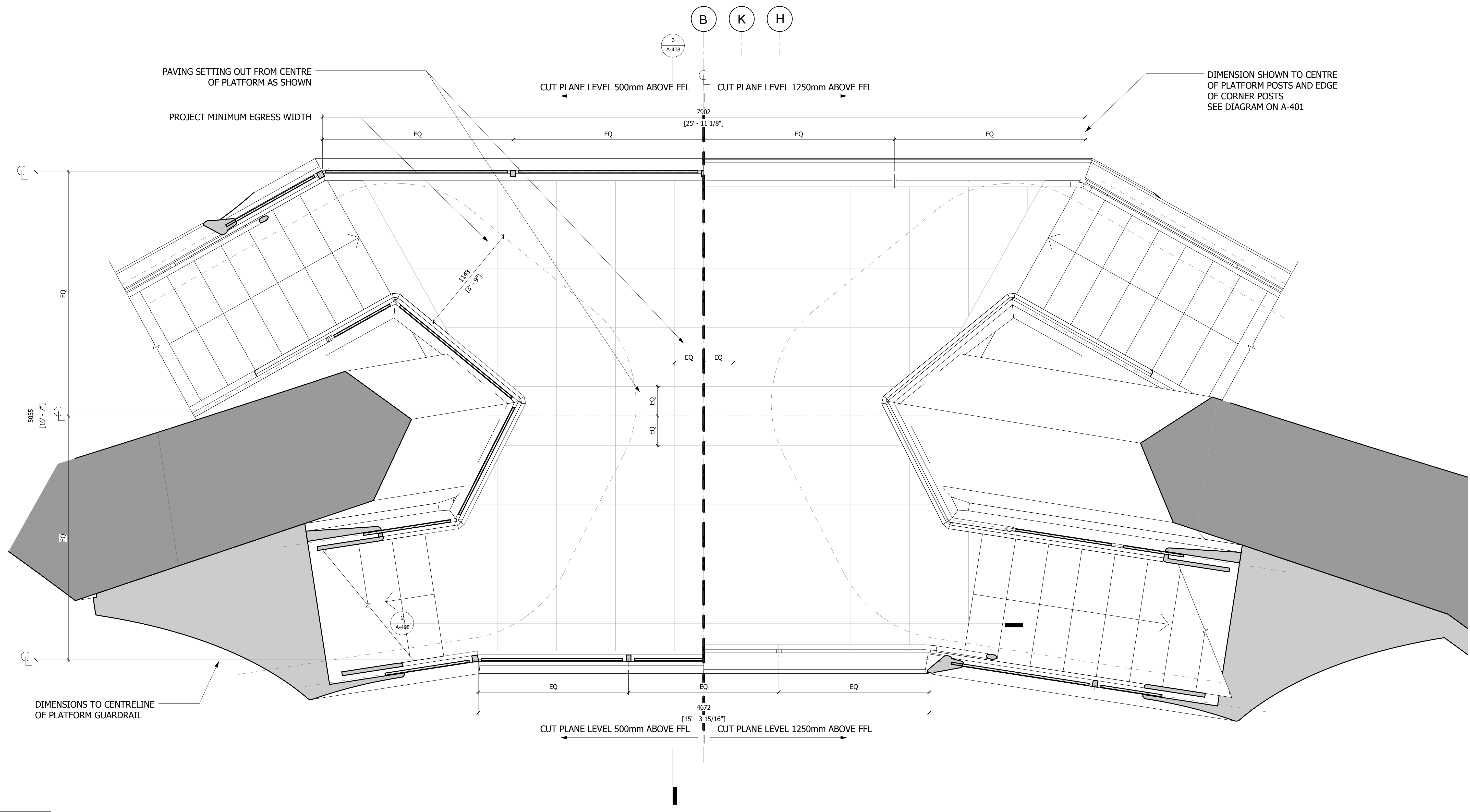
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

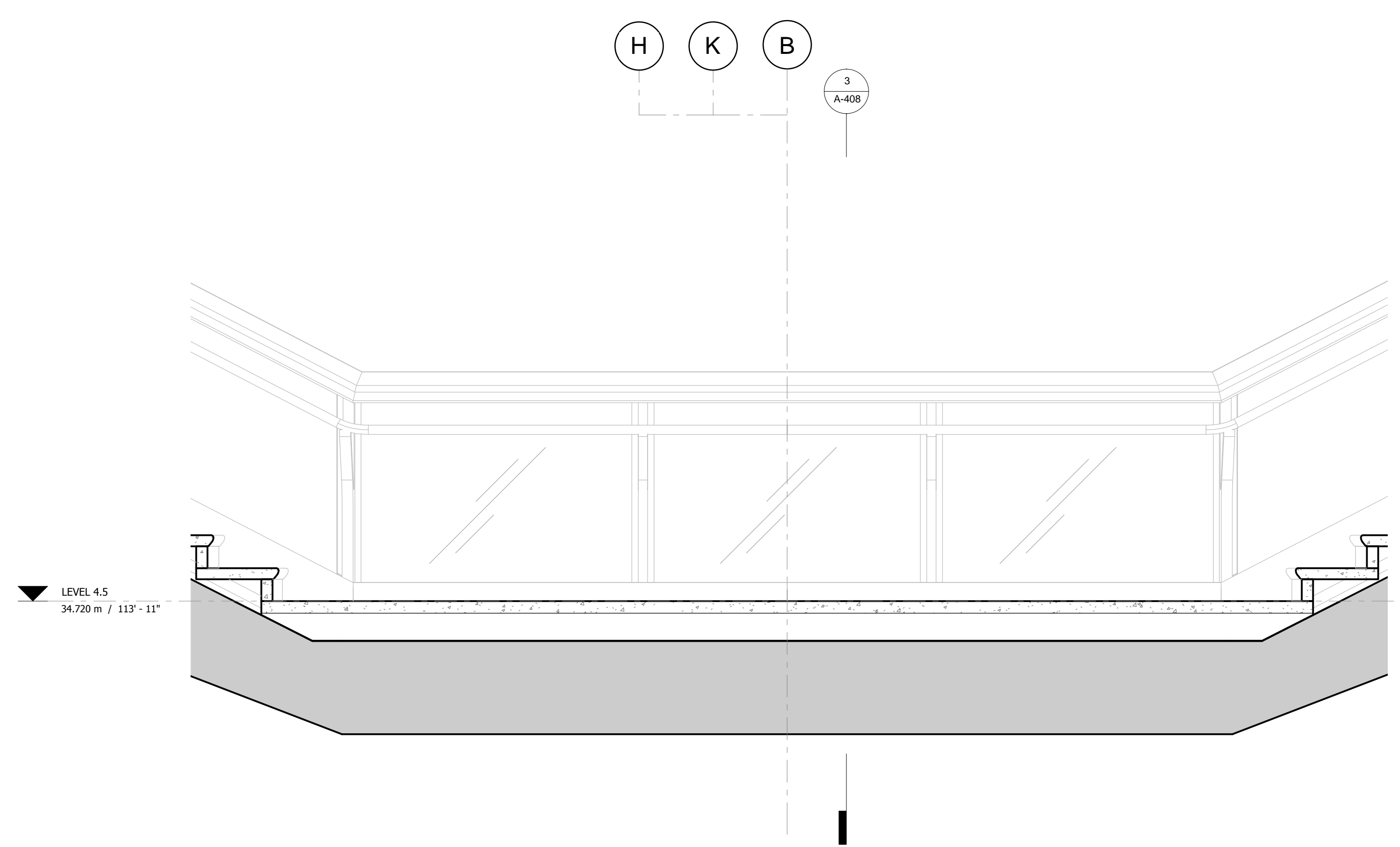
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 West Street
 New York, NY 10005
 Tel: 212.896.3000

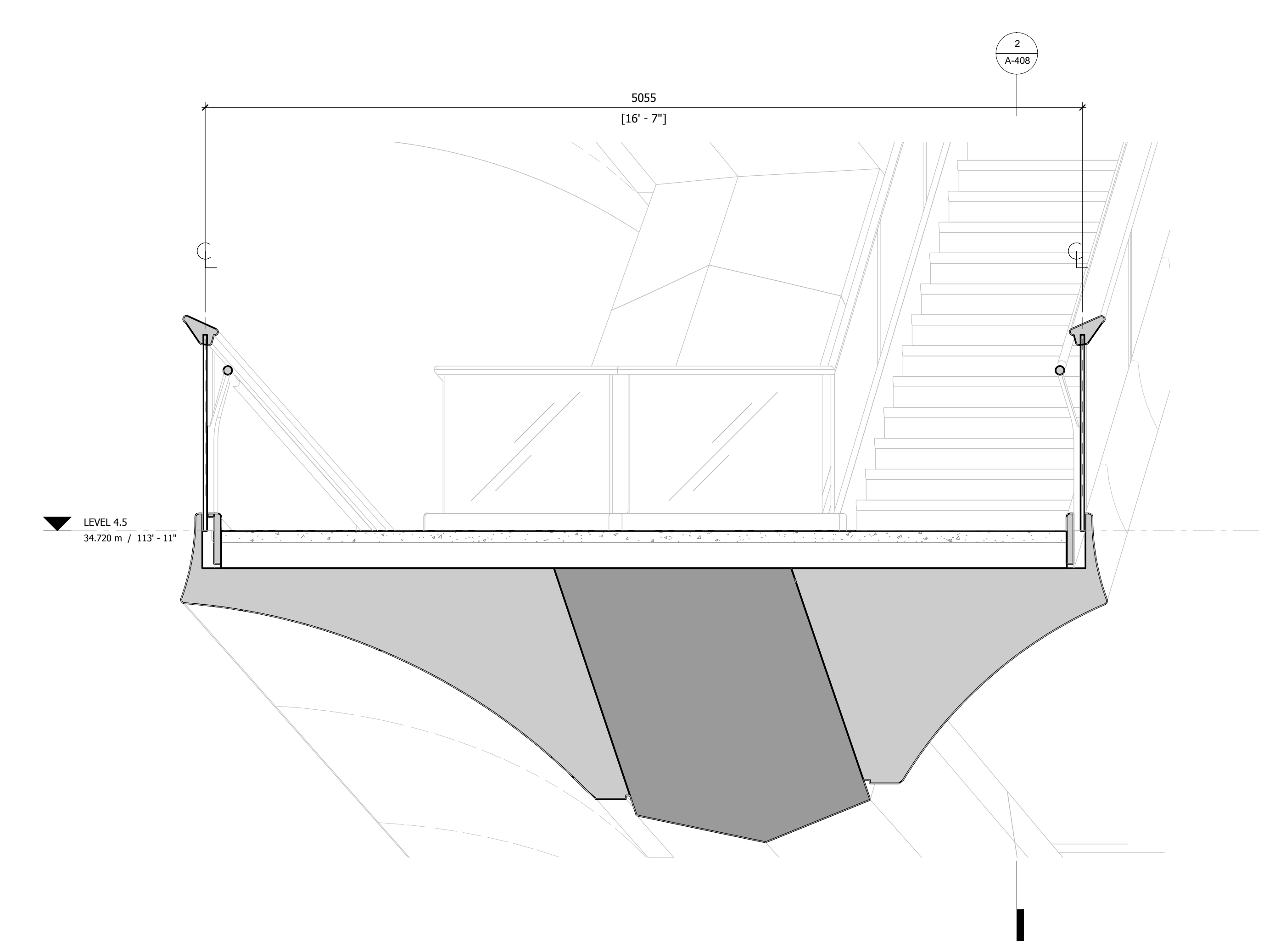
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REPRODUCE**



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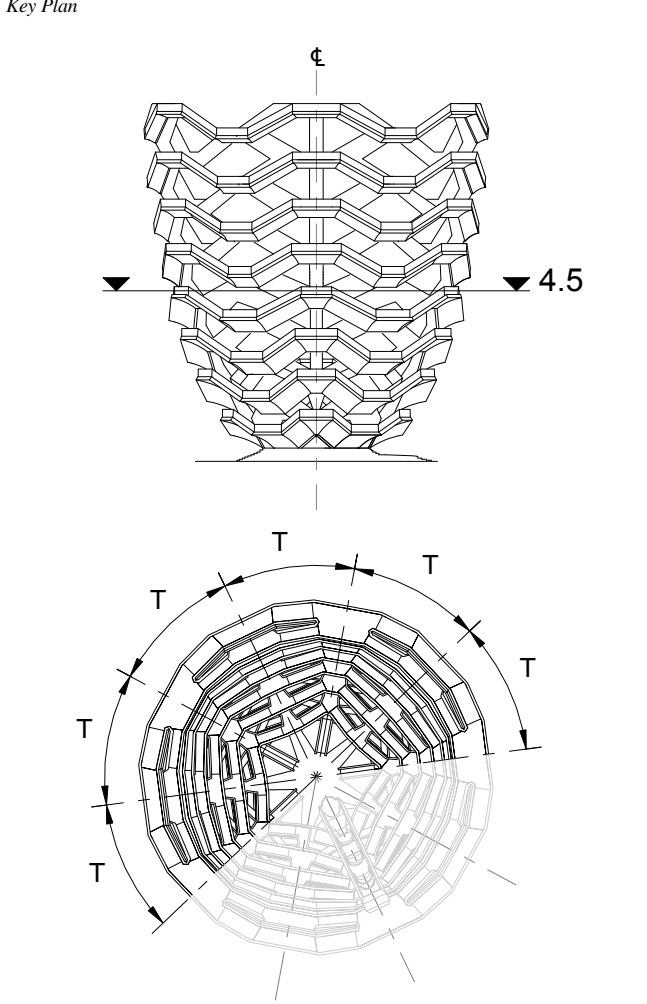


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3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

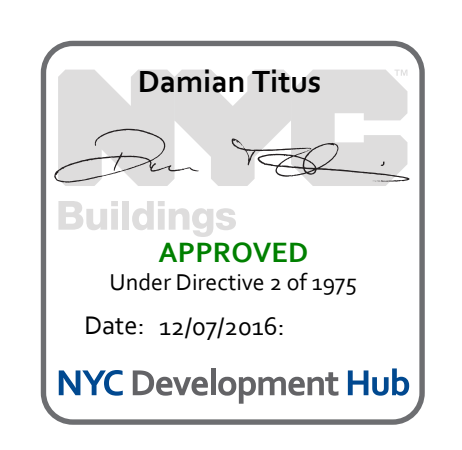


Date: 05/15/14
 Project No: 2298002
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-408

HYE-VS-A-408

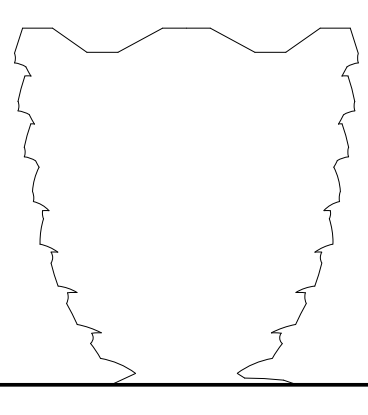
**TYPICAL PLATFORM
LEVEL 4.5 (DISPLAY 4)**

Sheet Number
A-408.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

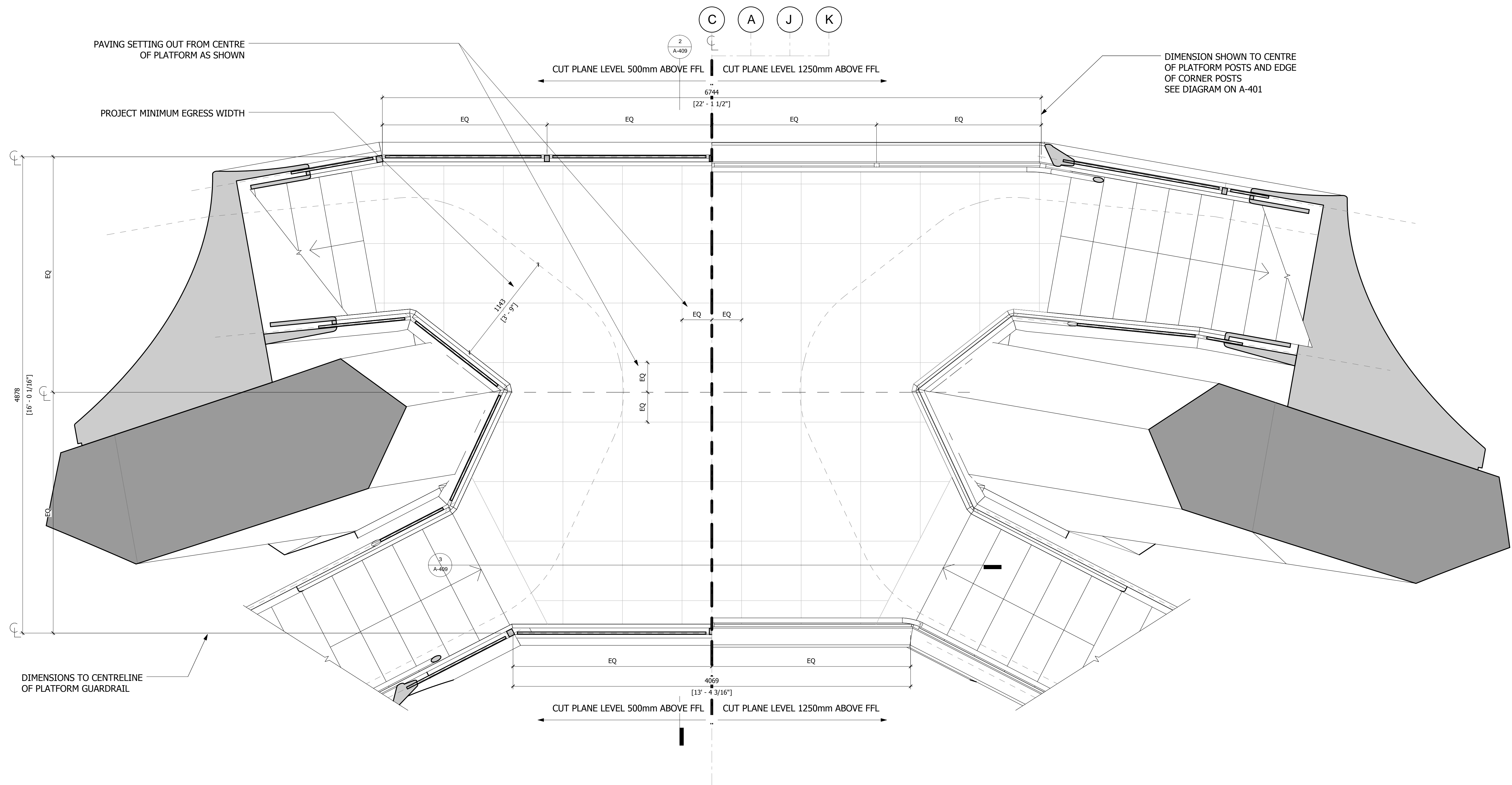
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

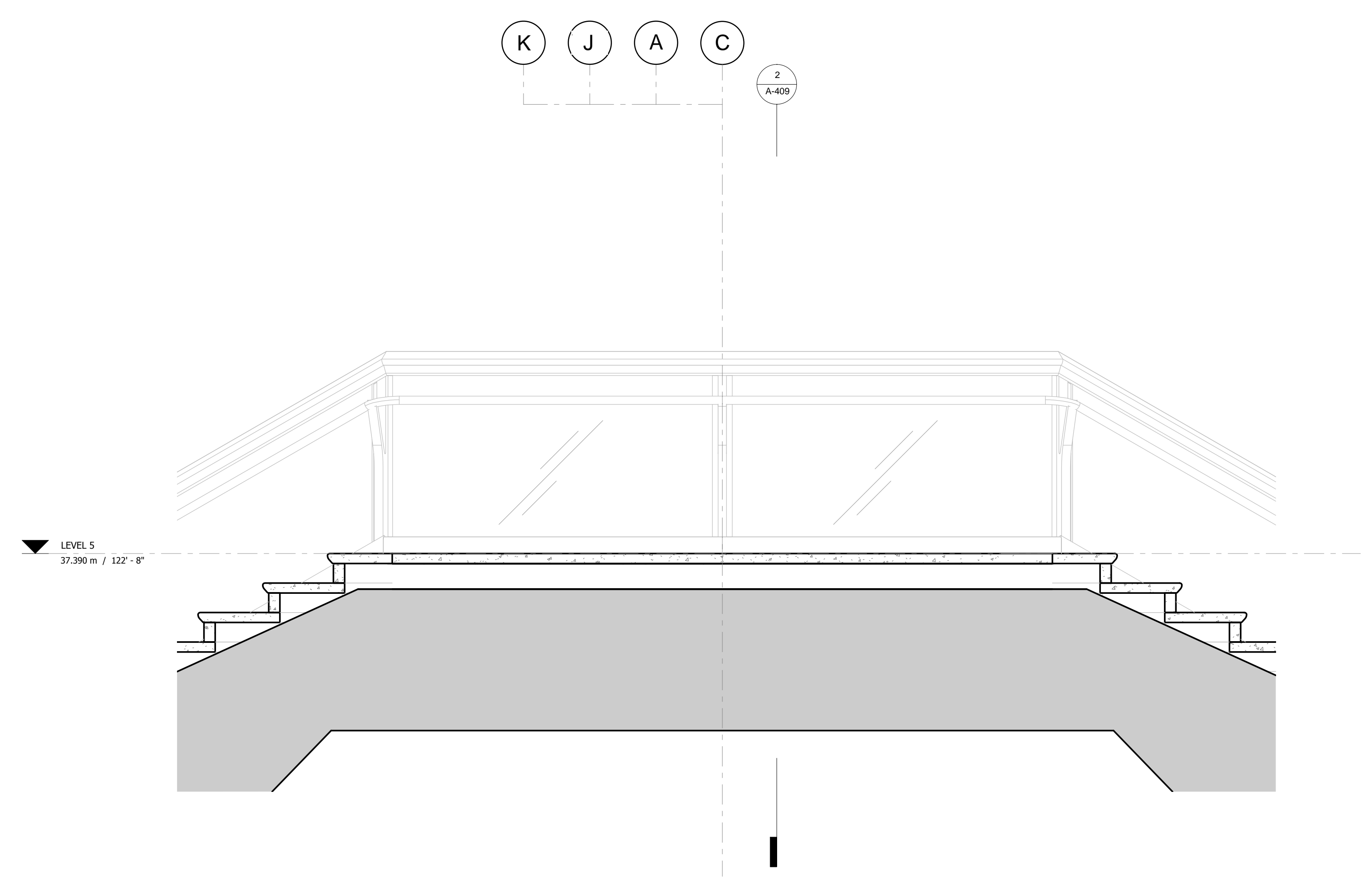
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

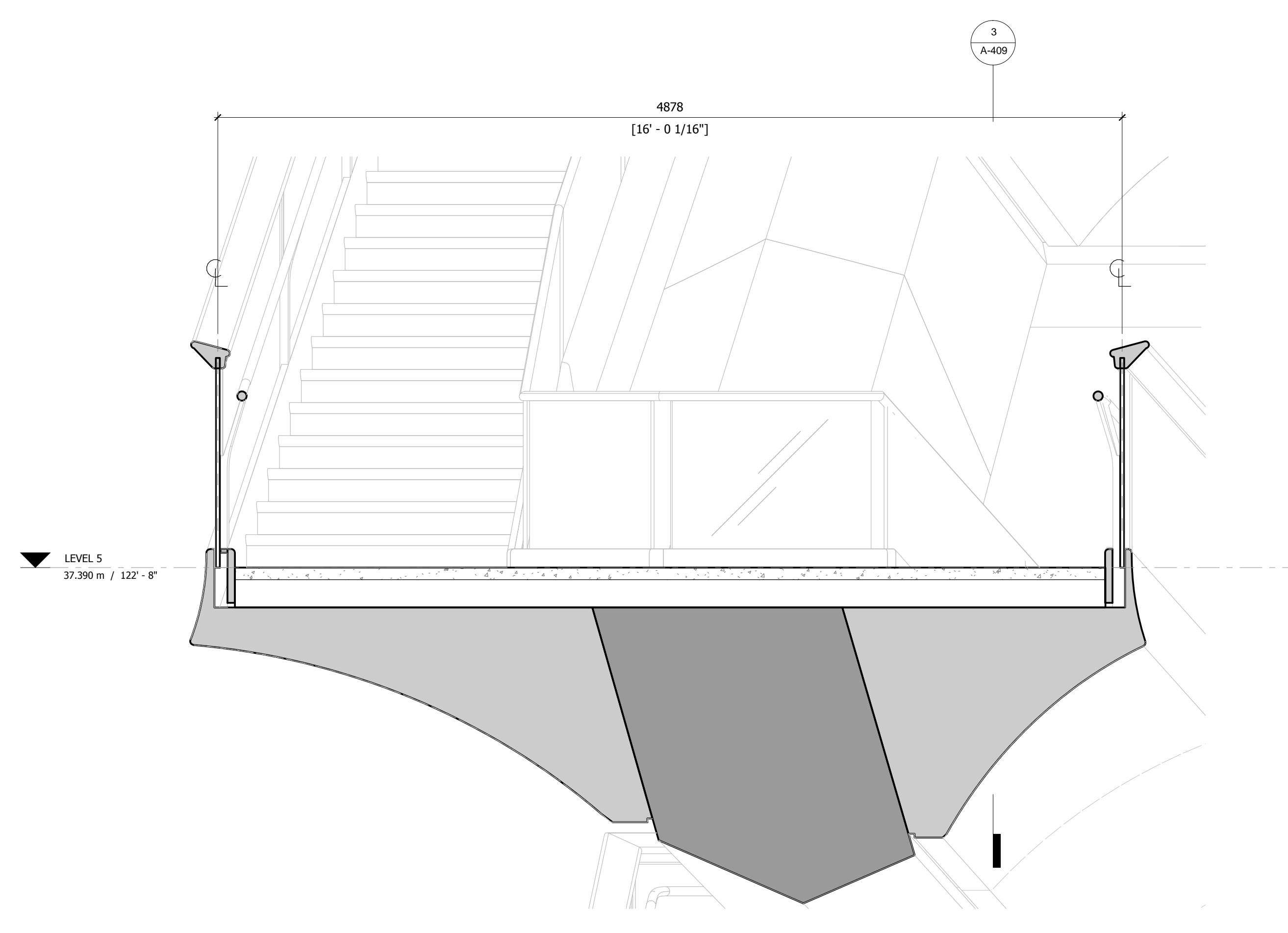
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1 PLAN
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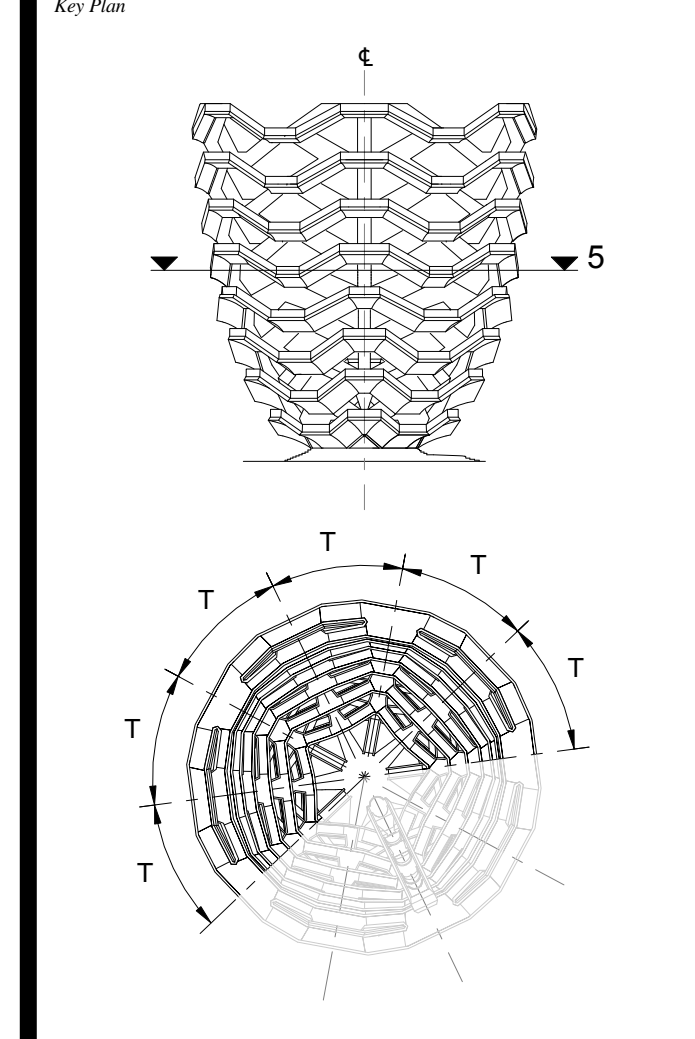


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1 : 20



2 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Issue Date

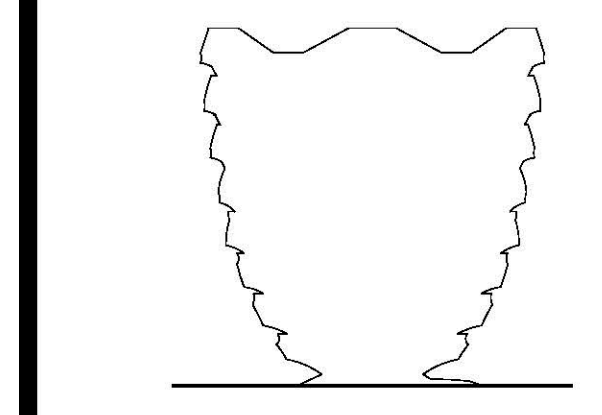


Date: 08/29/14
 Project No: 2298002
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-409

Damian Titus
 Buildings
 APPROVED
 Under Directive 2 of 1975
 Date: 11/07/2016
 NYC Development Hub

**TYPICAL PLATFORM
LEVEL 5 (DISPLAY 5)**

Sheet Number:
A-409.00



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

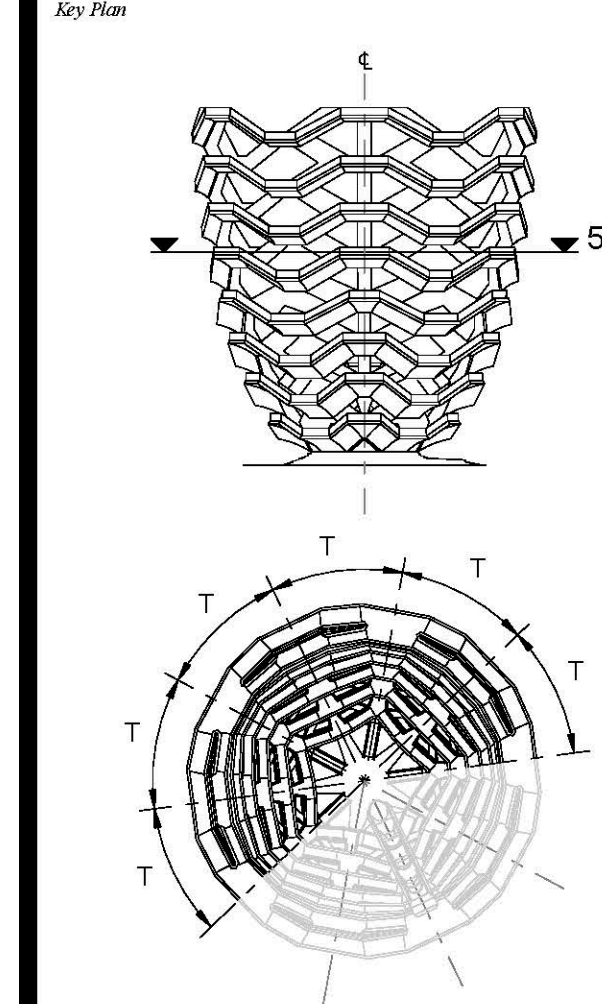
Design Architect
 Heatherwick Studio
 256-364 Greys Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

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 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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3	D.O.B. BUILDING PERMIT FILING	12/02/2016
1	D.O.B. BUILDING PERMIT FILING	05/20/2016



Date: 08/29/14
 Project No: 2298-02
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-410

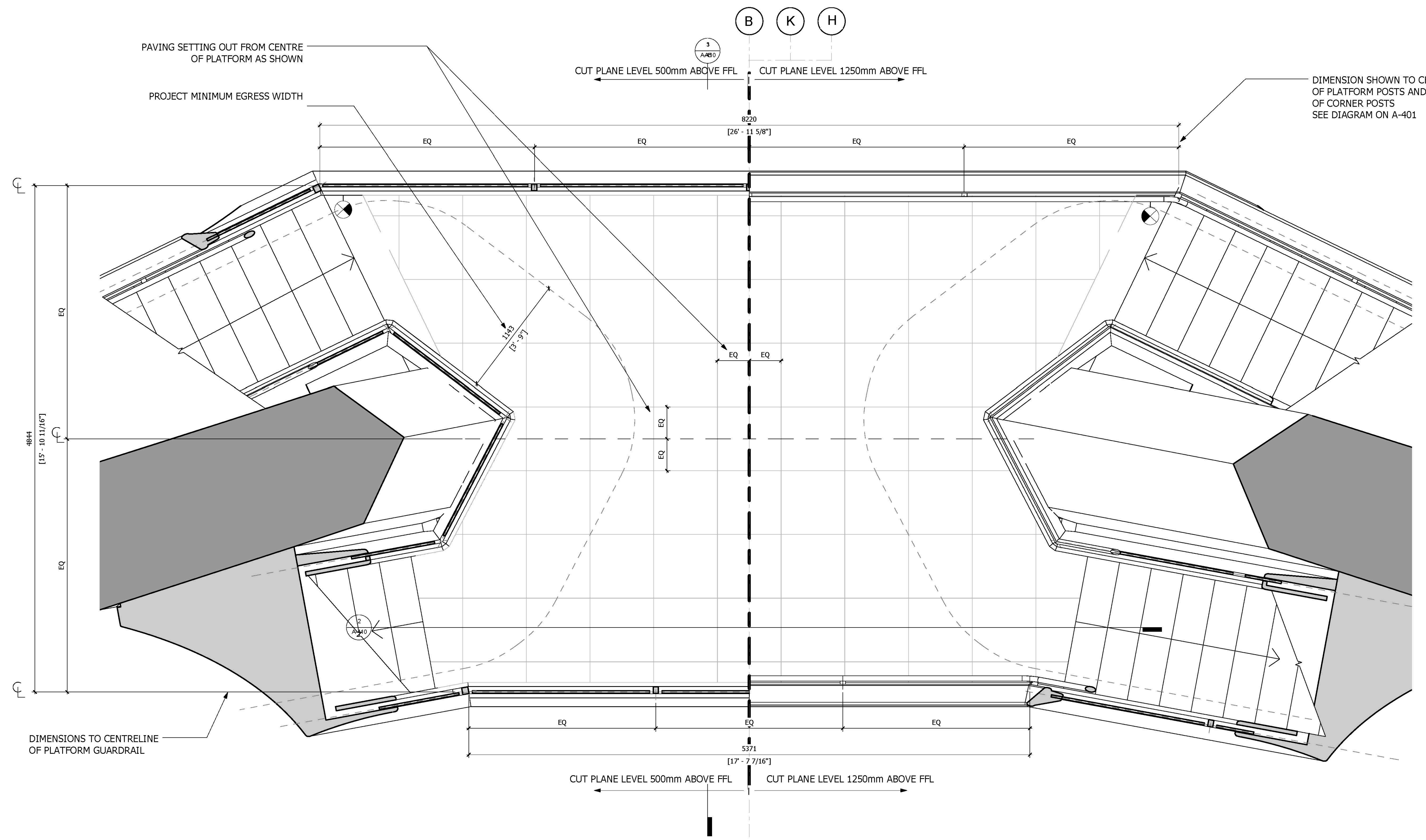
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 LEVEL 5.5 (DISPLAY 5)**

Drawing Number
A-410.00

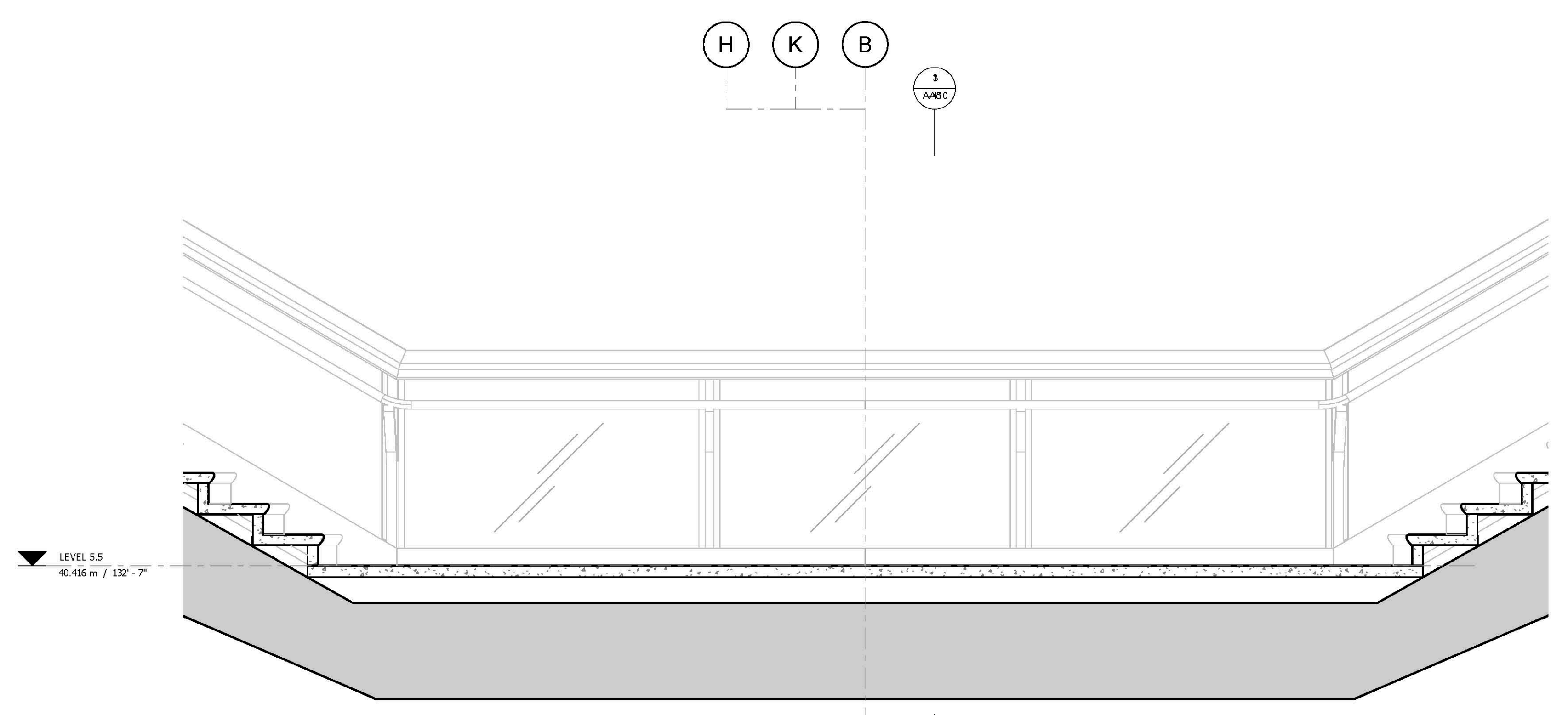
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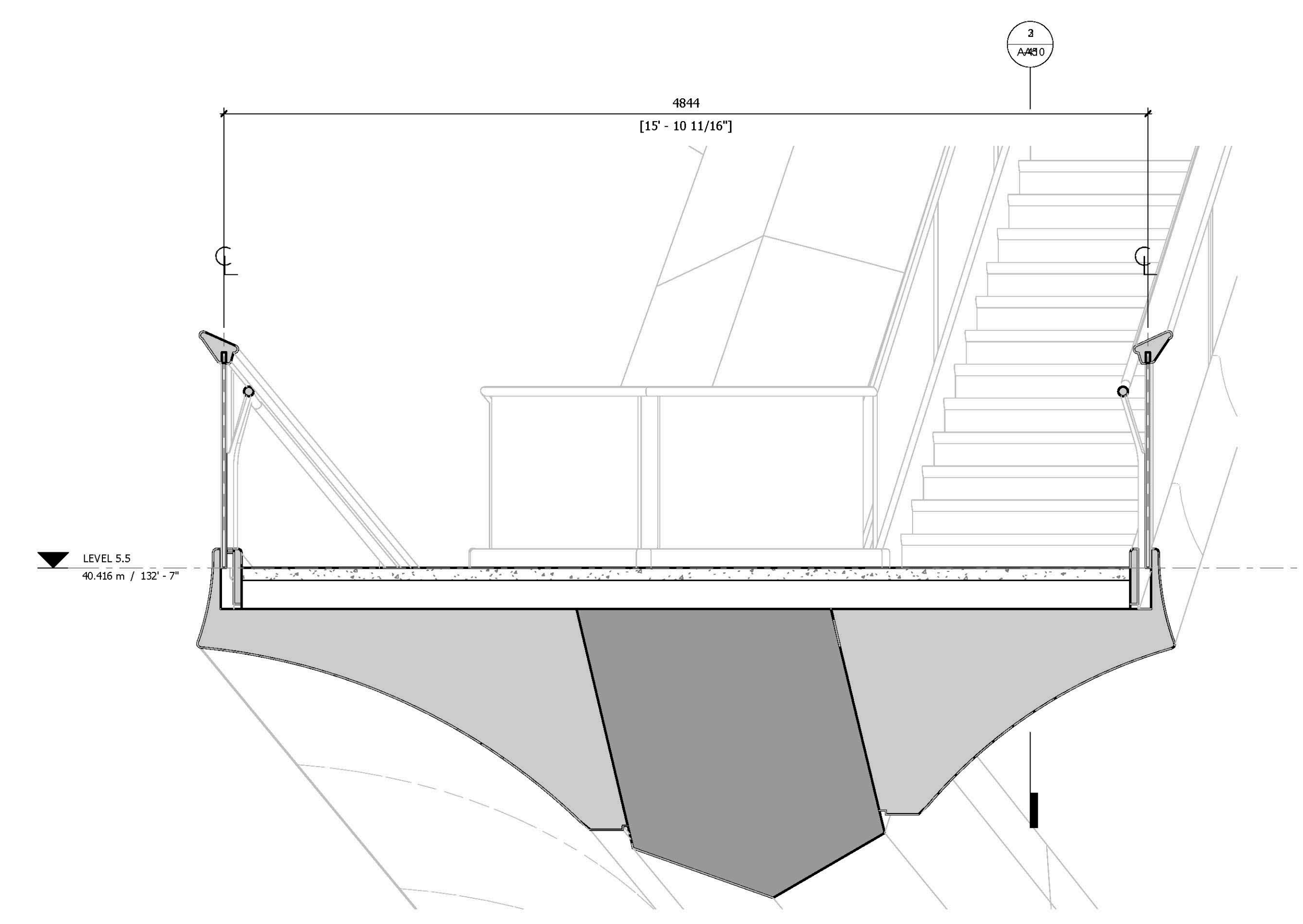
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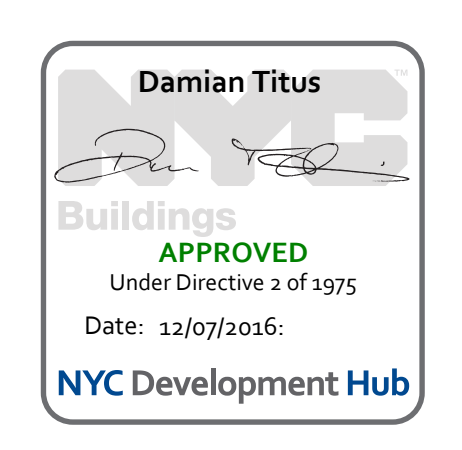
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2 LONG SECTION
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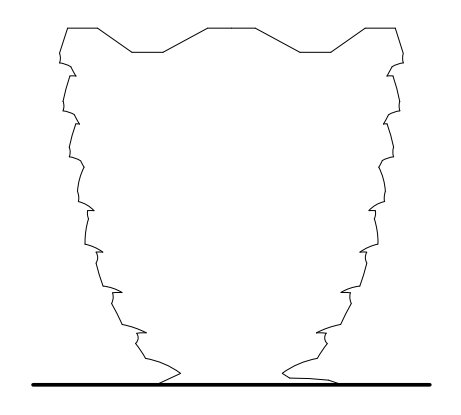


3 CROSS SECTION
 1 : 20



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

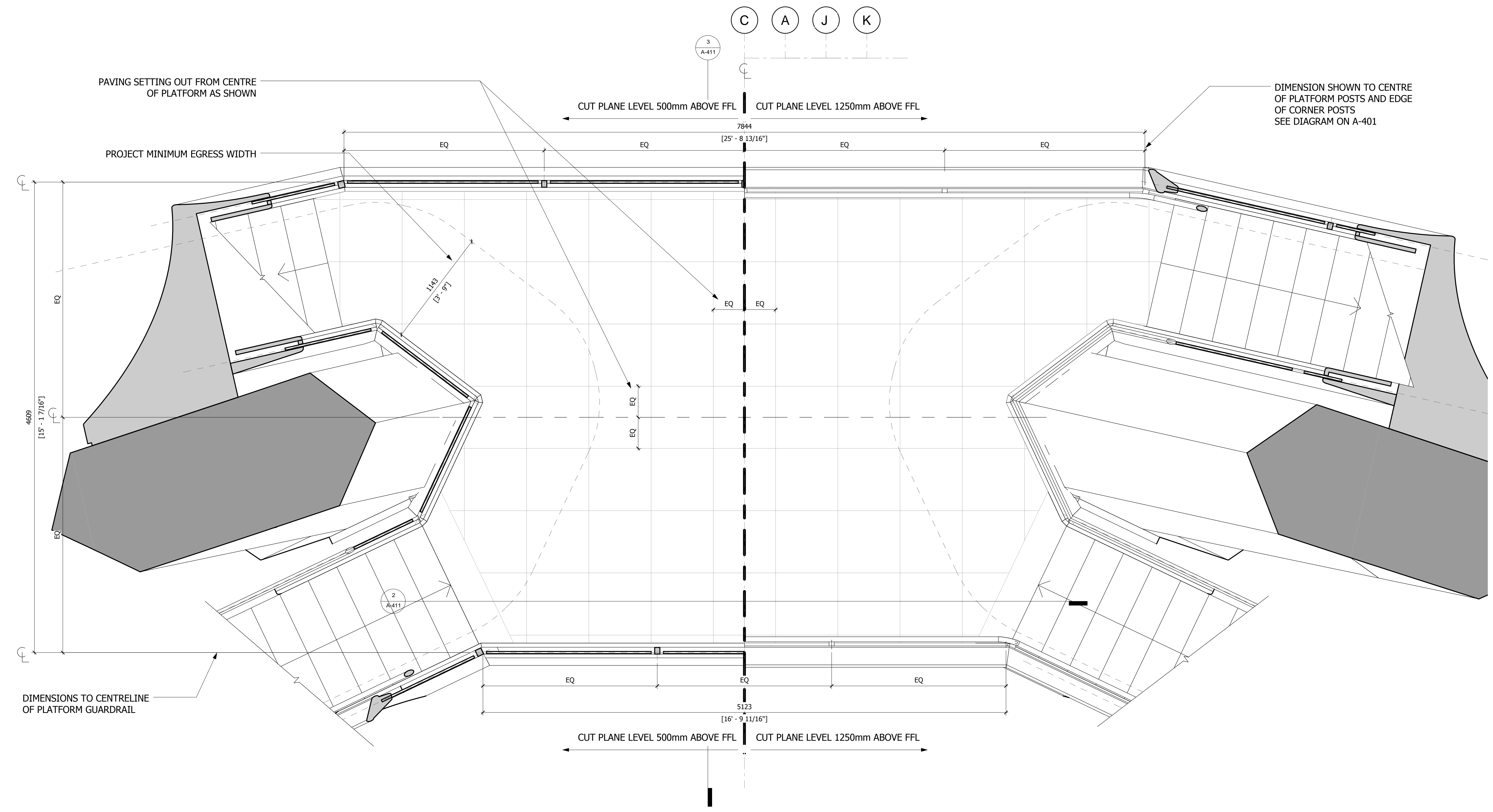
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

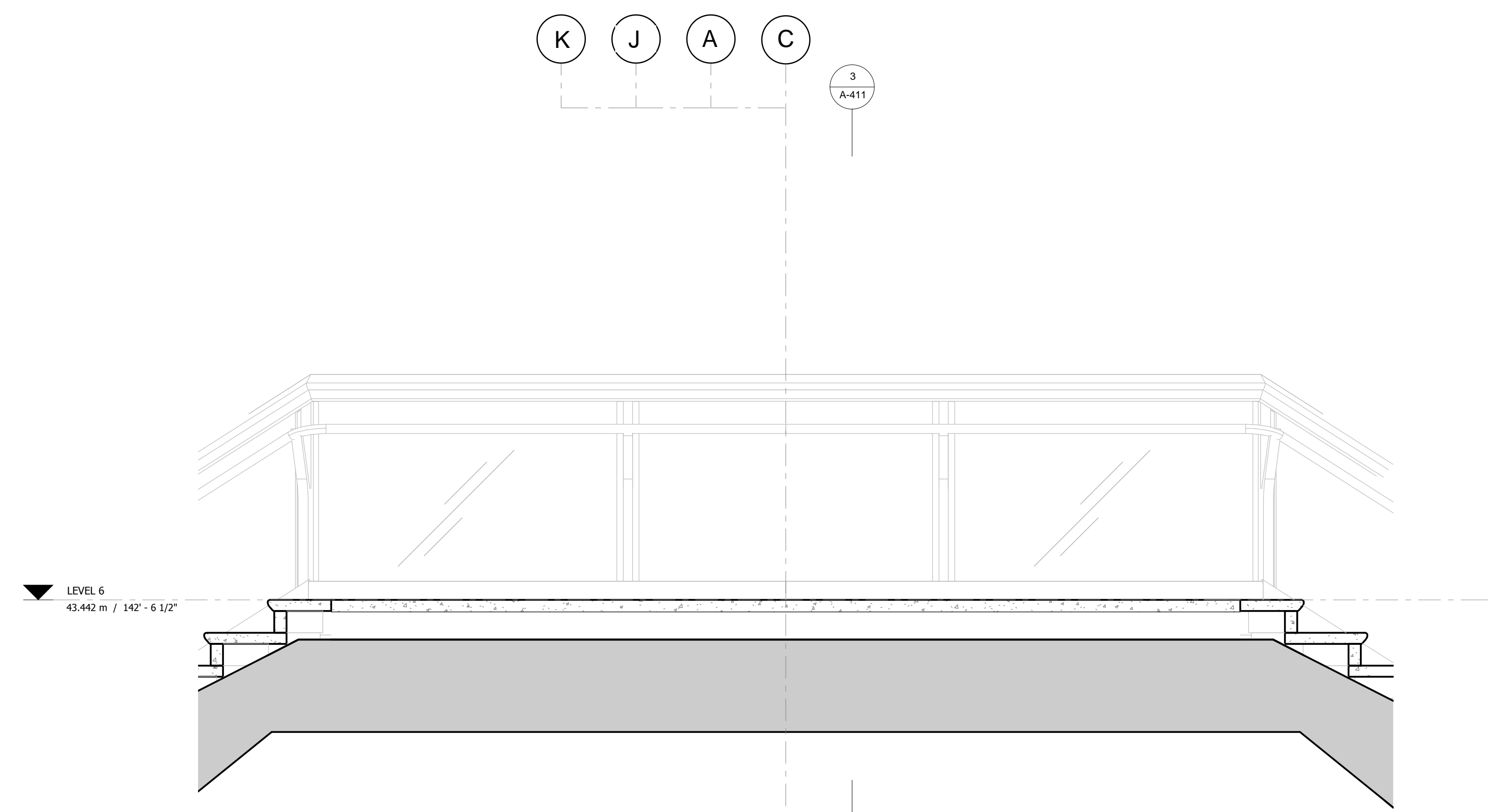
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

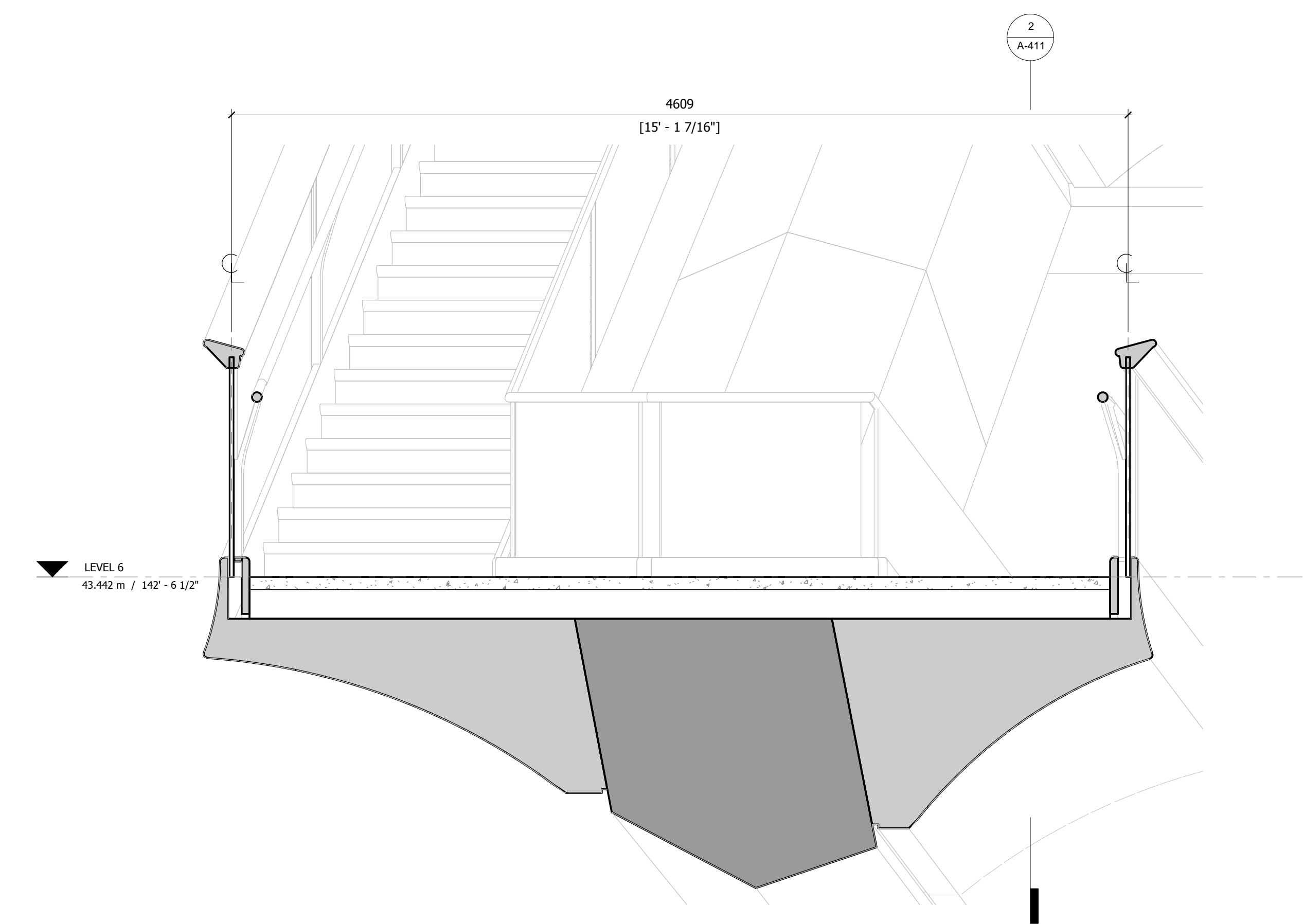
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1 PLAN
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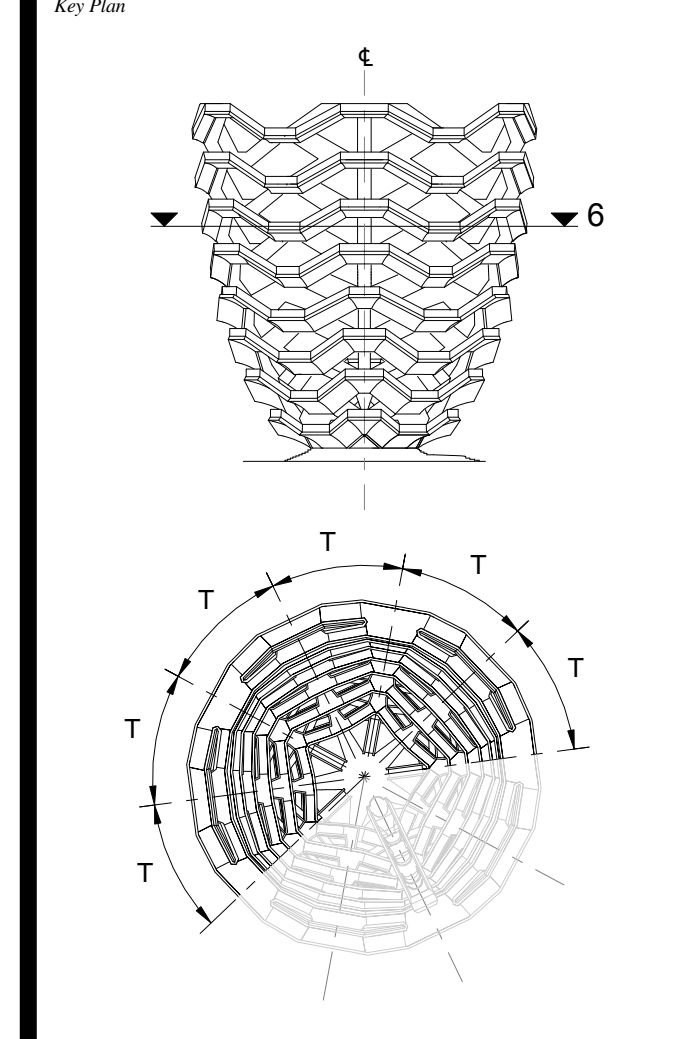


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3 CROSS SECTION
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D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Issue Date

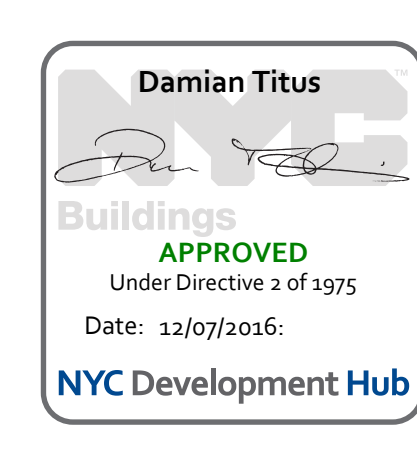


Date: 08/29/14
 Project No: 2208407
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-411

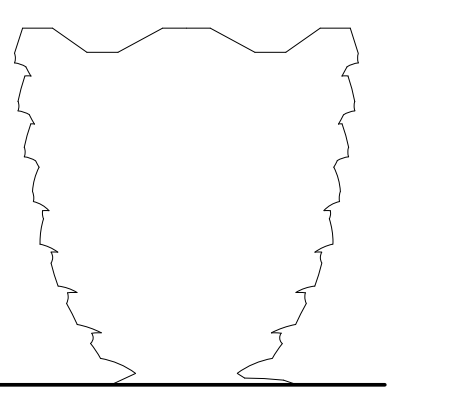
**TYPICAL PLATFORM
LEVEL 6 (DISPLAY 6)**

Sheet Number
A-411.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

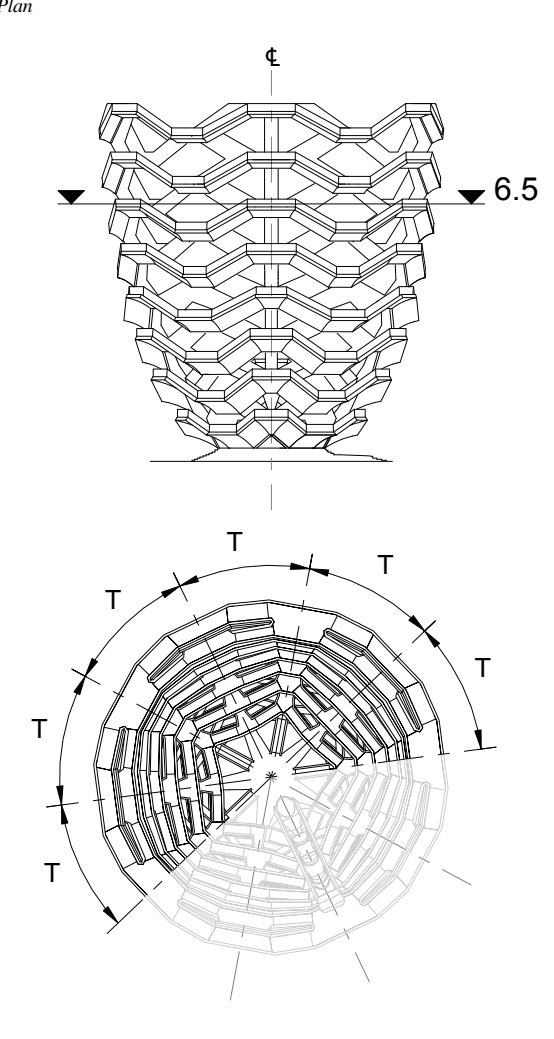
Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
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Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

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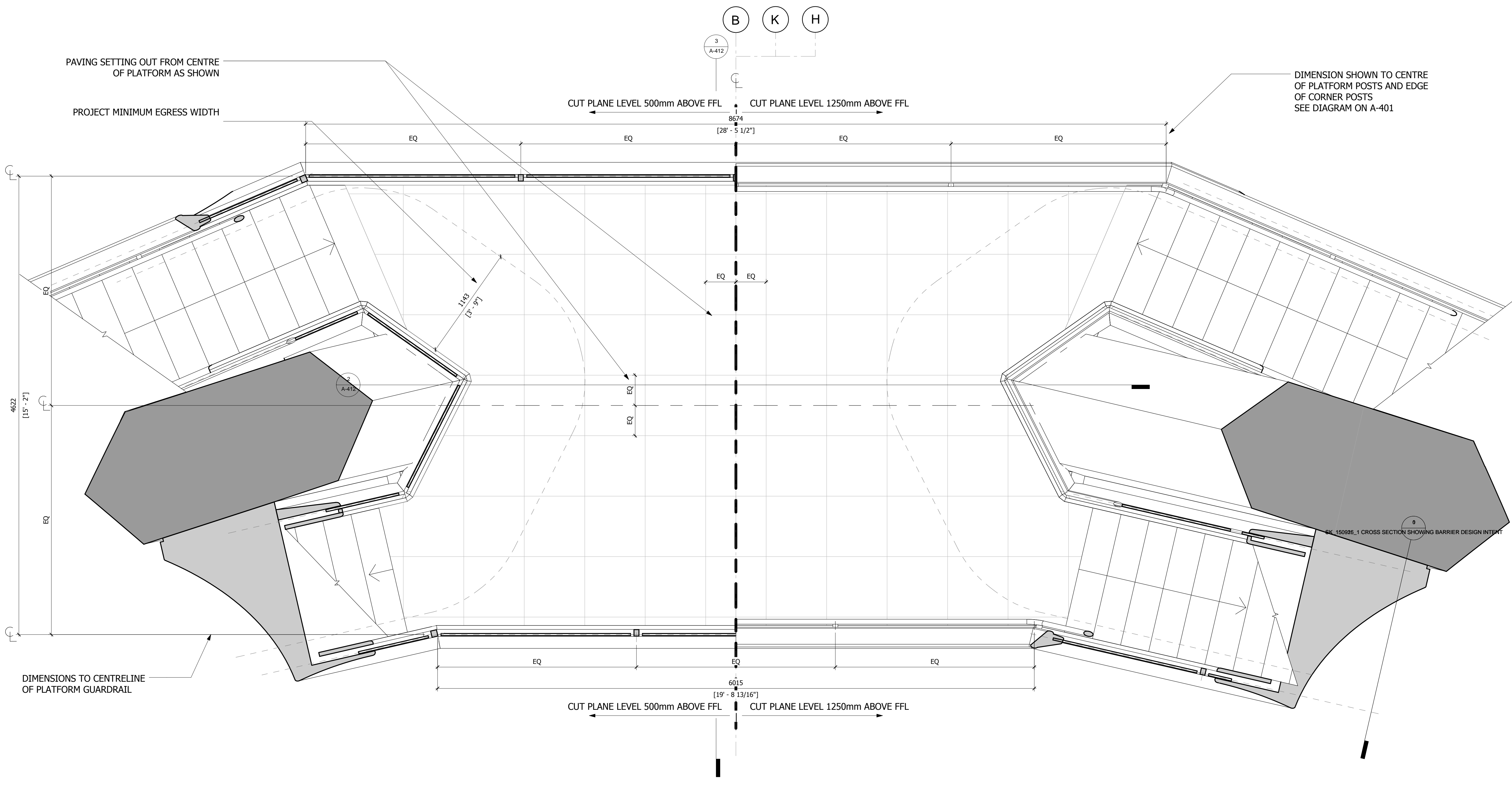
D.O.B. BUILDING PERMIT FILING 05/20/2016
No. Issue Date



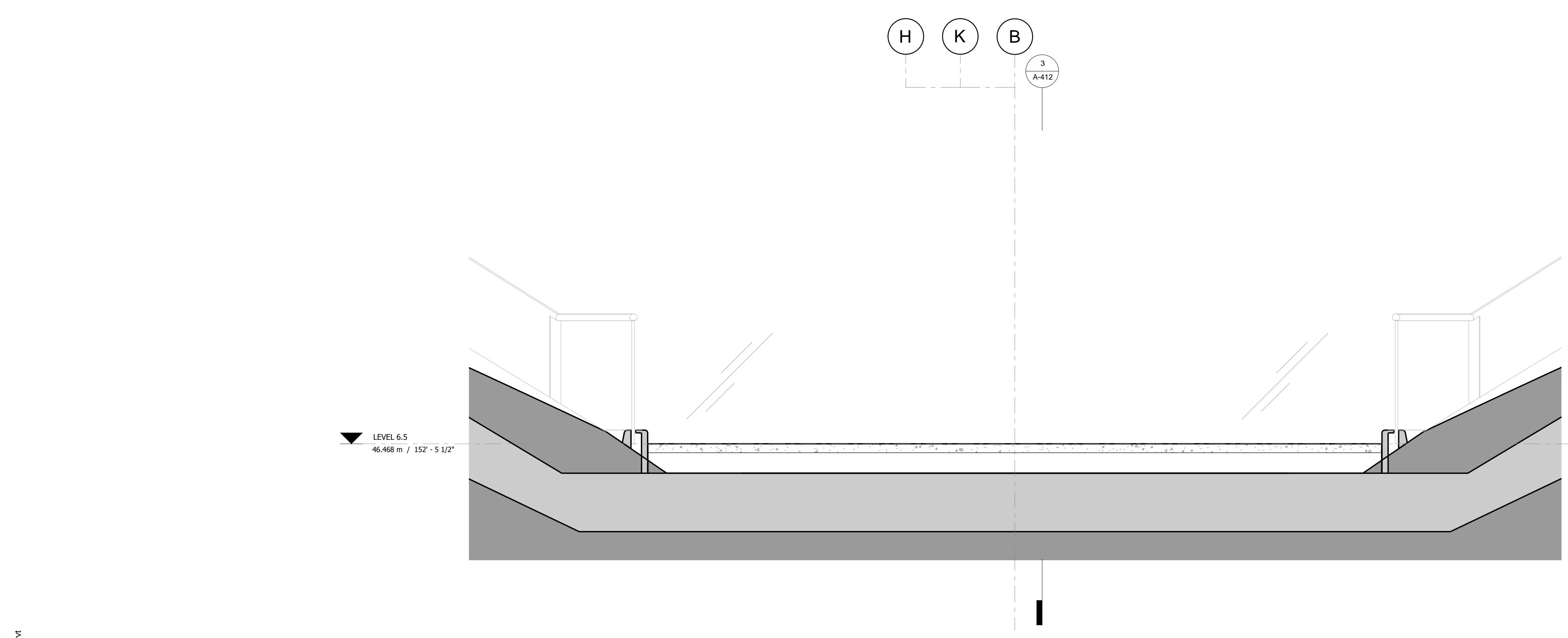
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Project No: 2208007
Drawn By: *[Signature]*
Sheet Number: **HYE-VS-A-412**

**TYPICAL PLATFORM
LEVEL 6.5 (DISPLAY 6)**

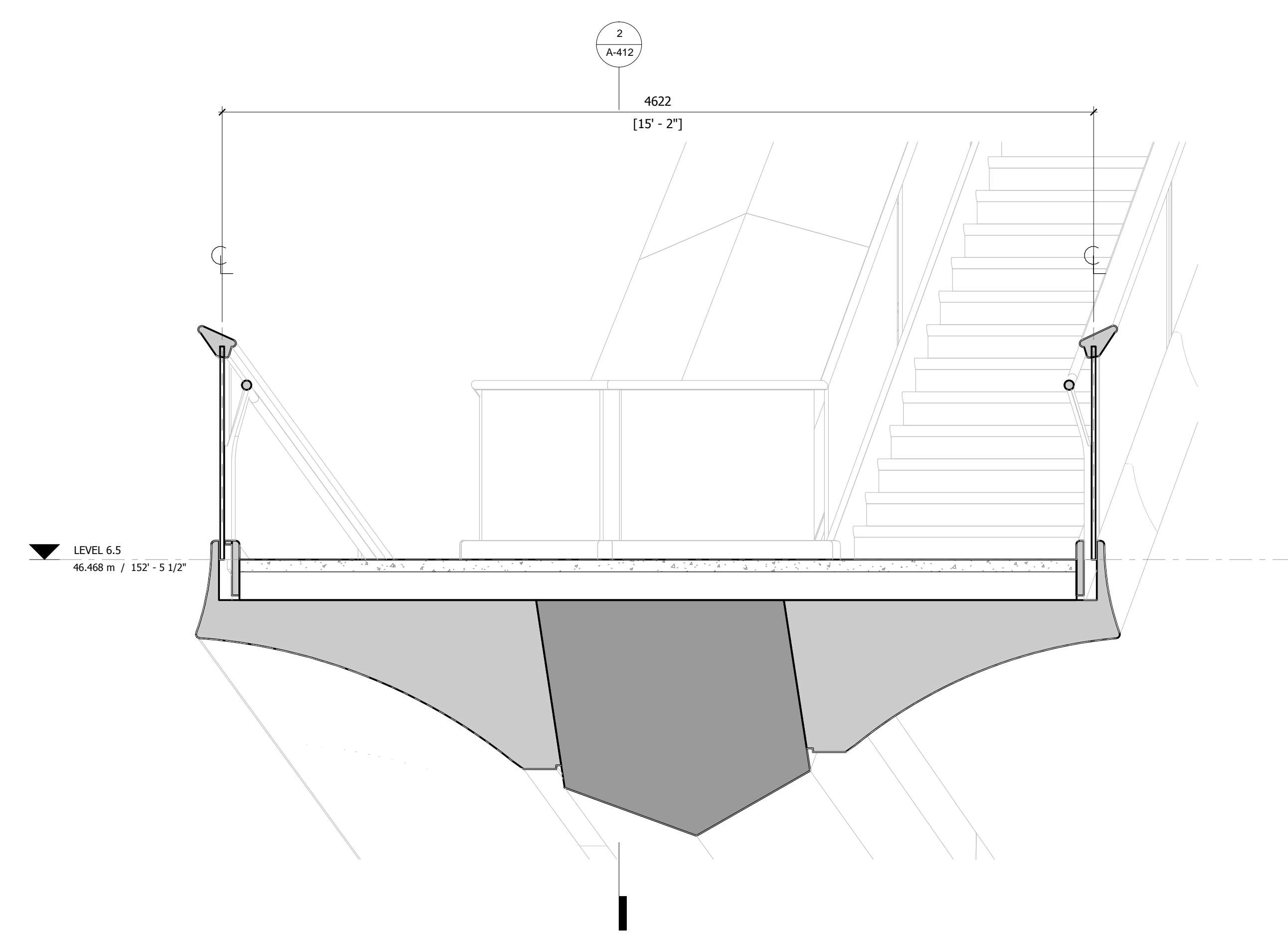
Project Number:
A-412.00



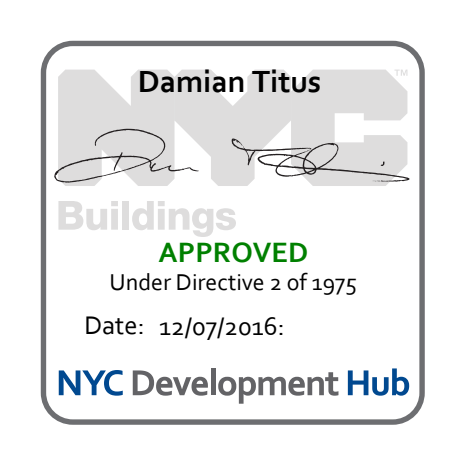
1 PLAN
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2 LONG SECTION
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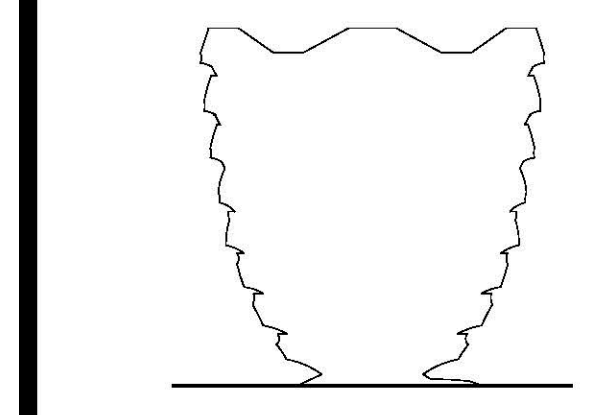


3 CROSS SECTION
1 : 20



HUDSON YARDS
VESSEL

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

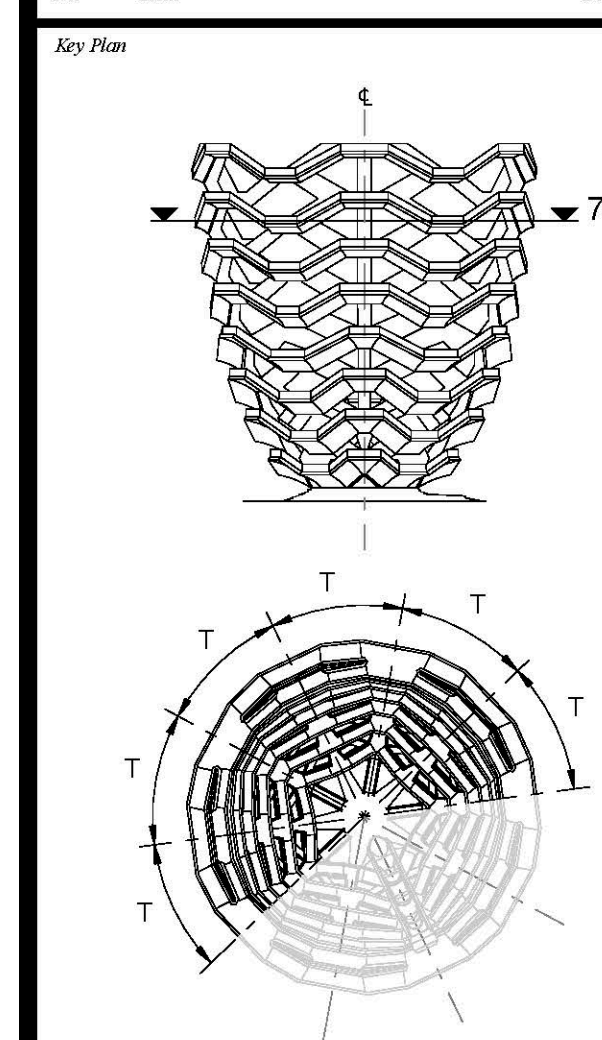
Design Architect
 Heatherwick Studio
 256-364 Greys Inn Road
 London WC1X 8DH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

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 New York, NY 10005
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3	D.O.B. BUILDING PERMIT FILE NO.	1202/2016
1	D.O.B. BUILDING PERMIT FILE NO.	05/20/2016
No.	Date	Year



Date: 08/29/14
 Project No: 2298-02
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-413

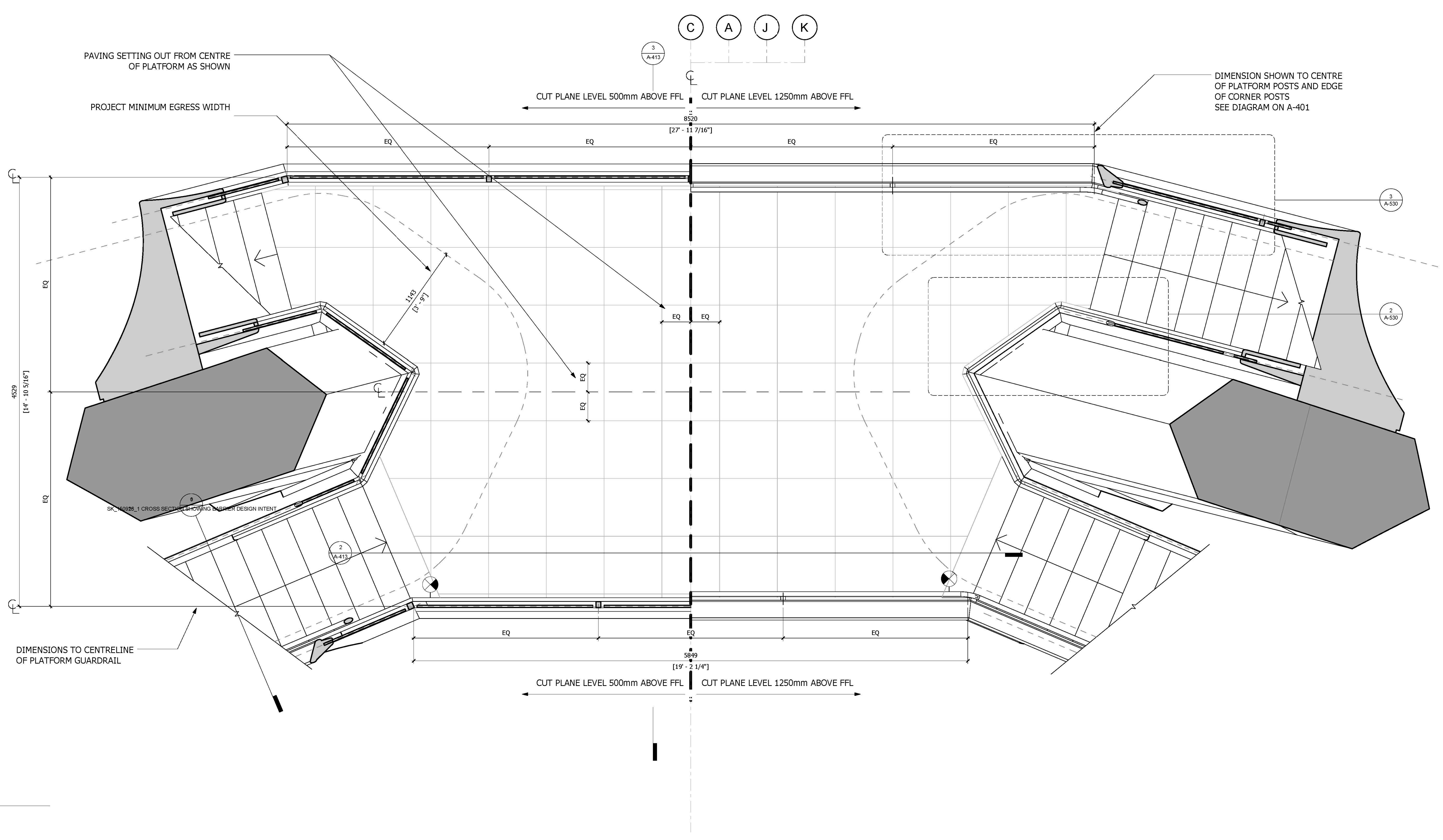
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LEVEL 7 (DISPLAY 7)**

Sheet Number:
A-413.00

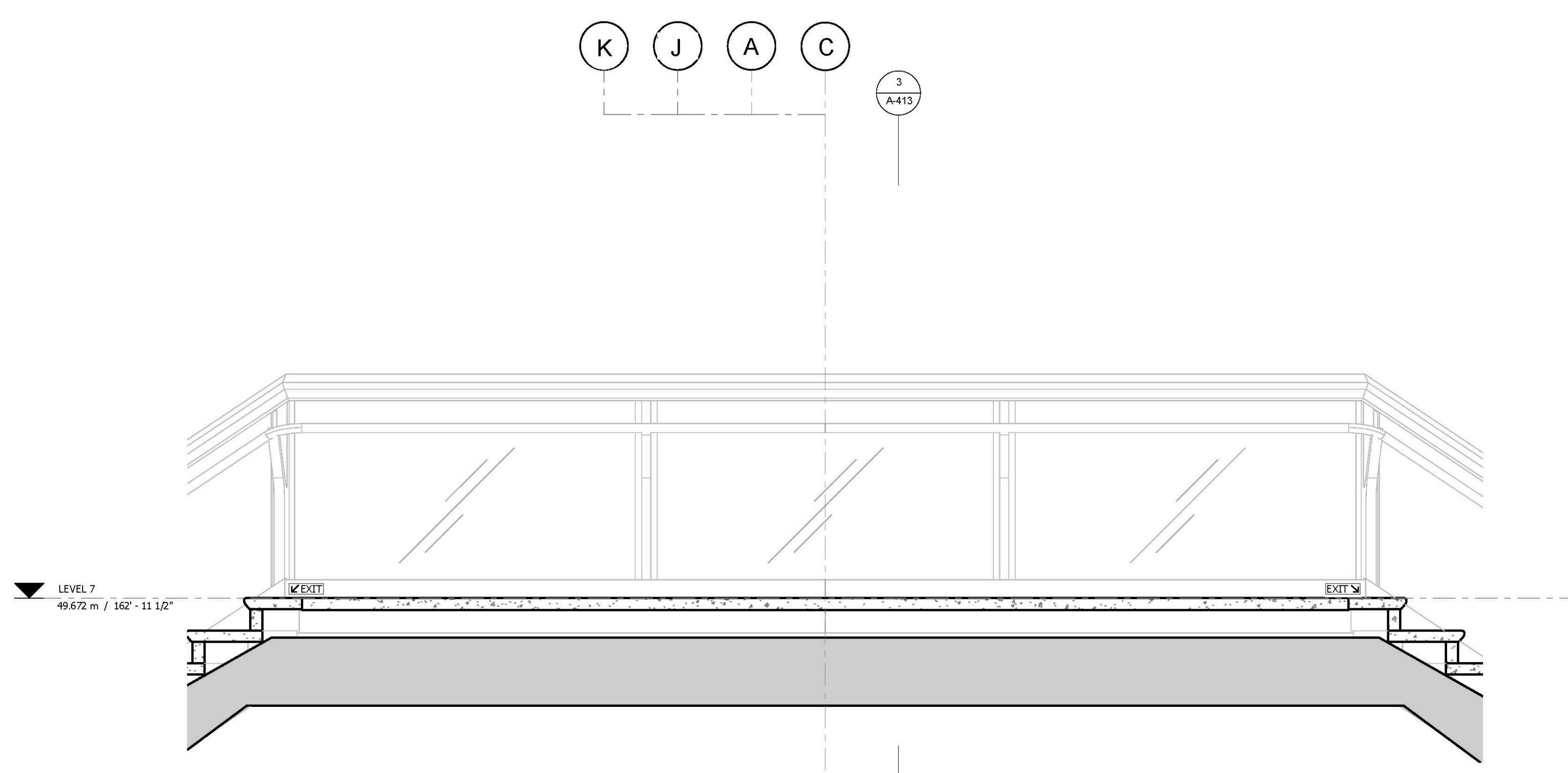
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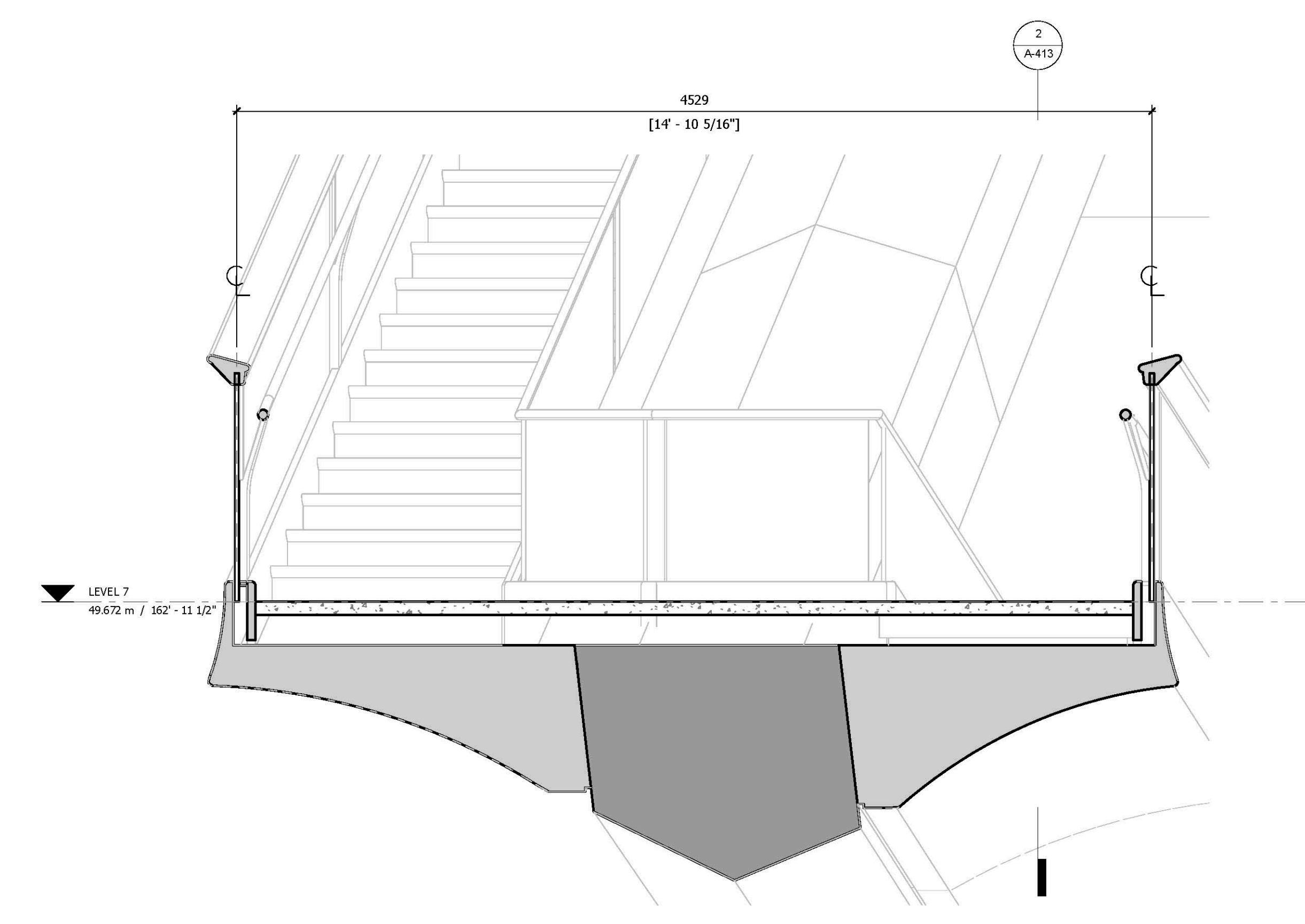
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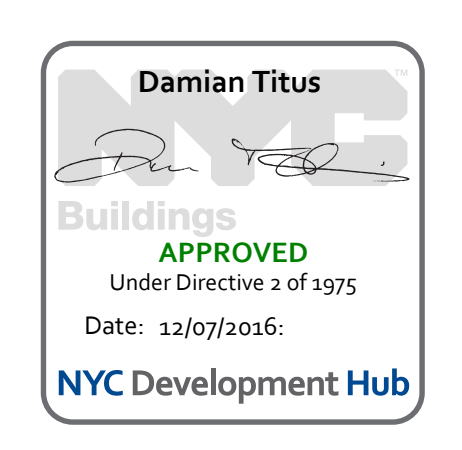
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2 LONG SECTION
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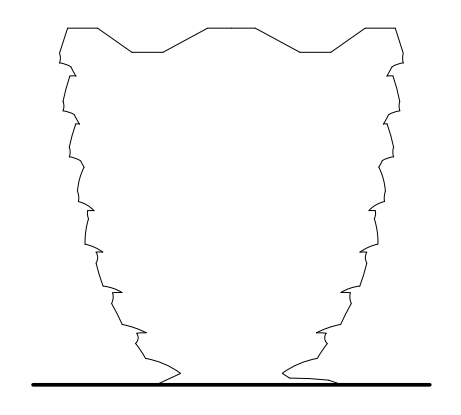
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TYPICAL PLATFORM LEVEL 7
 CUBIC VESSEL MASTER PLAN.nwd
 A-413
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**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

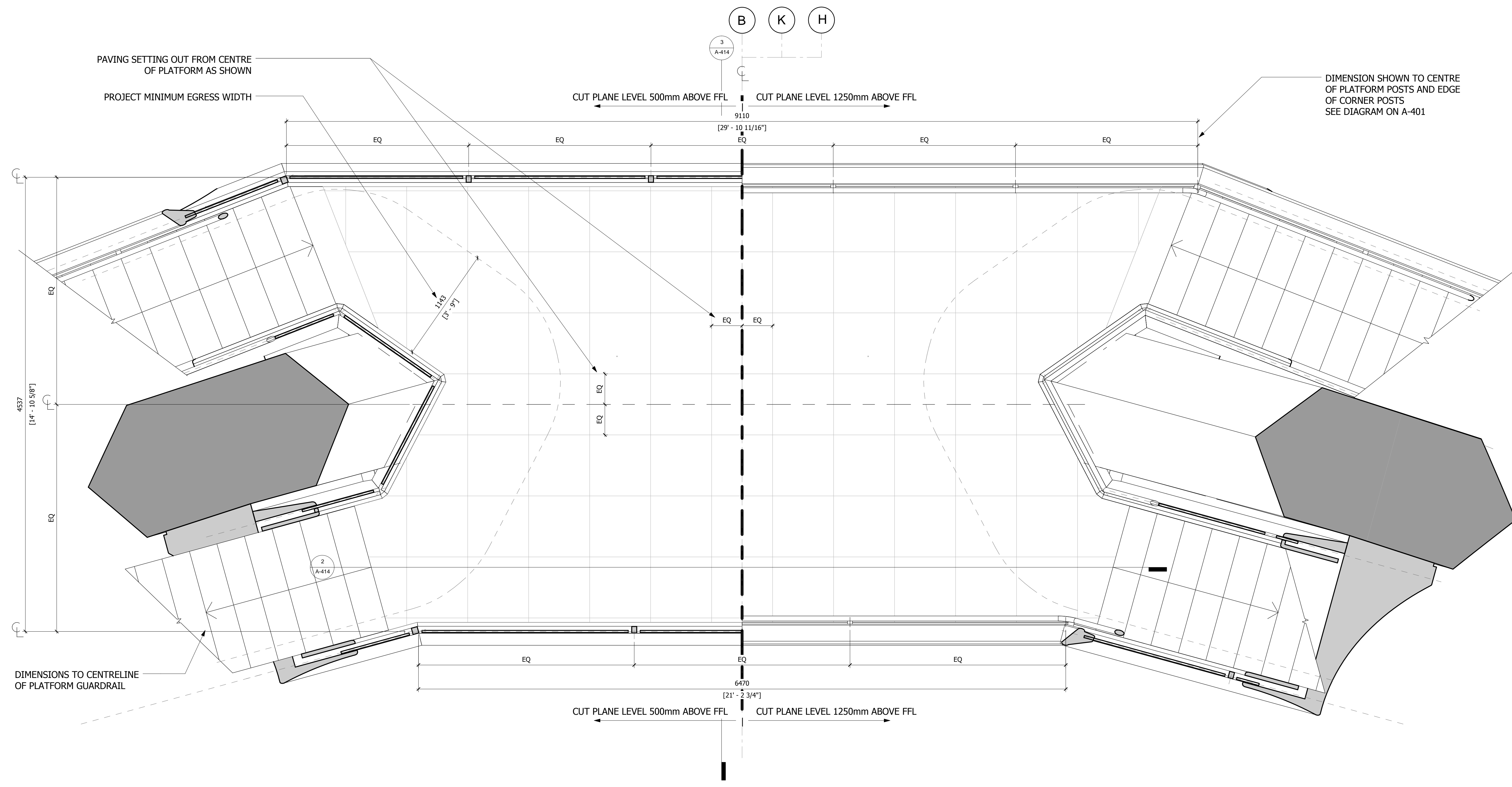
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

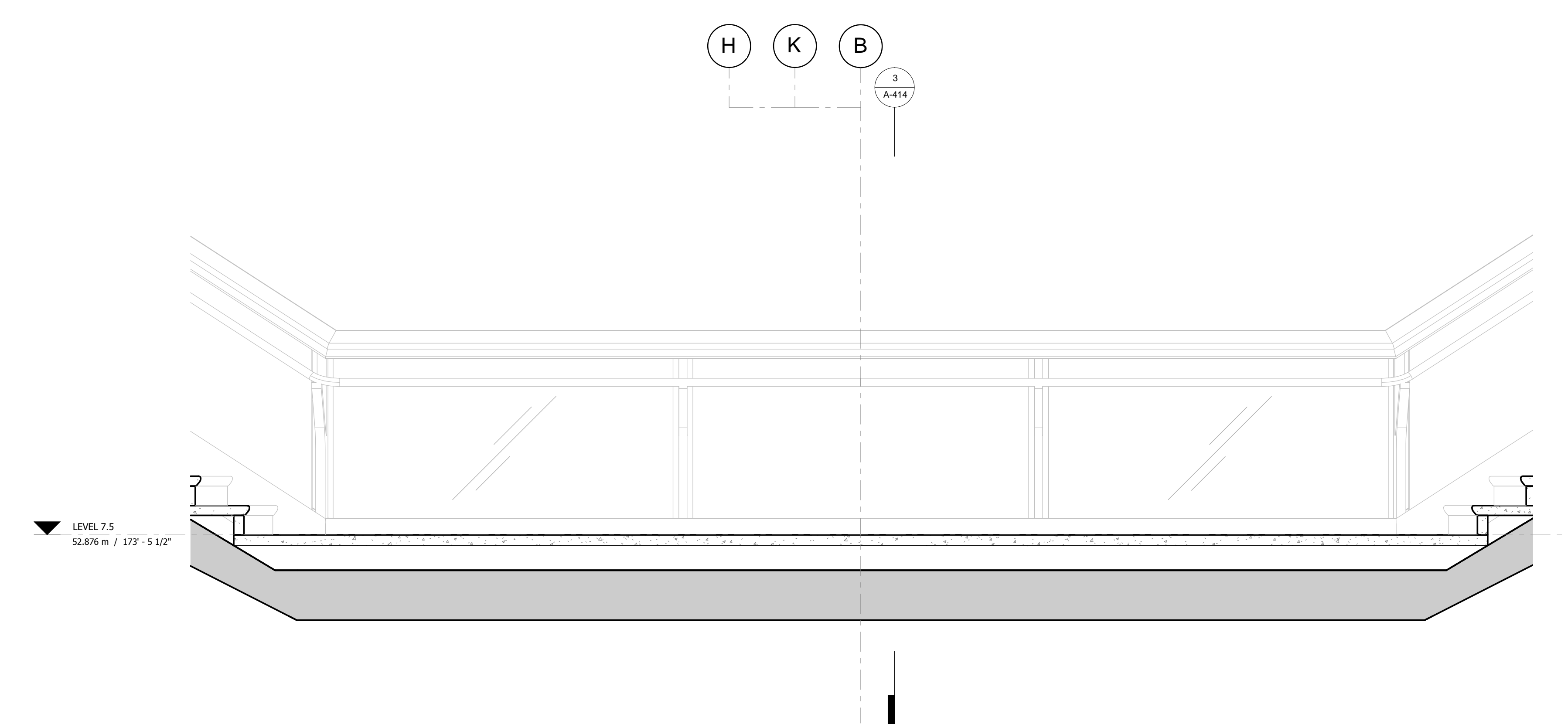
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

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Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 West Street
 New York, NY 10005
 Tel: 212.896.3000

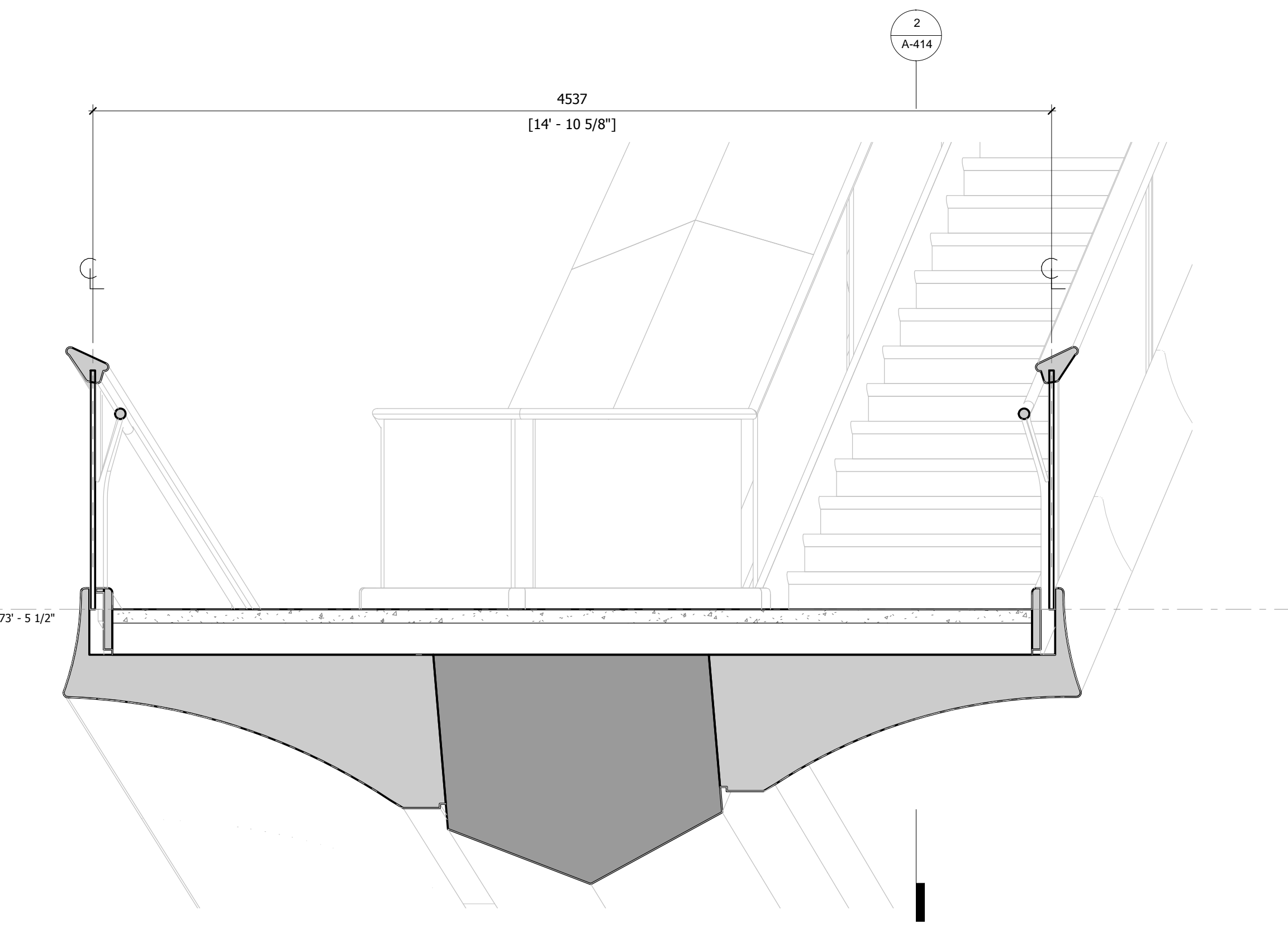
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REPRODUCE**



1 PLAN
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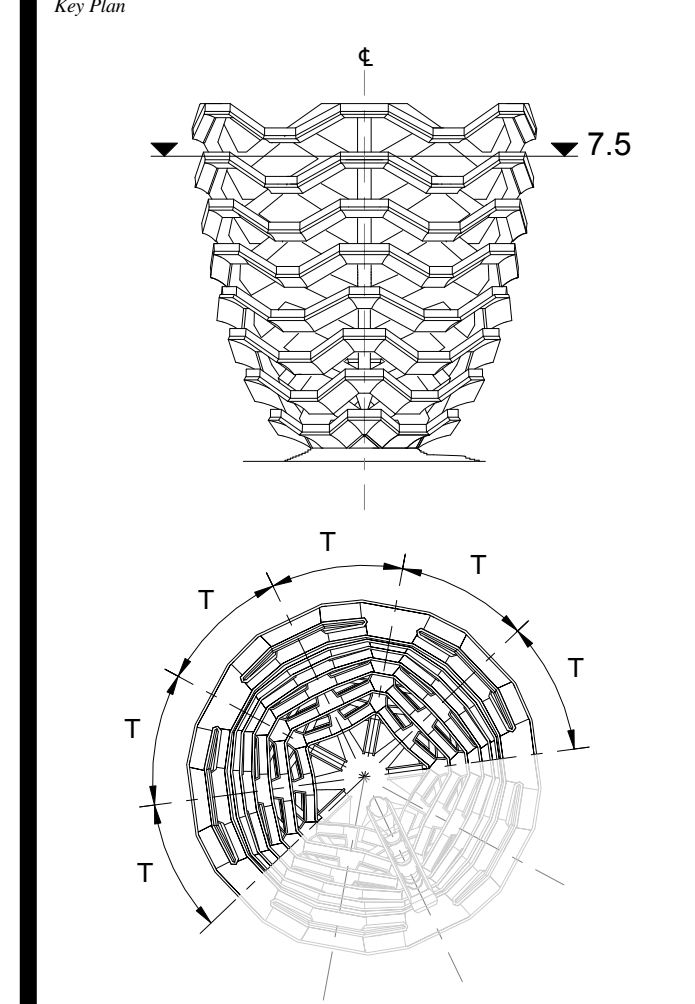


2 LONG SECTION
1 : 20



3 CROSS SECTION
1 : 20

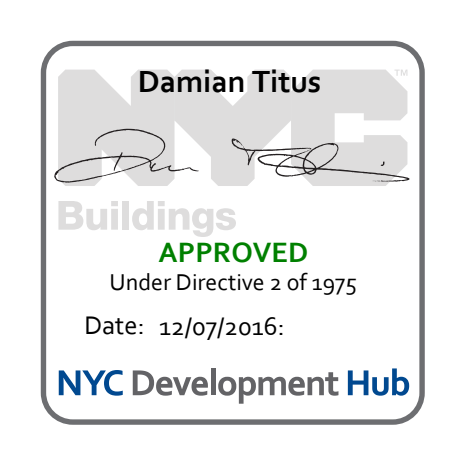
D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

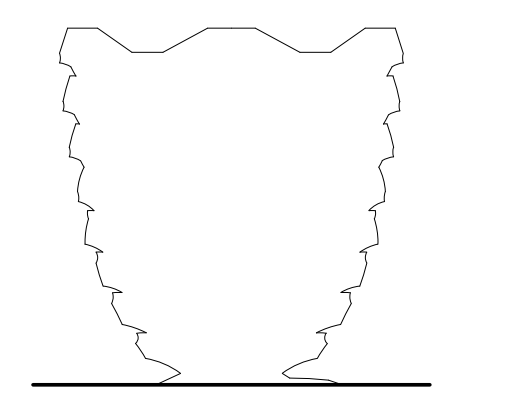


Date: 05/15/14
 Project No: 22/09/07
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-414

**TYPICAL PLATFORM
LEVEL 7.5 (DISPLAY 7)**

Sheet Number
A-414.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 330 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

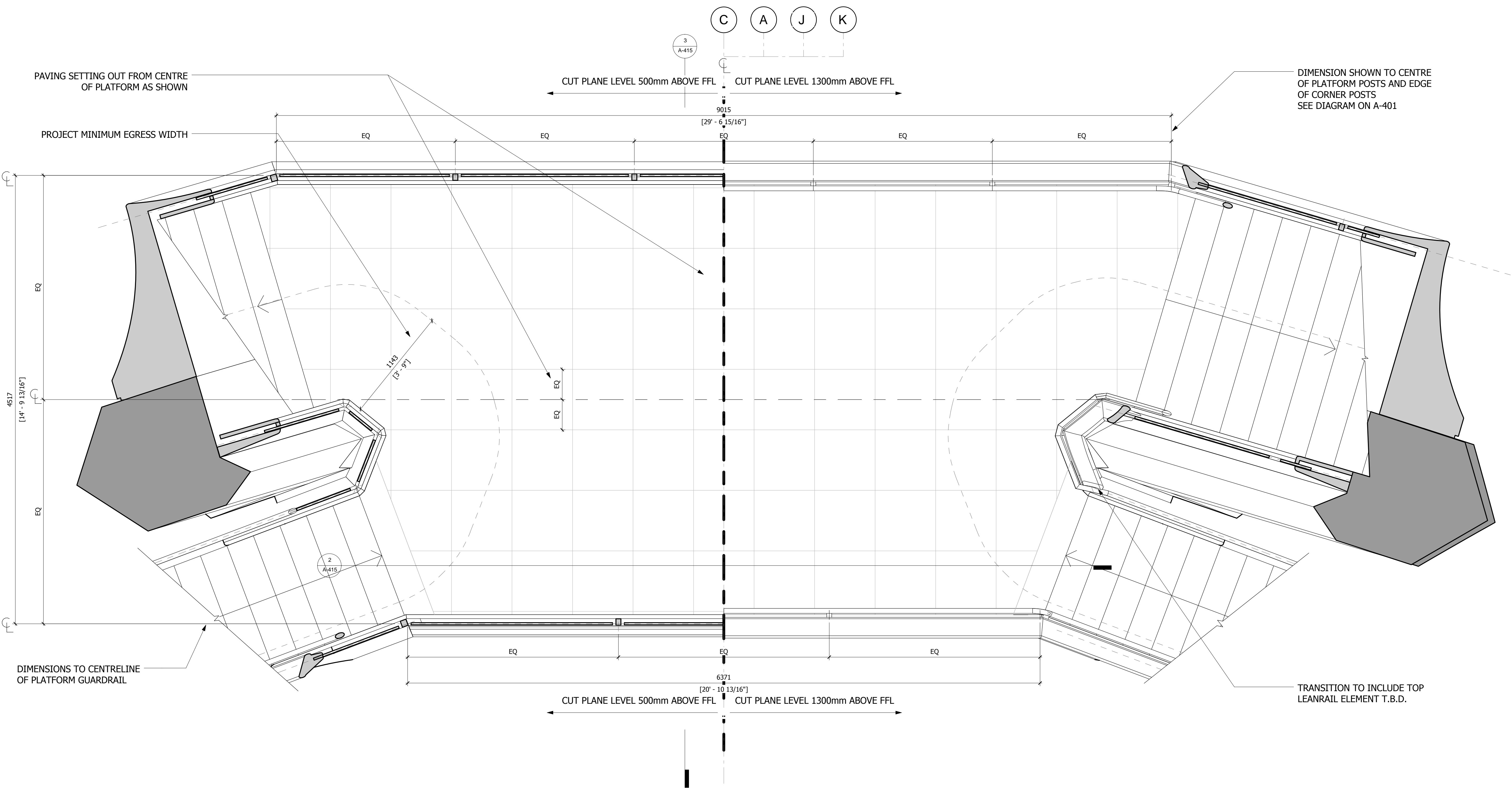
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

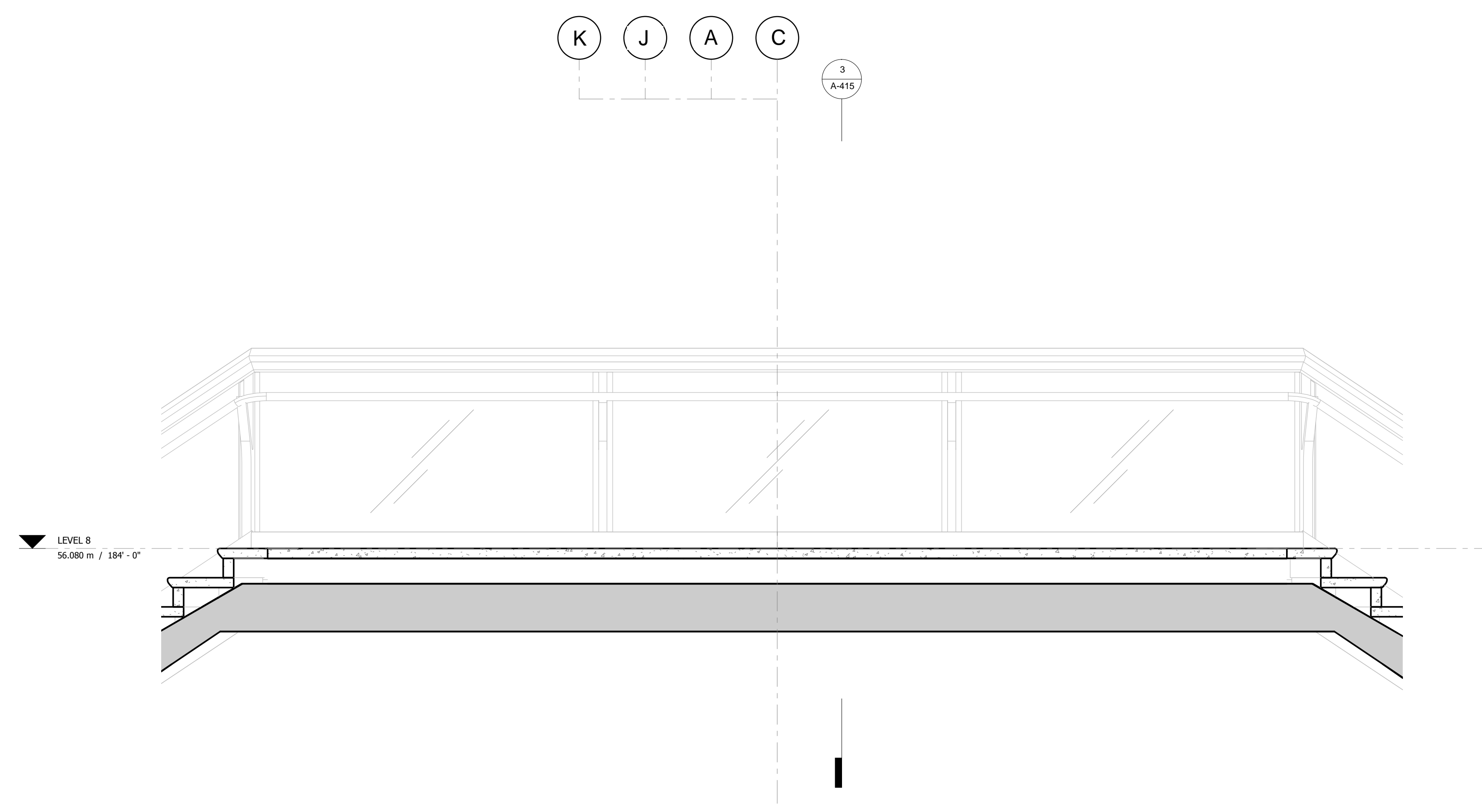
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

Civil, Mechanical, Electrical, Plumbing
 Fire Alarm, Fire Protection, Security
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

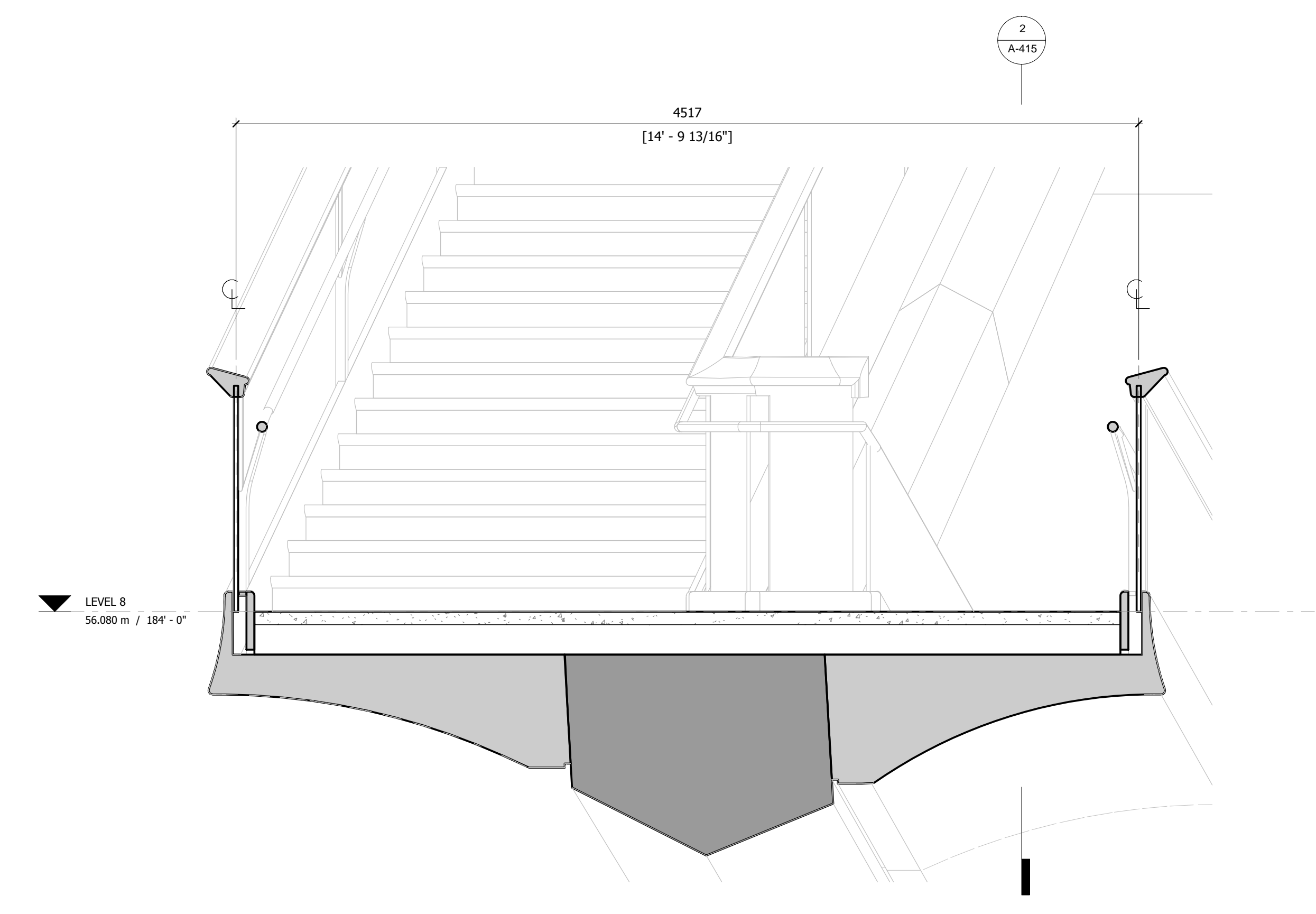
CONFIDENTIAL
 DO NOT
 REPRODUCE



1 PLAN
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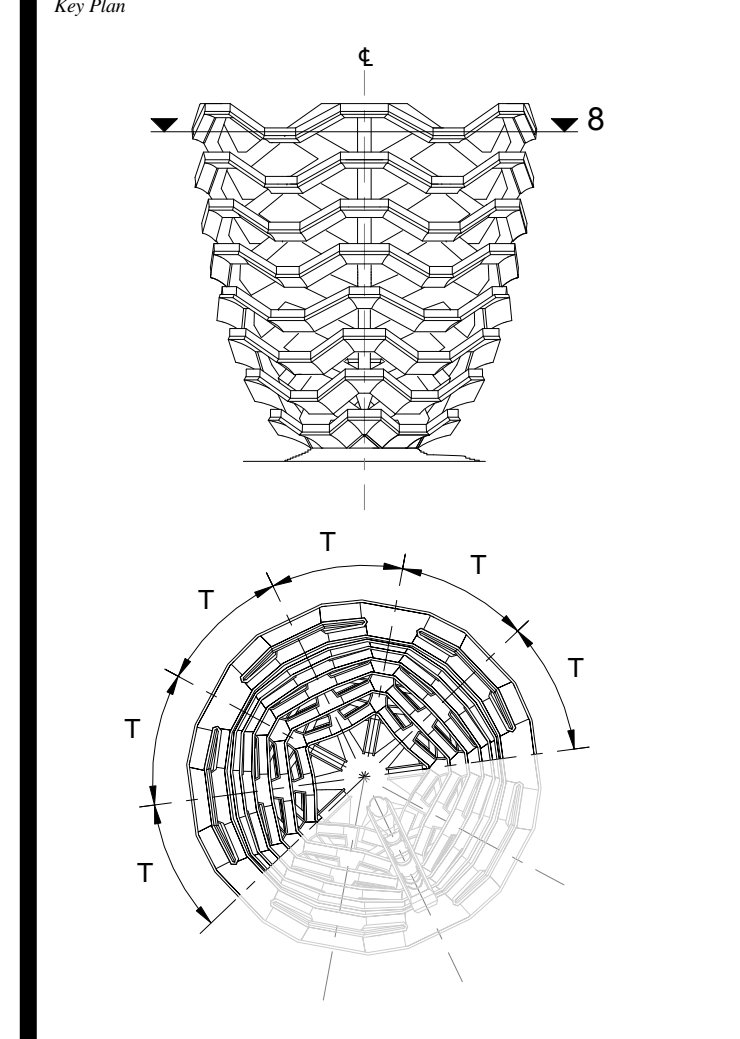


2 LONG SECTION
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3 CROSS SECTION
 1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

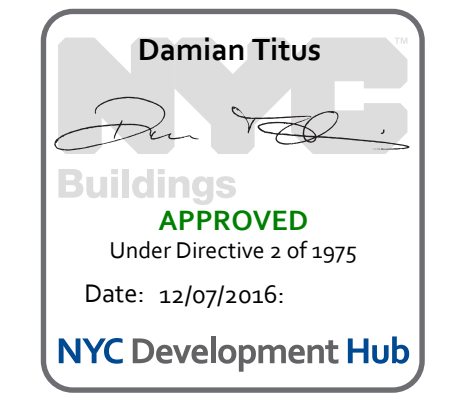


Date: 08/29/14
 Project No: 2298002
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-415

HYE-VS-A-415

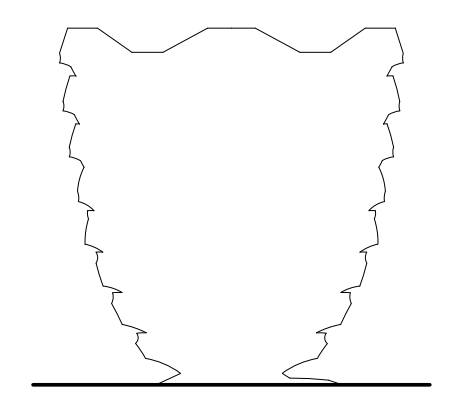
TYPICAL PLATFORM
 LEVEL 8 (DISPLAY 8)

Sheet Number
 A-415.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.866.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

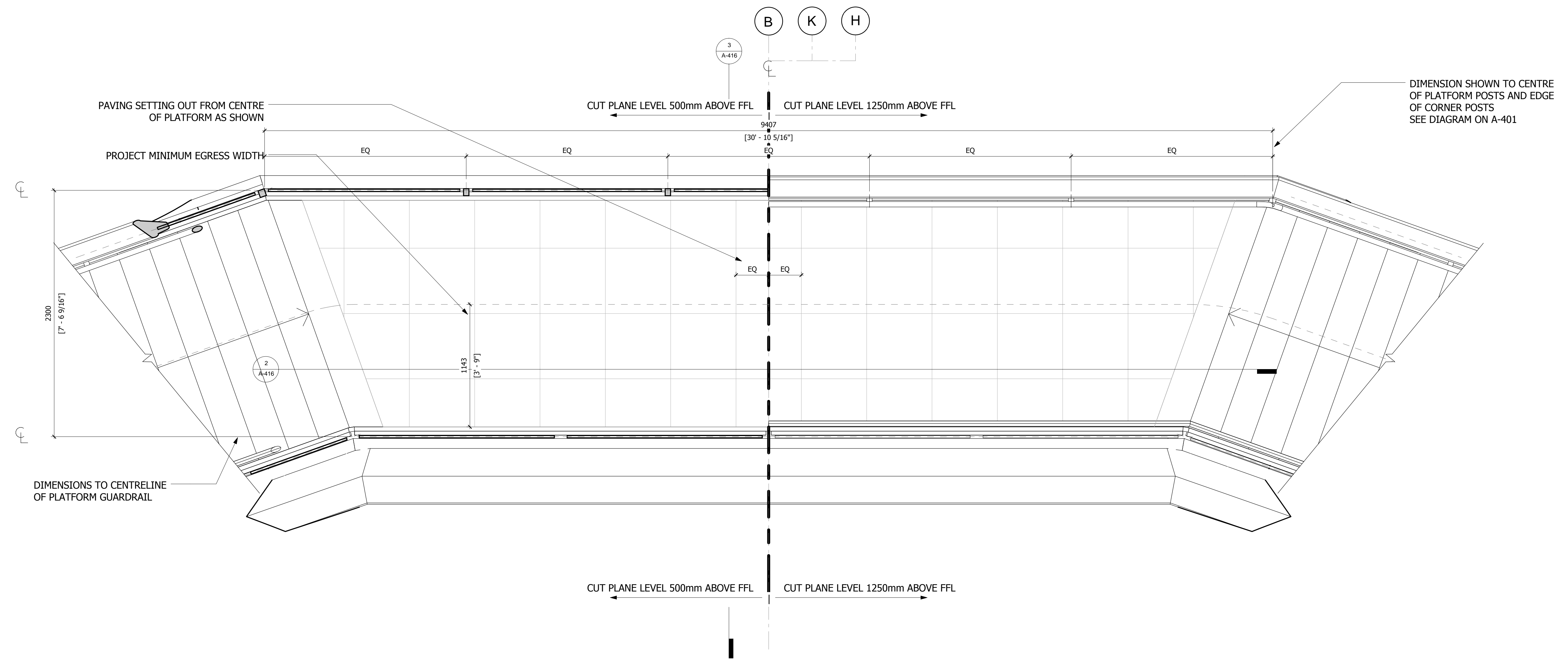
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

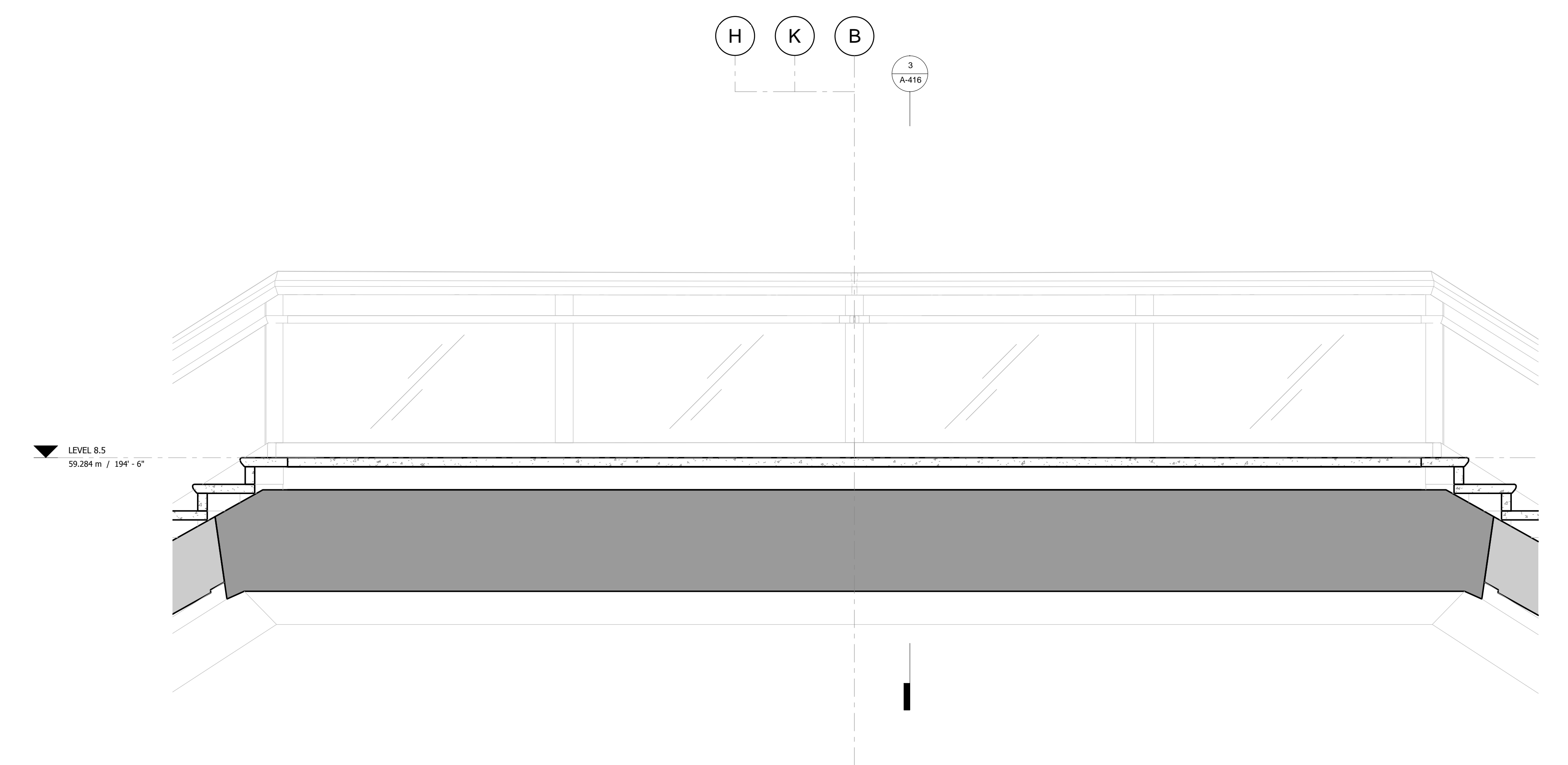
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

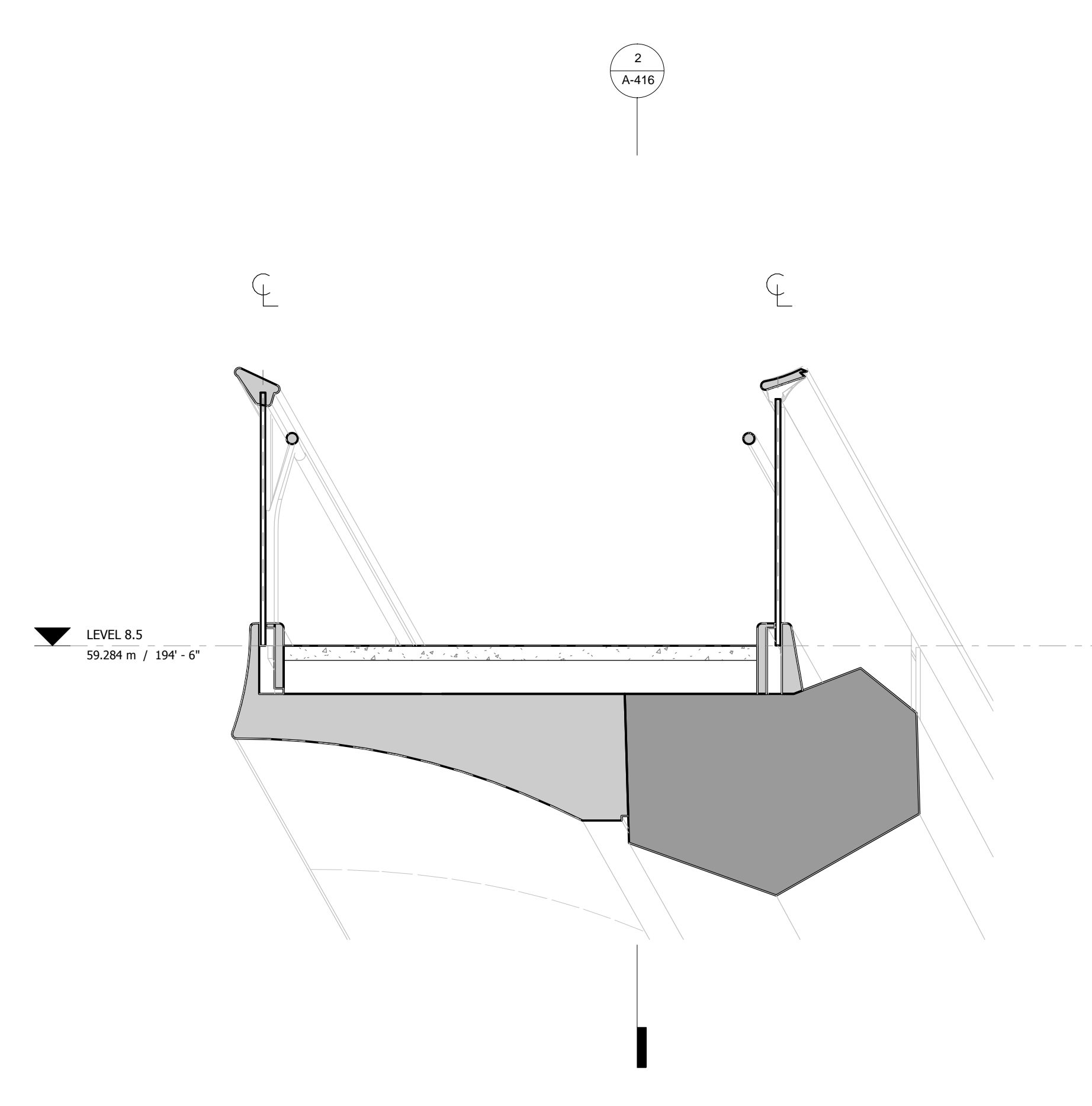
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DO NOT
REPRODUCE**



1 PLAN 1 : 20

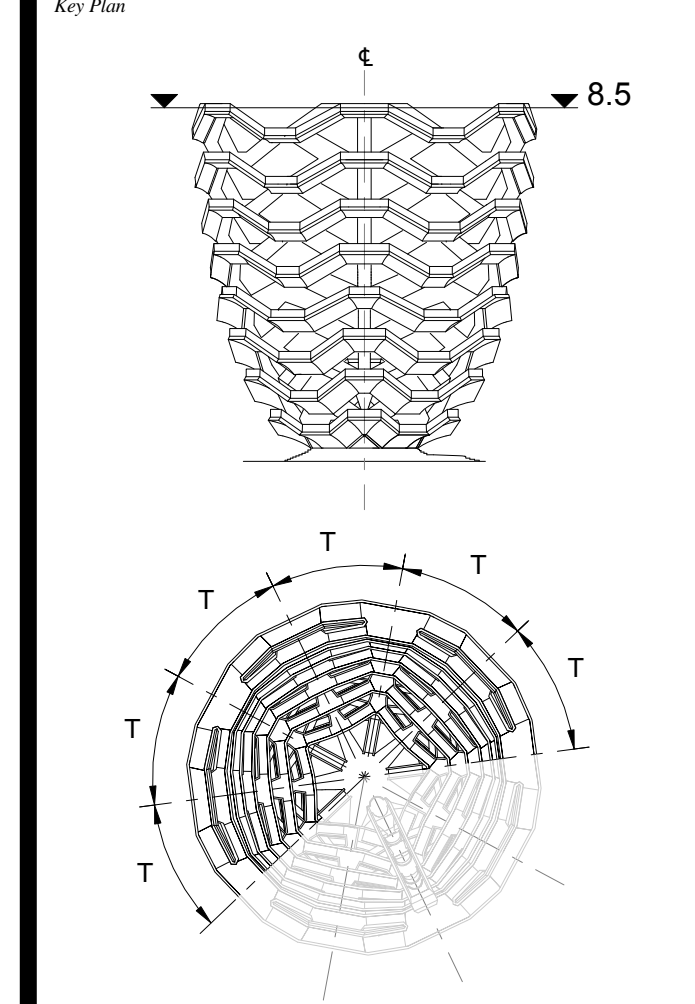


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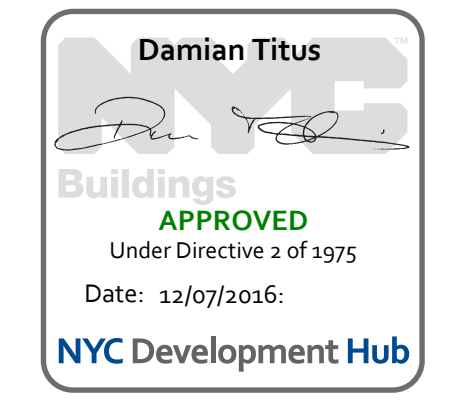
3 CROSS SECTION 1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date



Date: 08/29/14
 Project No: 2208002
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-416

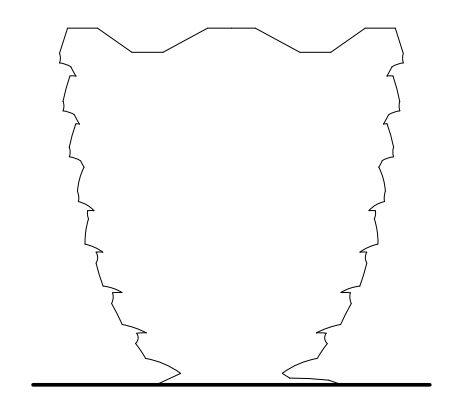


**TYPICAL PLATFORM
LEVEL 8.5 (DISPLAY 8)**

Sheet Number
A-416.00

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

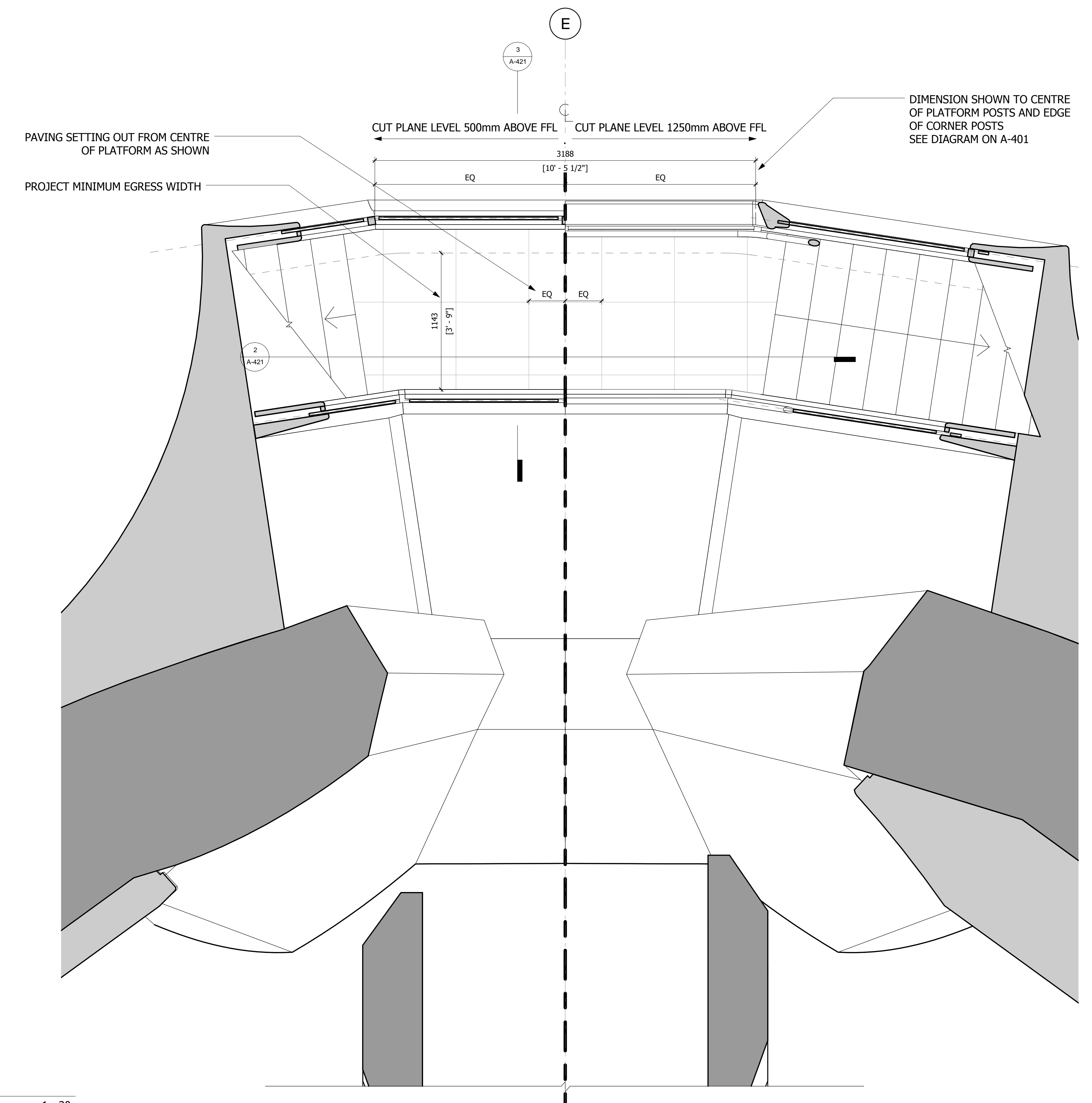
Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

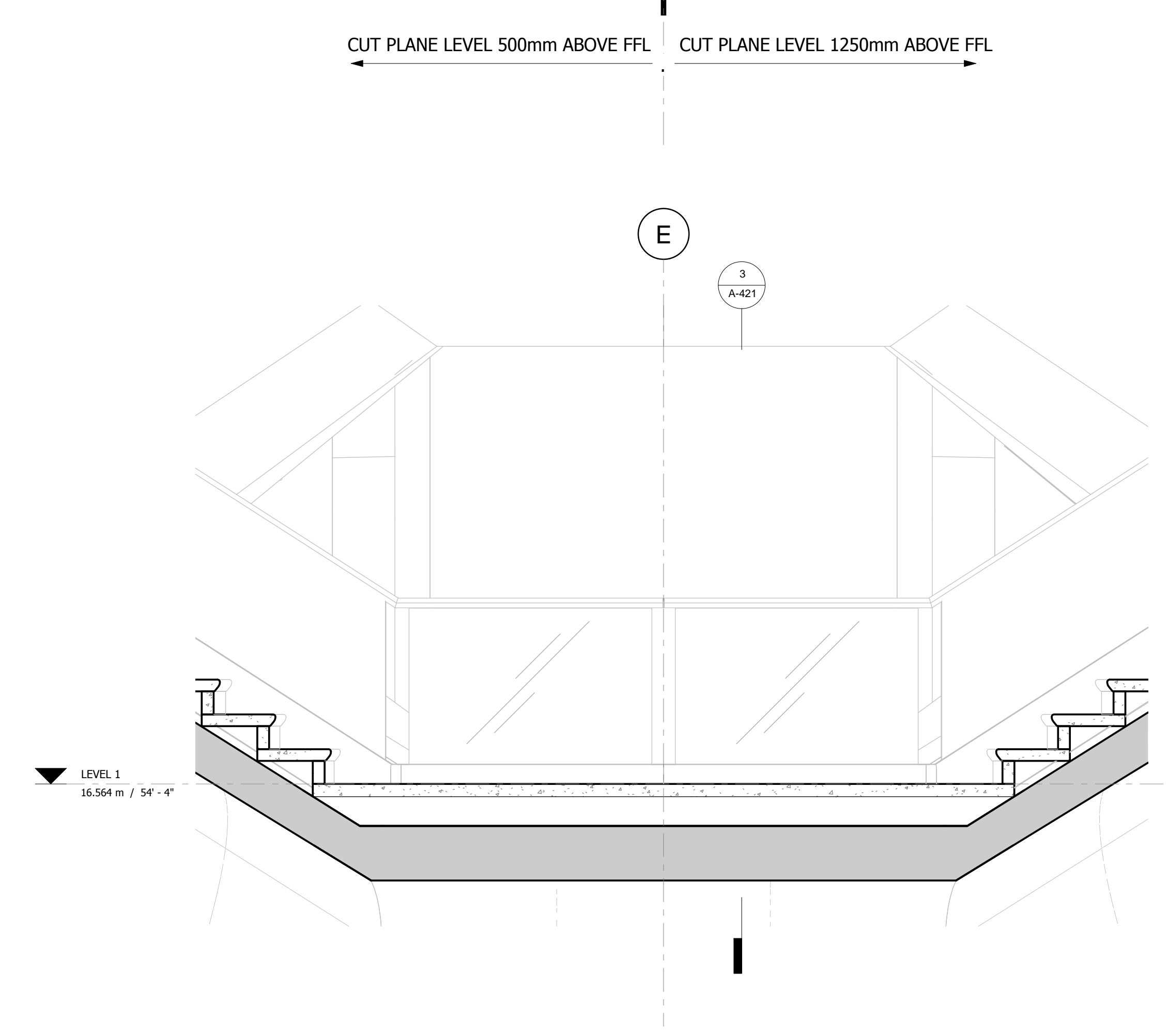
**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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REPRODUCE**

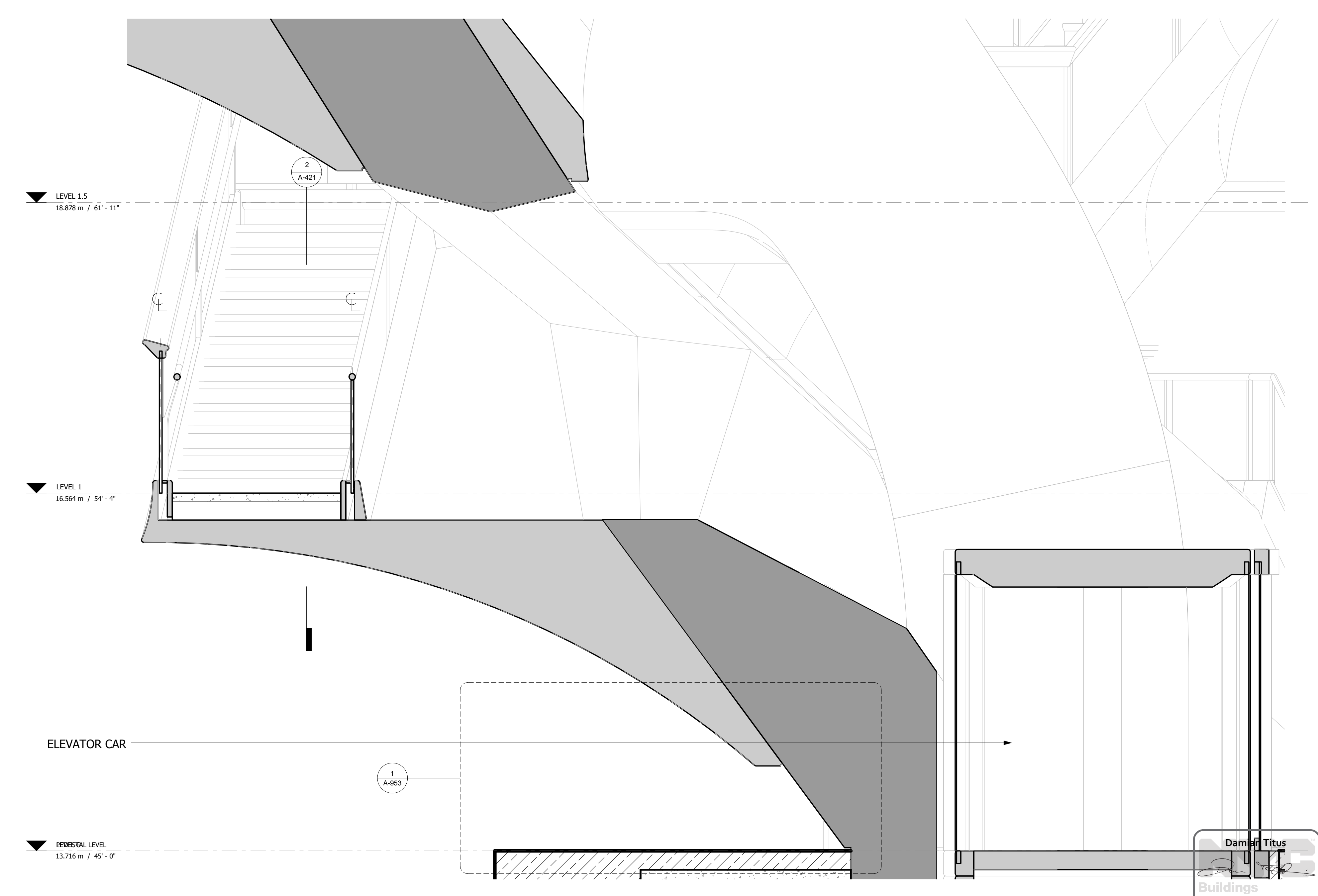
NOTES:
 ACCESS TO THIS PLATFORM RESTRICTED BY A BARRIER AT TOP OF STAIRS LEADING TO PLATFORM (SEE A-422).
 OPENABLE ONLY BY AUTHORIZED PERSONNEL FOR THEIR MAINTENANCE OR CLEANING ACCESS TO THIS AREA.



1 PLAN
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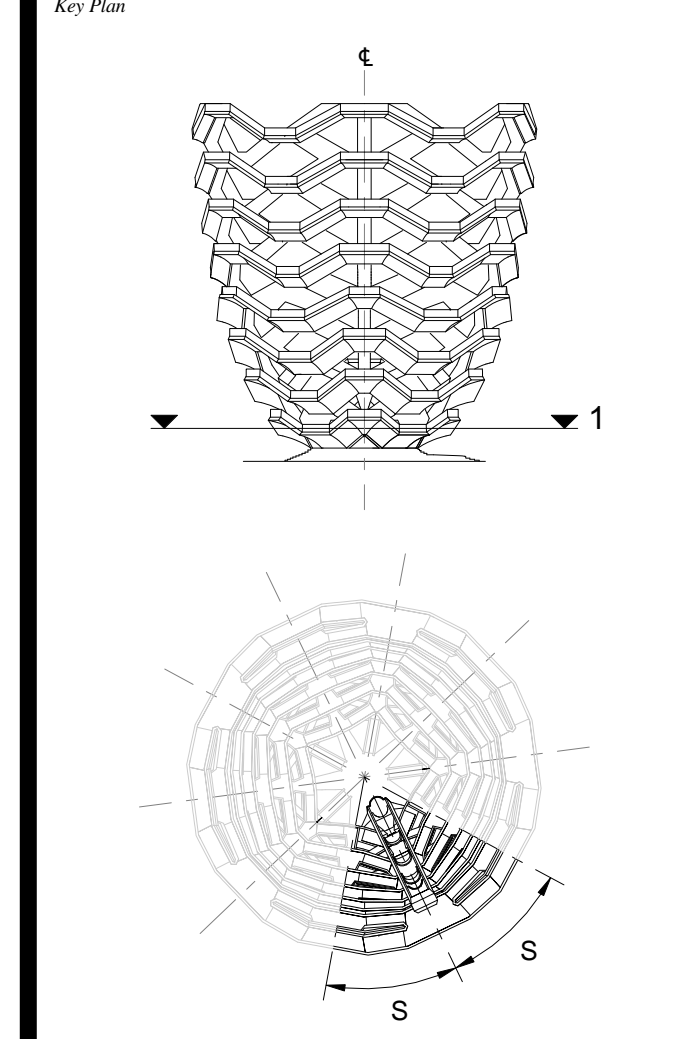


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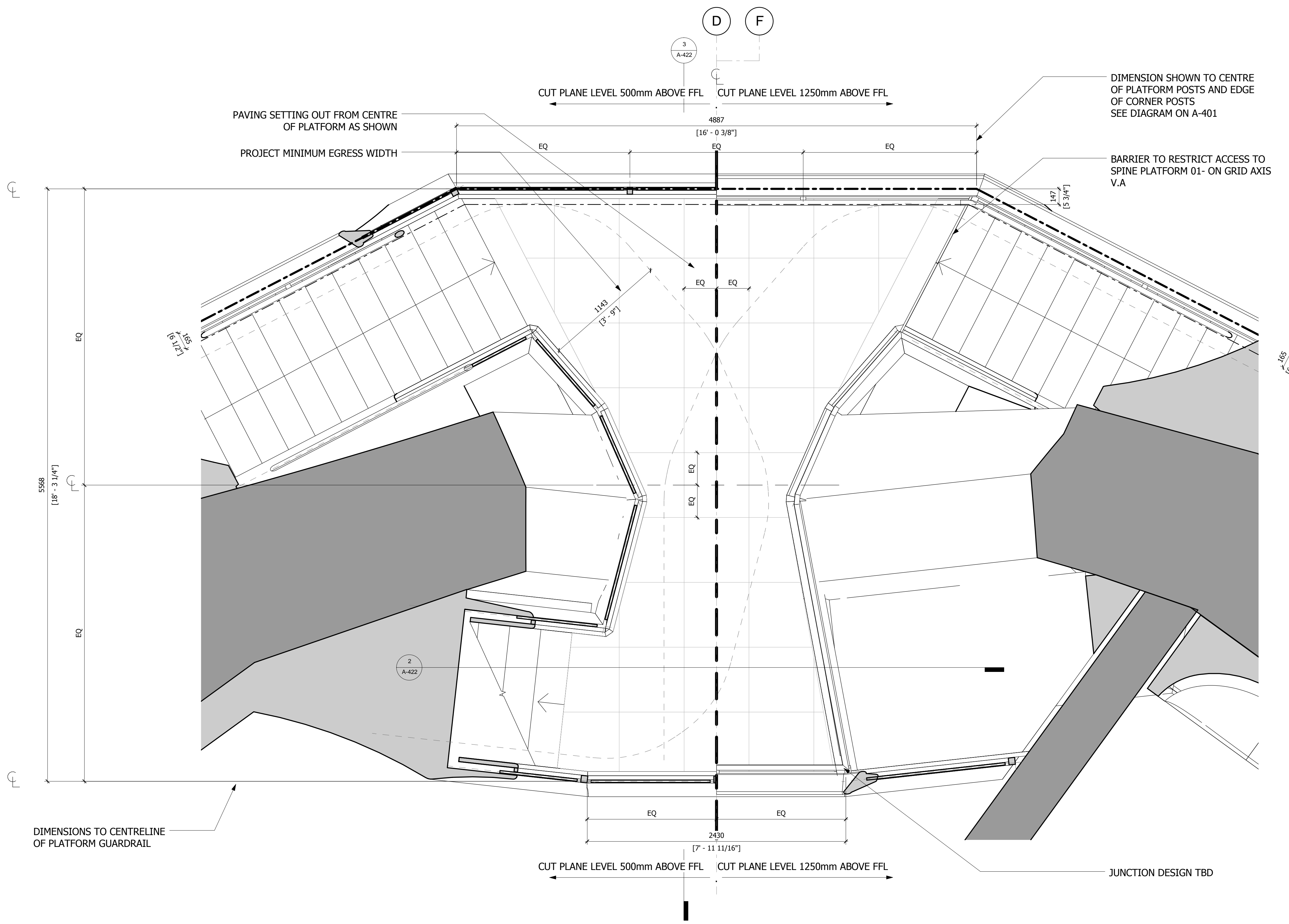
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D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

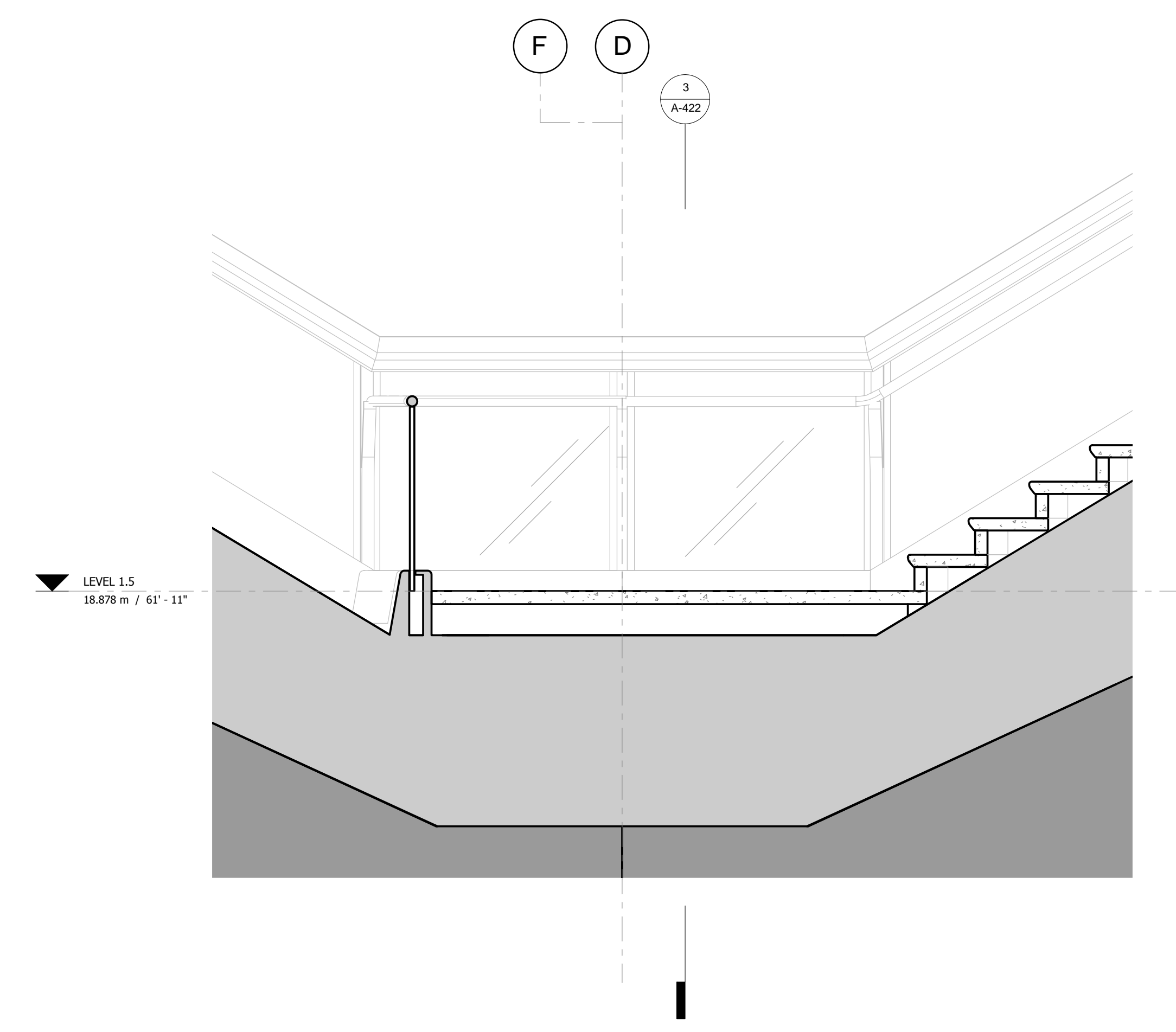


Date: 05/15/14
 Project No: 2208007
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-421

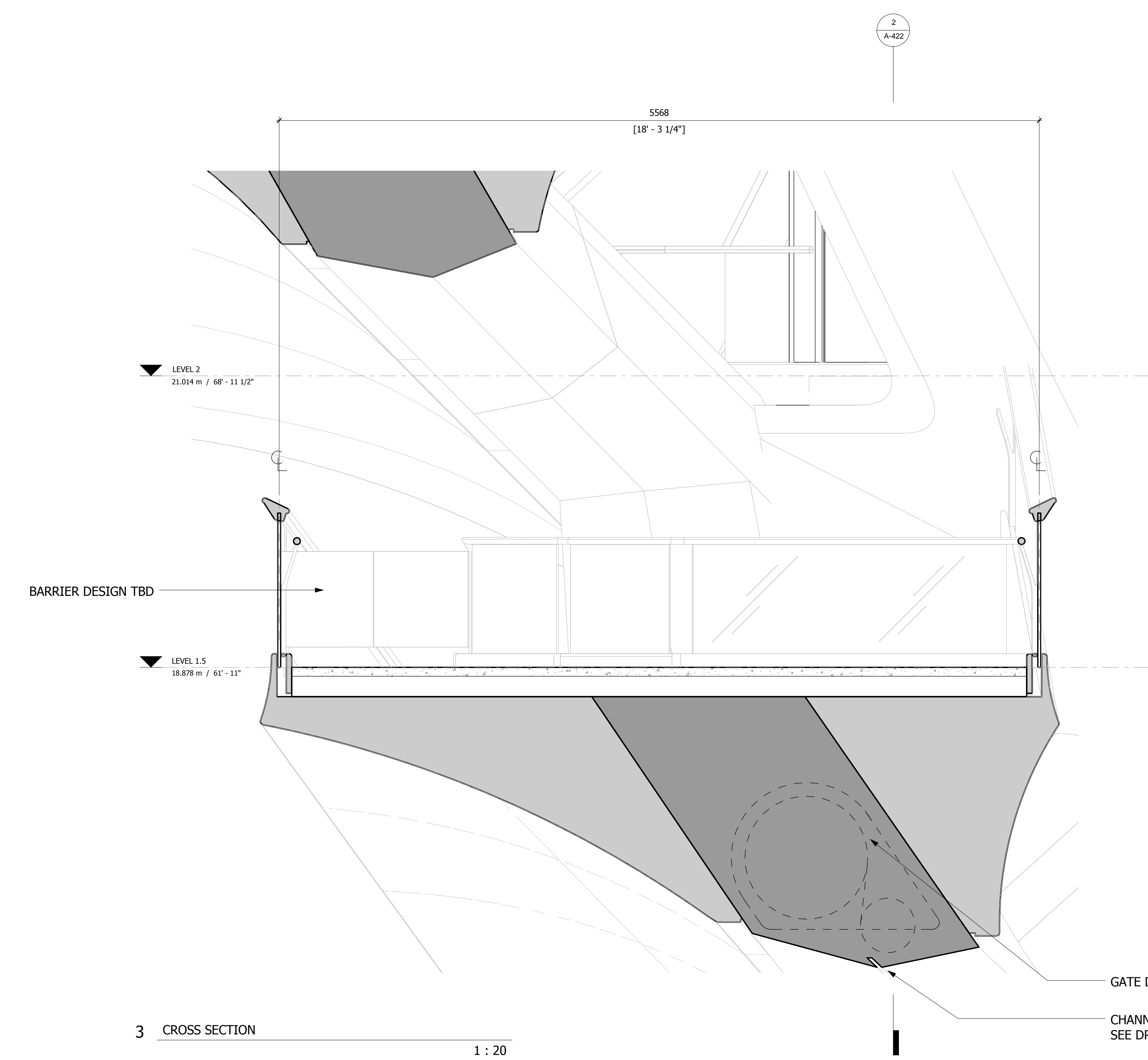
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**SPINE PLATFORM
LEVEL 1 (DISPLAY 1)**
 Drawing Title
 Date: 12/07/2016
 NYC Development Hub



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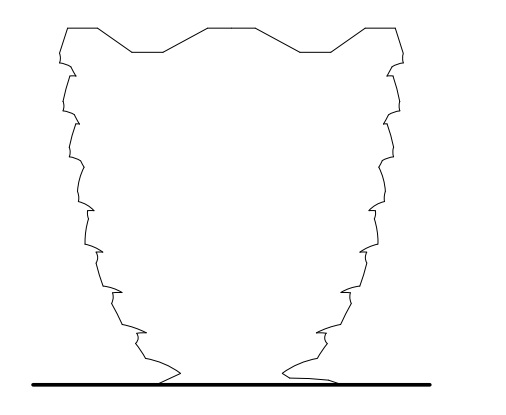
2 LONG SECTION
 1 : 20



3 CROSS SECTION
 1 : 20

HUDSON YARDS
 VESSEL

530 WEST 33RD STREET
 NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

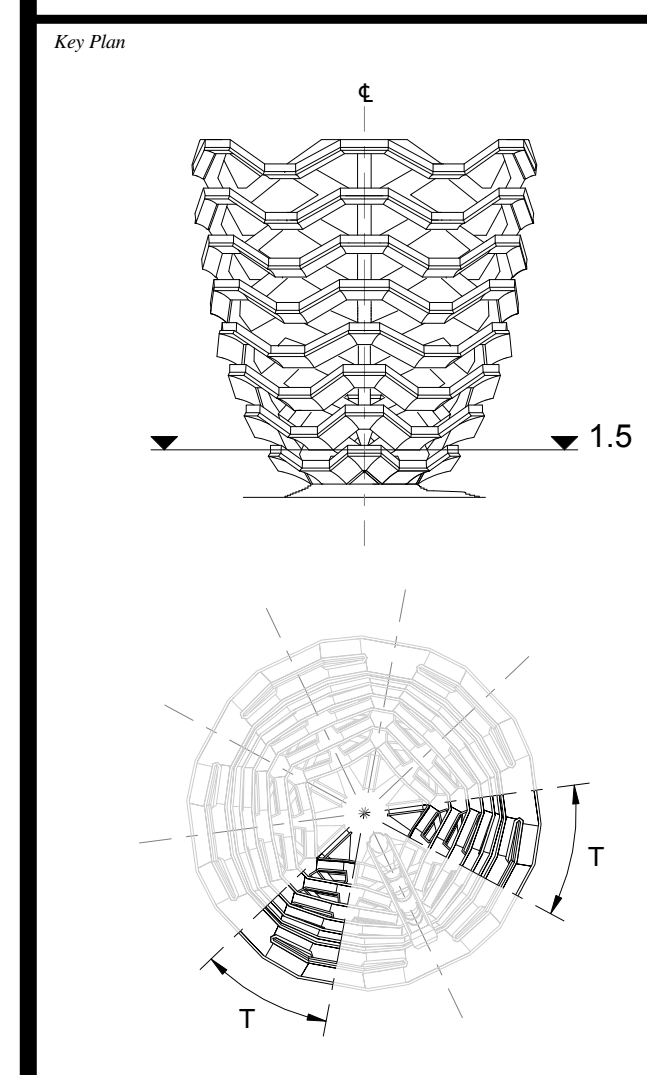
Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security
 One Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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D.O.B. BUILDING PERMIT FILING 05/20/2016

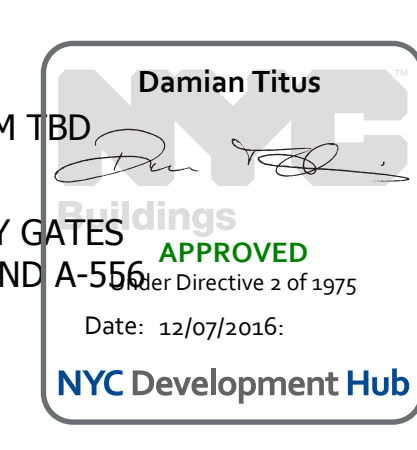


Date: 05/29/15
 Project No: 2298402
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-422

HYE-VS-A-422

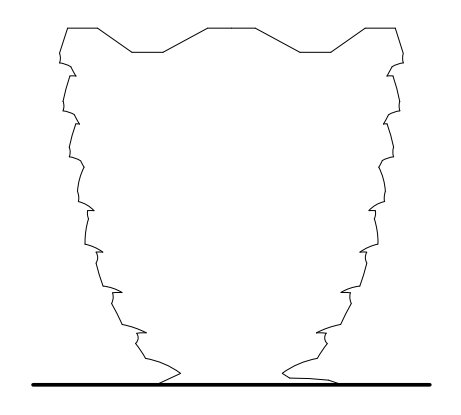
TRANSITION PLATFORM
 LEVEL 1.5 (DISPLAY 1)

Sheet Number
 A-422.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
New York, NY 10022
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

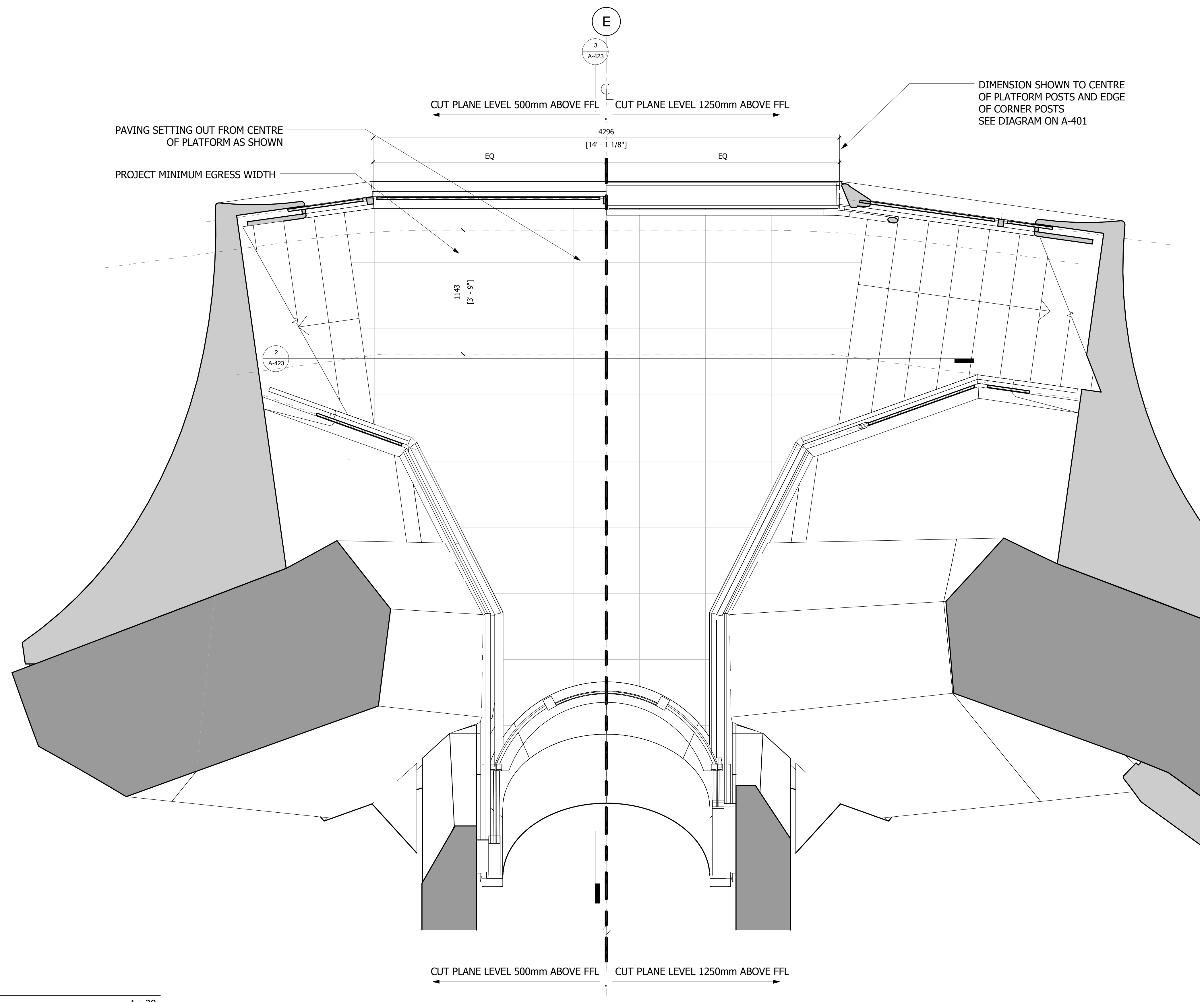
Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10017
Tel: 917.661.7800 Fax: 917.661.7801

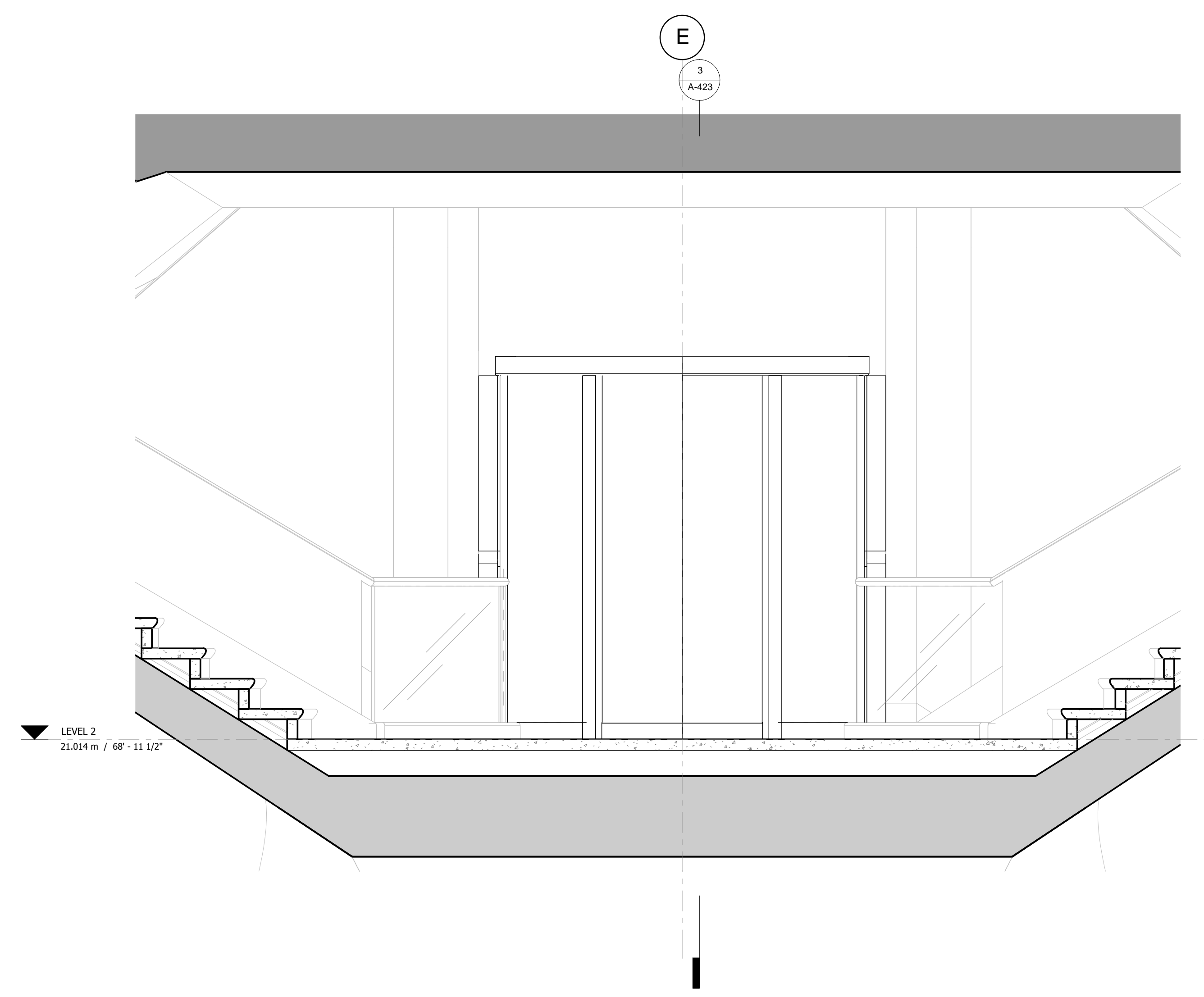
**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

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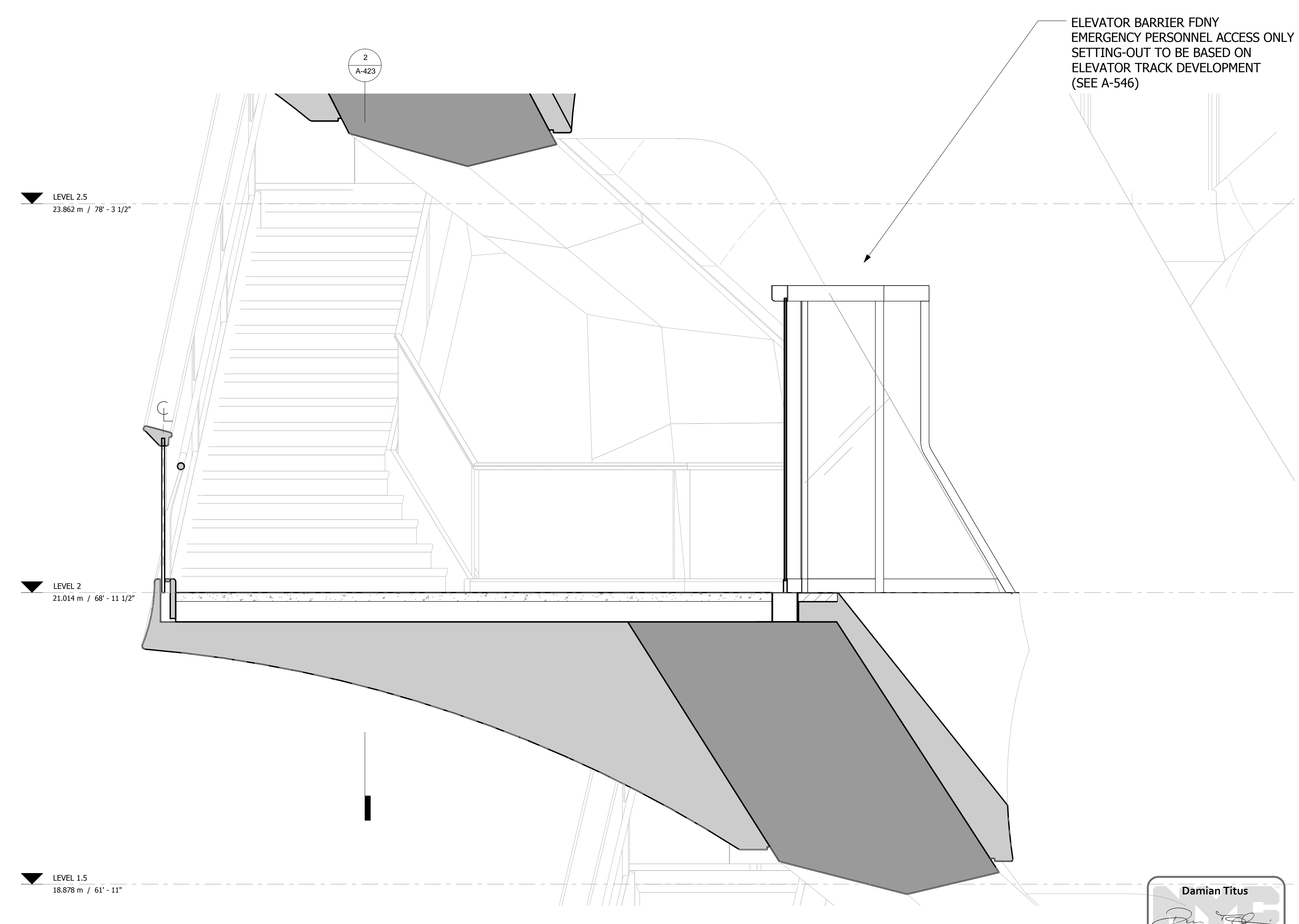
NOTES:
ACCESS TO THIS PLATFORM RESTRICTED BY A BARRIER AT TOP OF STAIRS LEADING TO PLATFORM (SEE A-422).
OPENABLE ONLY BY AUTHORIZED PERSONNEL FOR THEIR MAINTENANCE OR CLEANING ACCESS TO THIS AREA.



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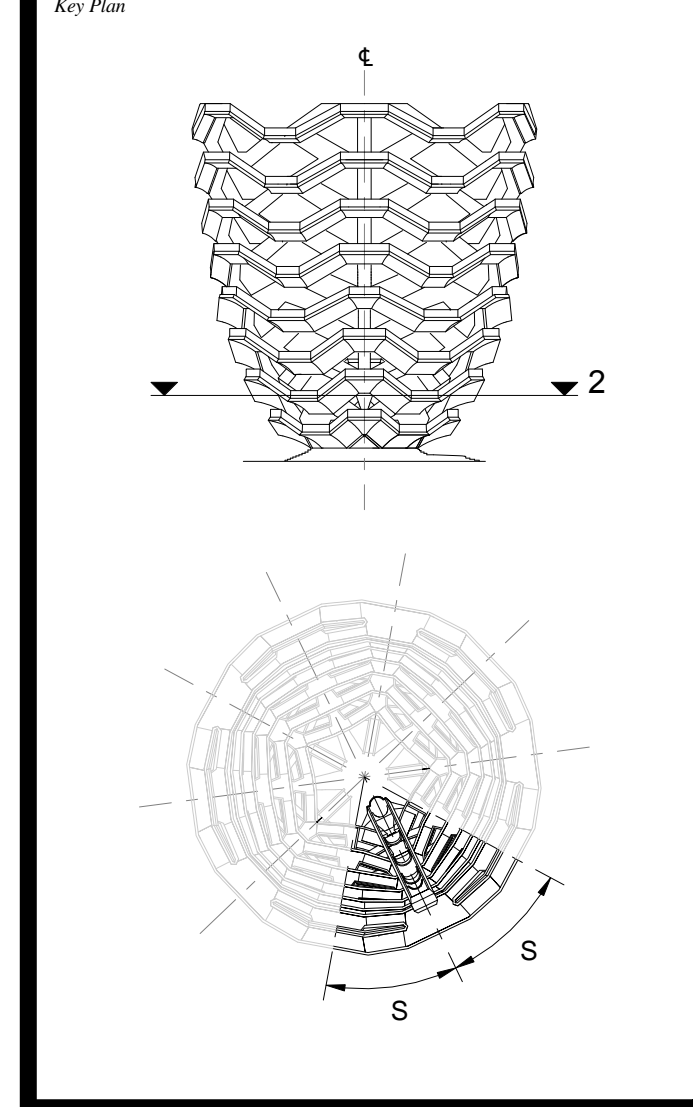


2 LONG SECTION
1 : 20



3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016

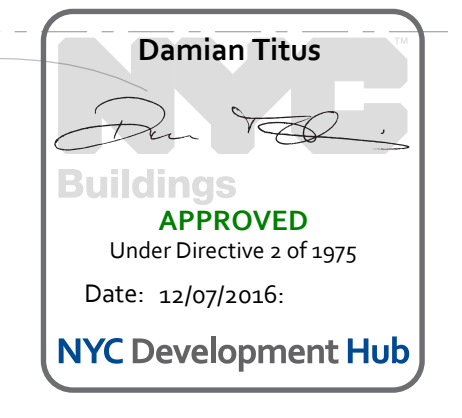


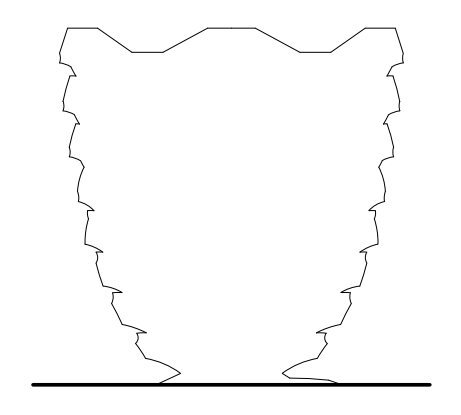
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Project No: 2296407
Drawn By: [Signature]
Sheet Number: [Signature]

HYE-VS-A-423

**SPINE PLATFORM
LEVEL 2 (DISPLAY 2)**

Sheet Number
A-423.00





Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

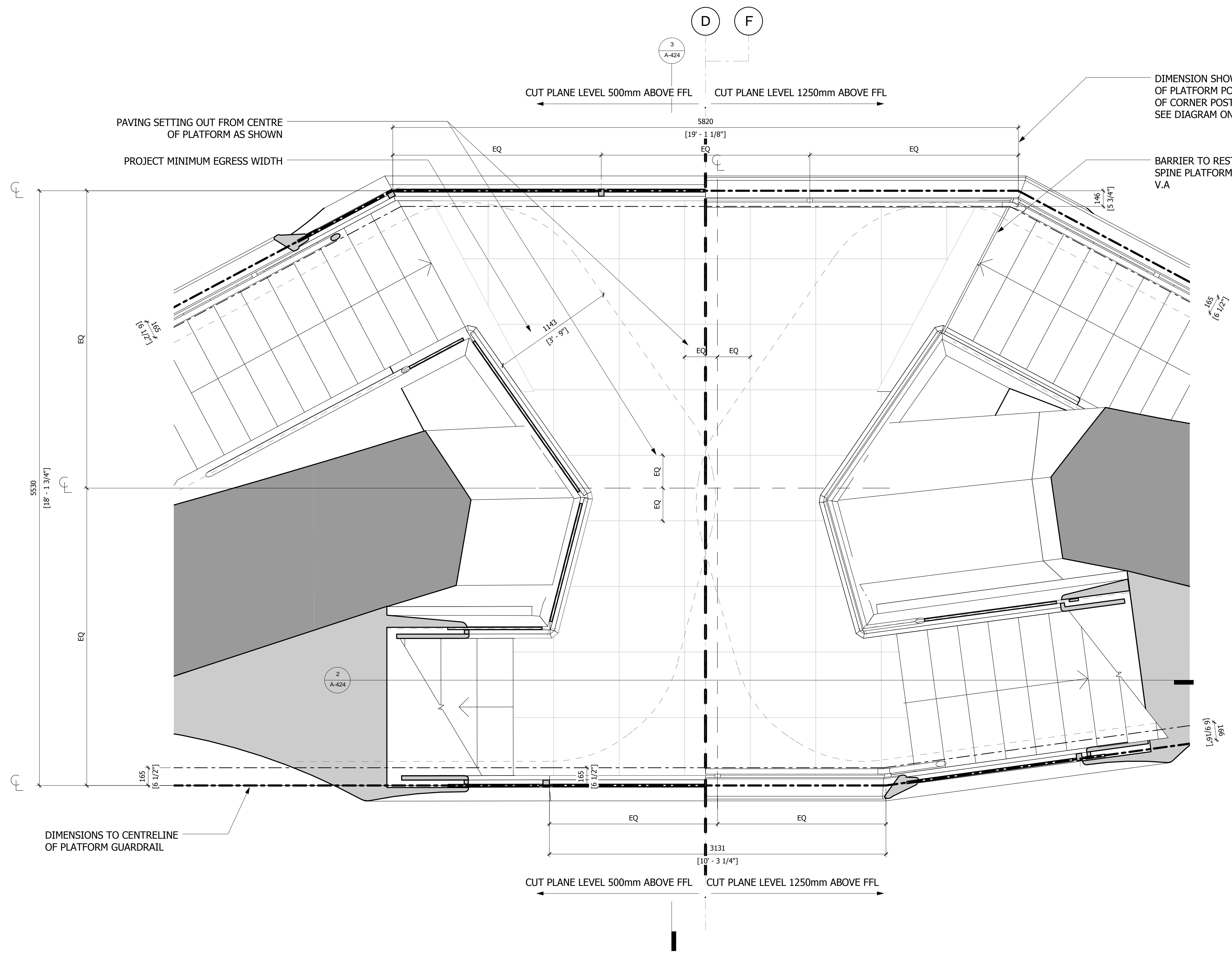
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

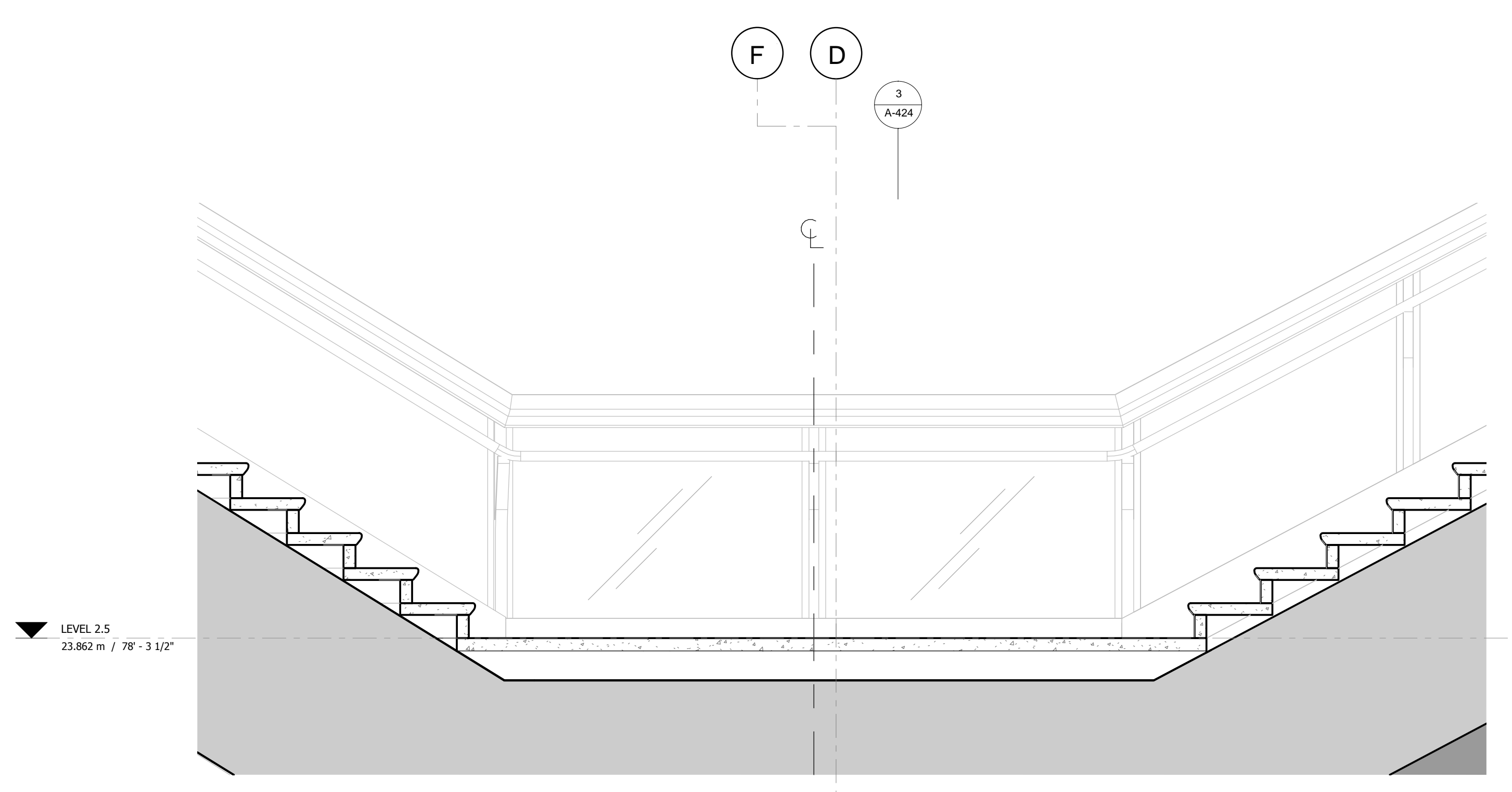
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

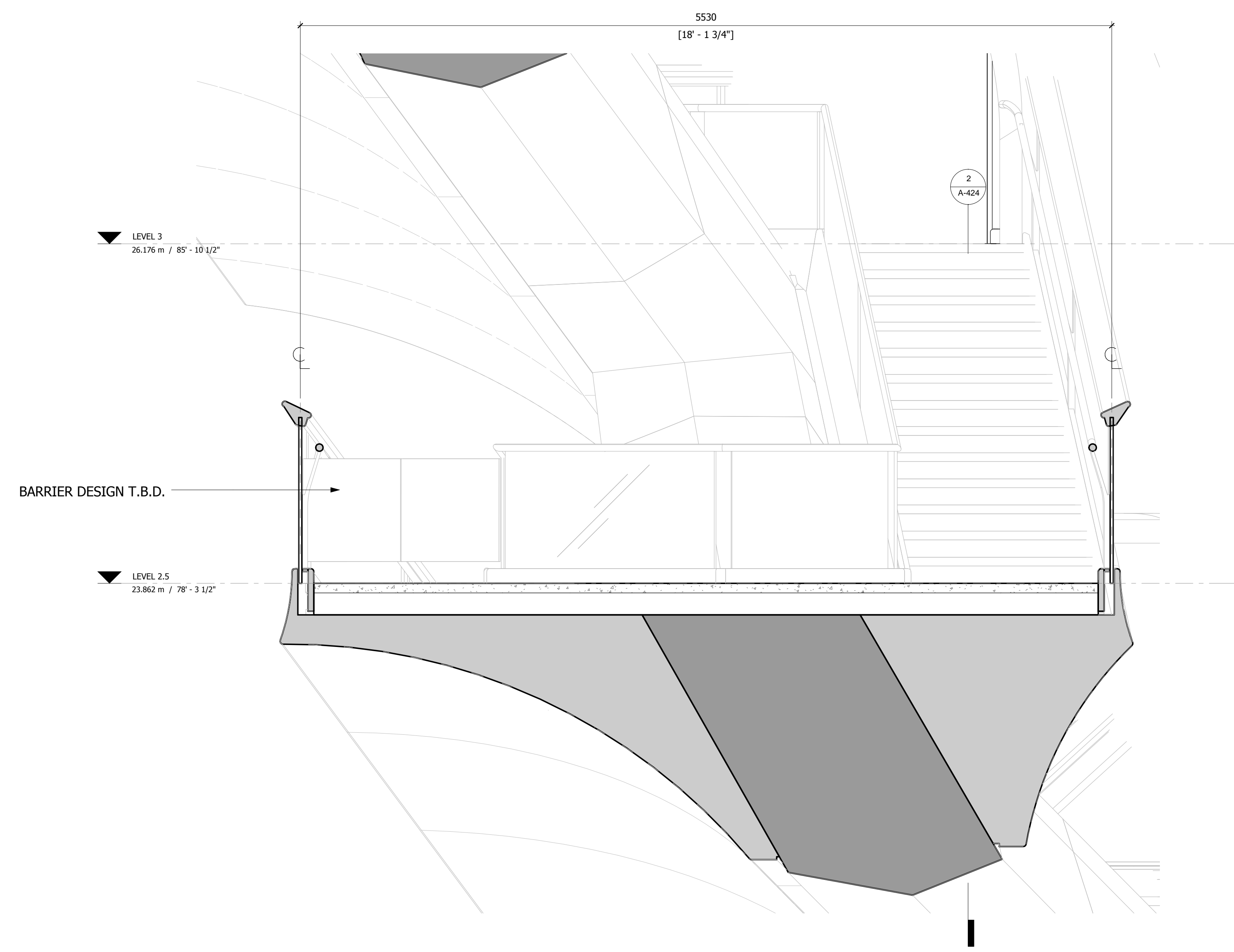
**CONFIDENTIAL
DO NOT
REPRODUCE**



1 PLAN
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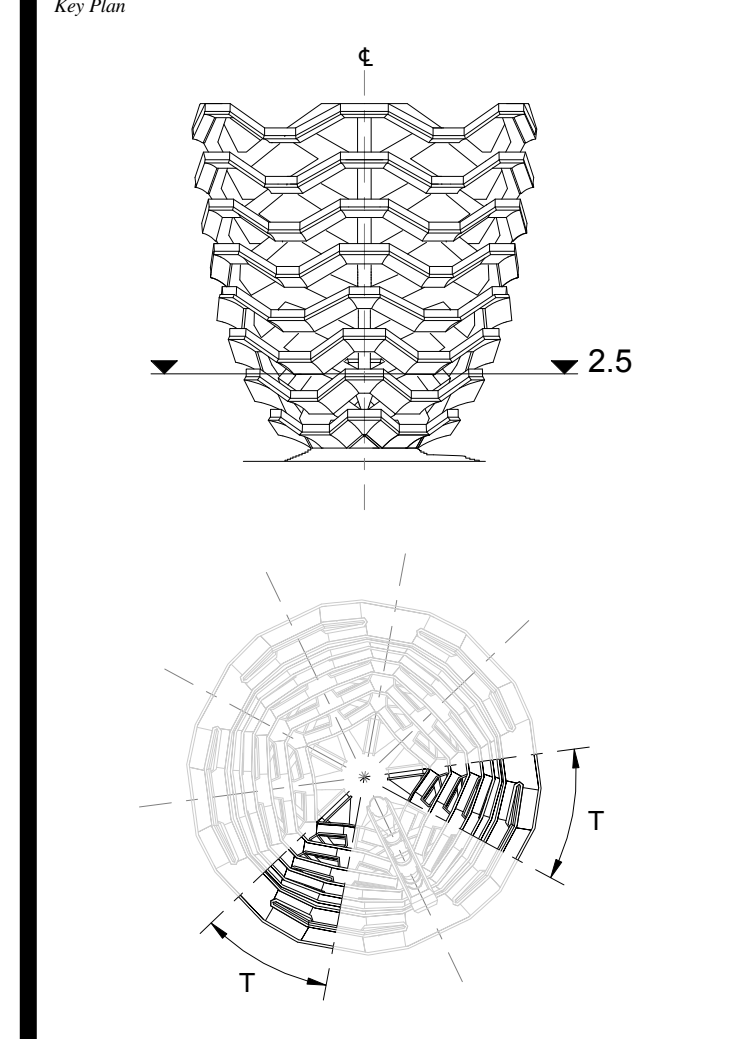


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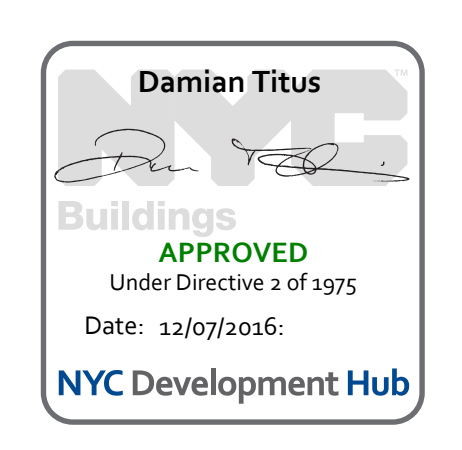
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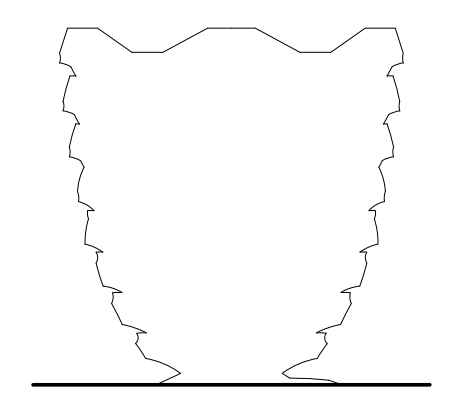
1 D.O.B. BUILDING PERMIT FILING 05/20/2016
No. Issue Date



Date: 05/29/15
Project No: 2296002
Drawn By: *[Signature]*
Sheet Number: **HYE-VS-A-424**

**TRANSITION PLATFORM
LEVEL 2.5 (DISPLAY 2)**
Drawing Number: **A-424.00**





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

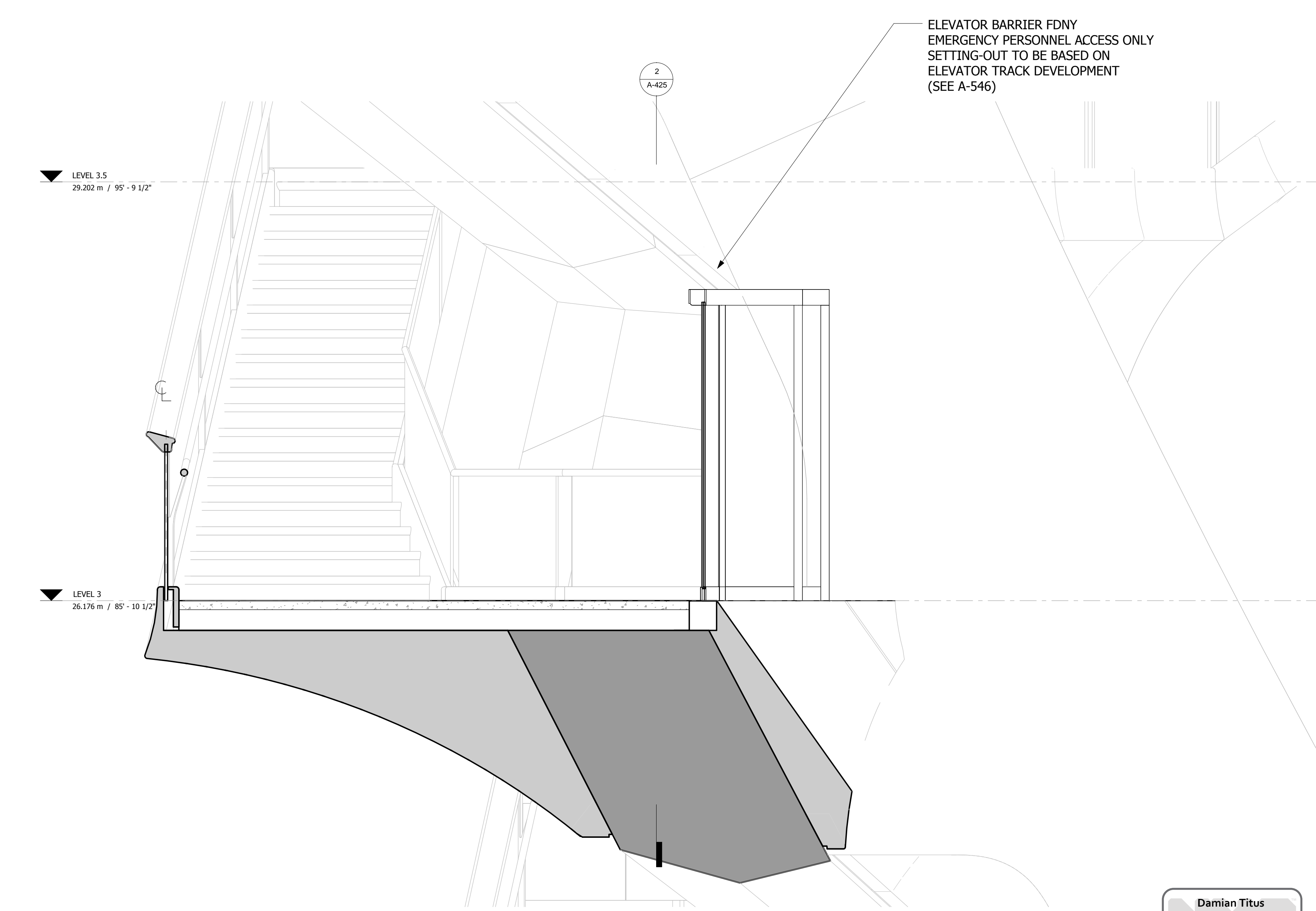
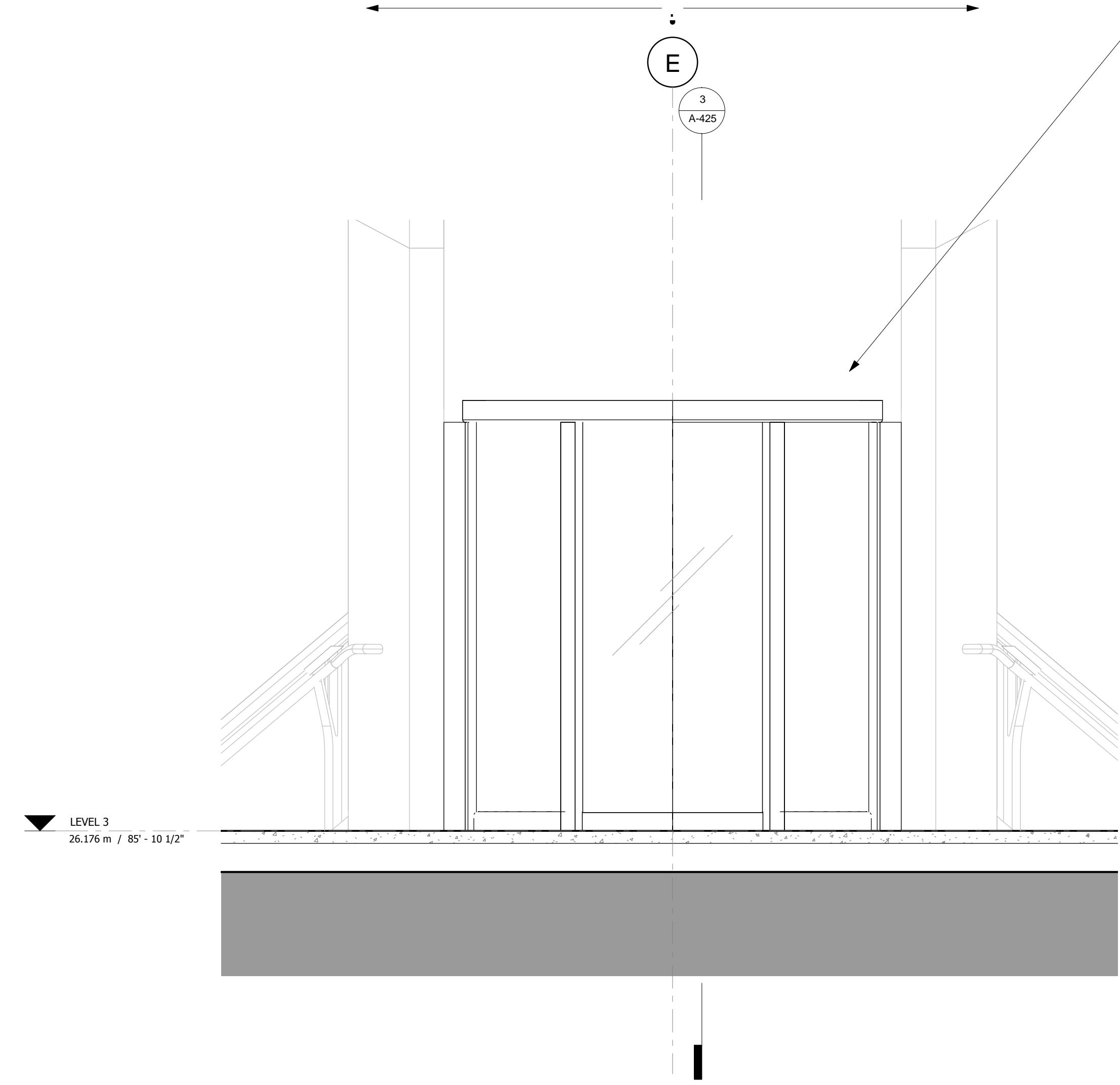
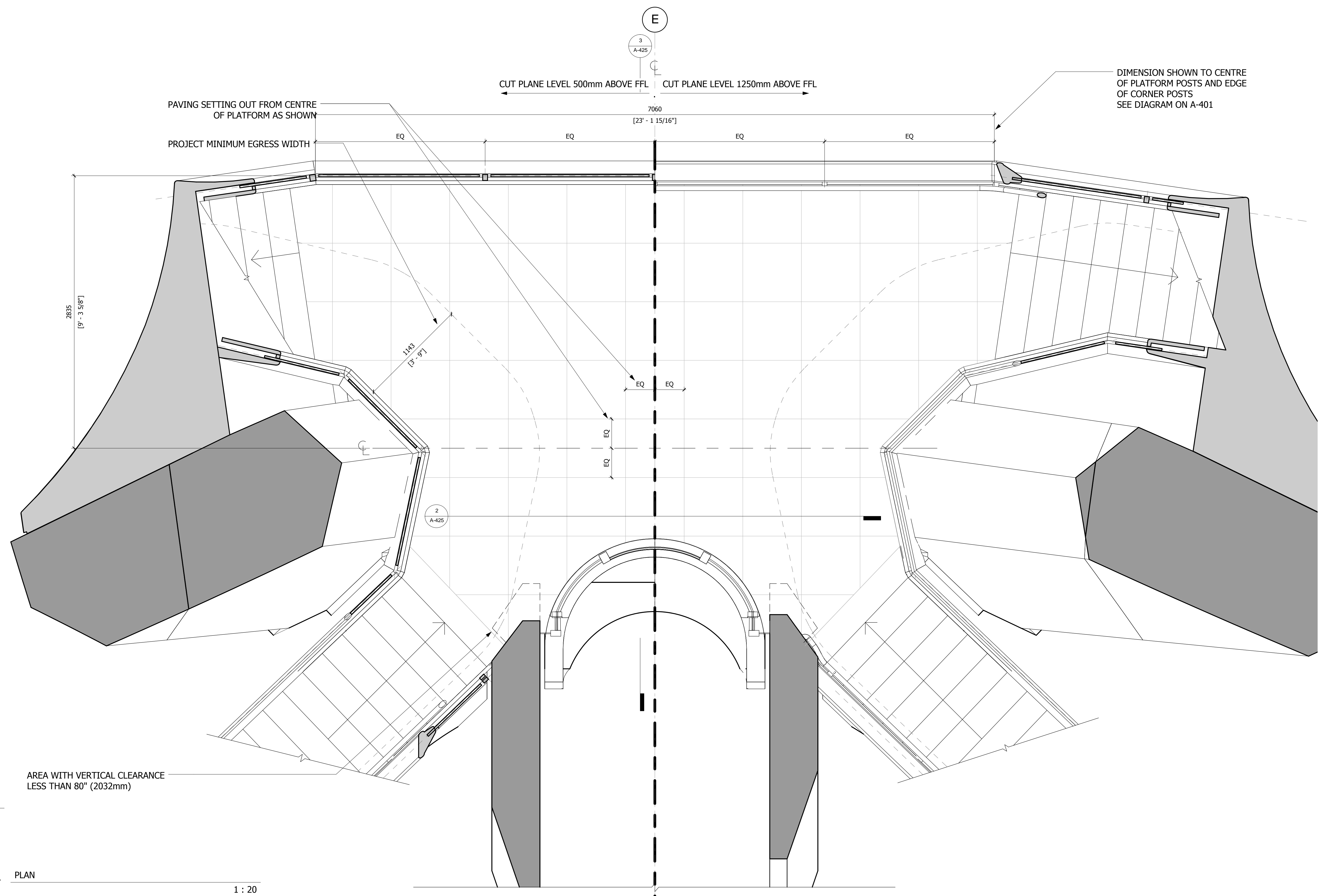
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

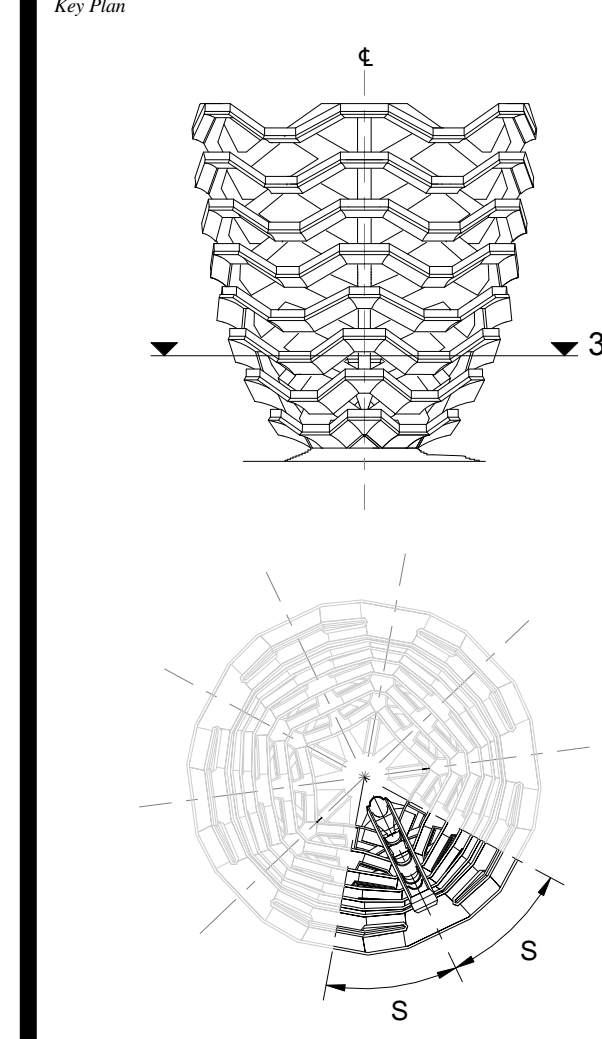
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

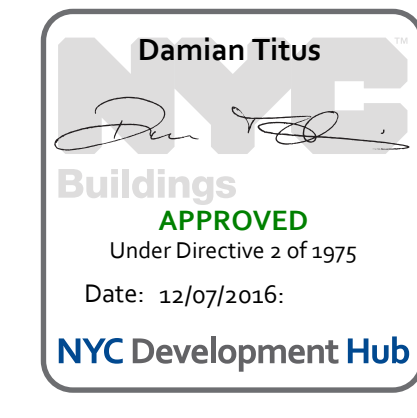


Date: 05/15/14
 Project No: 2298407
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-425

REGISTERED ARCHITECT
 STATE OF NEW YORK

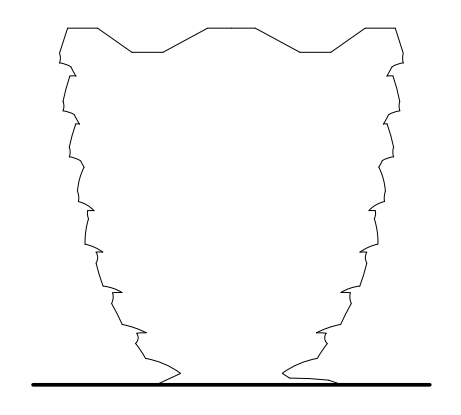
**SPINE PLATFORM
 LEVEL 3 (DISPLAY 3)**

Project Number:
A-425.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.866.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

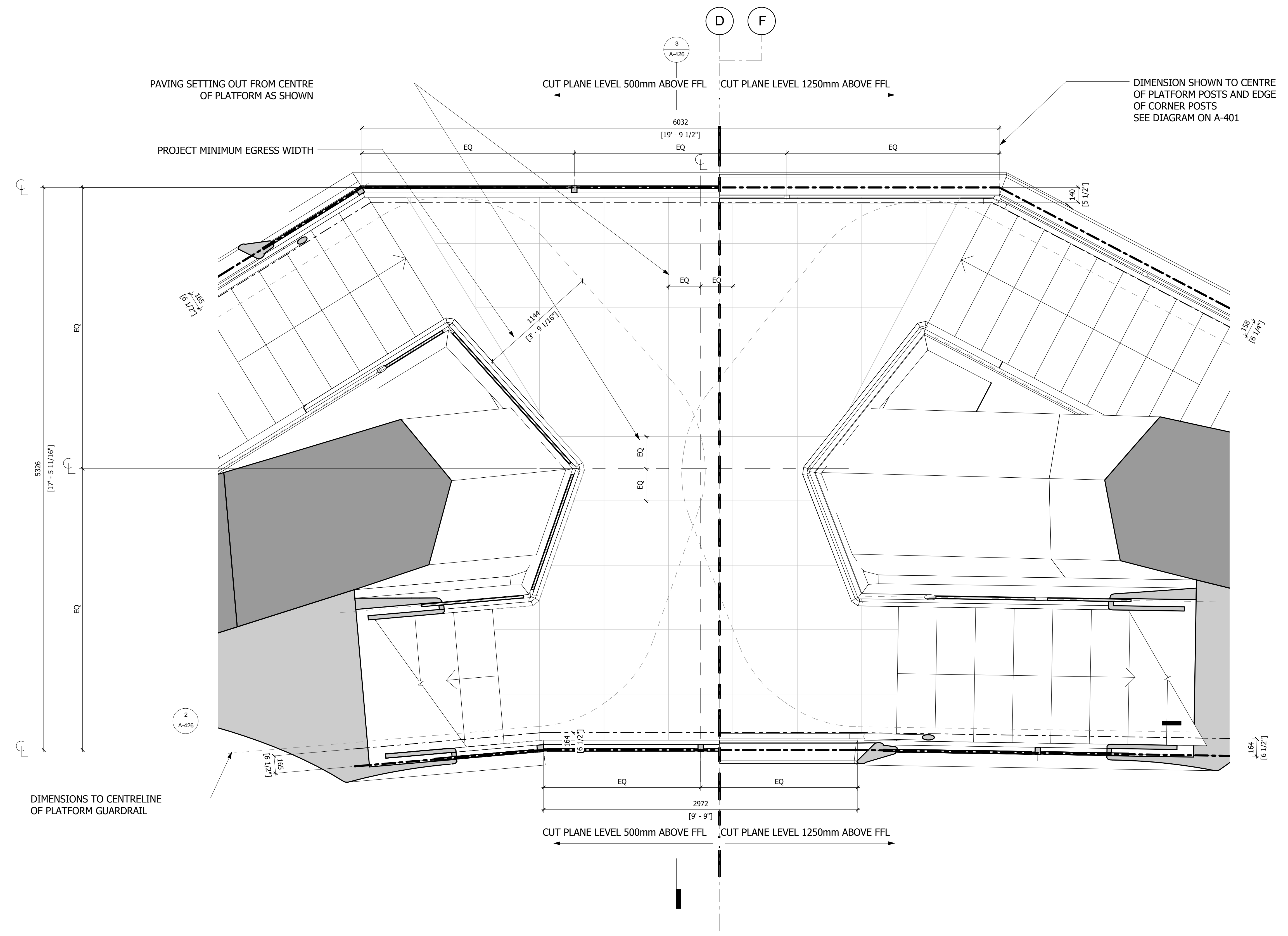
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

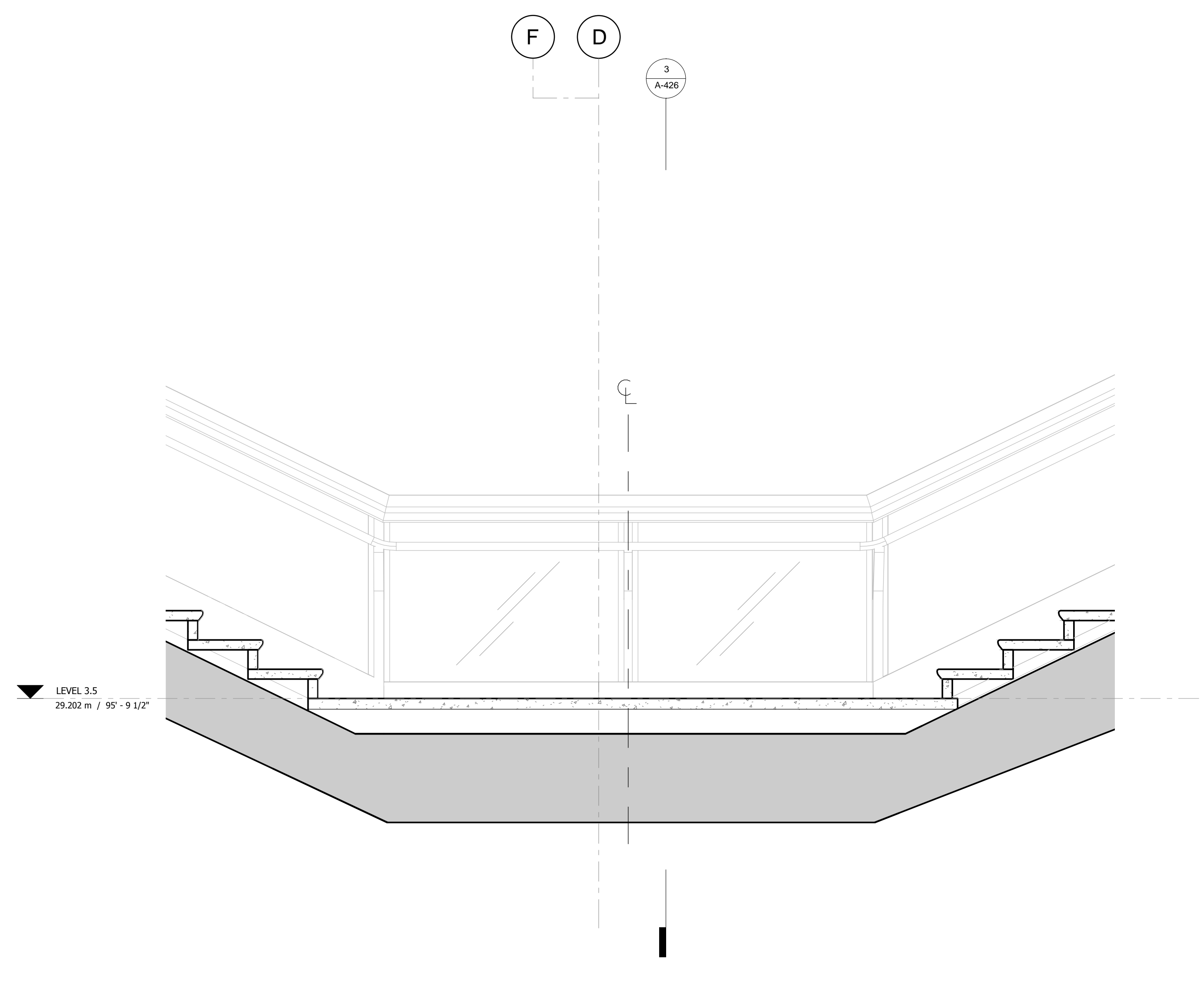
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

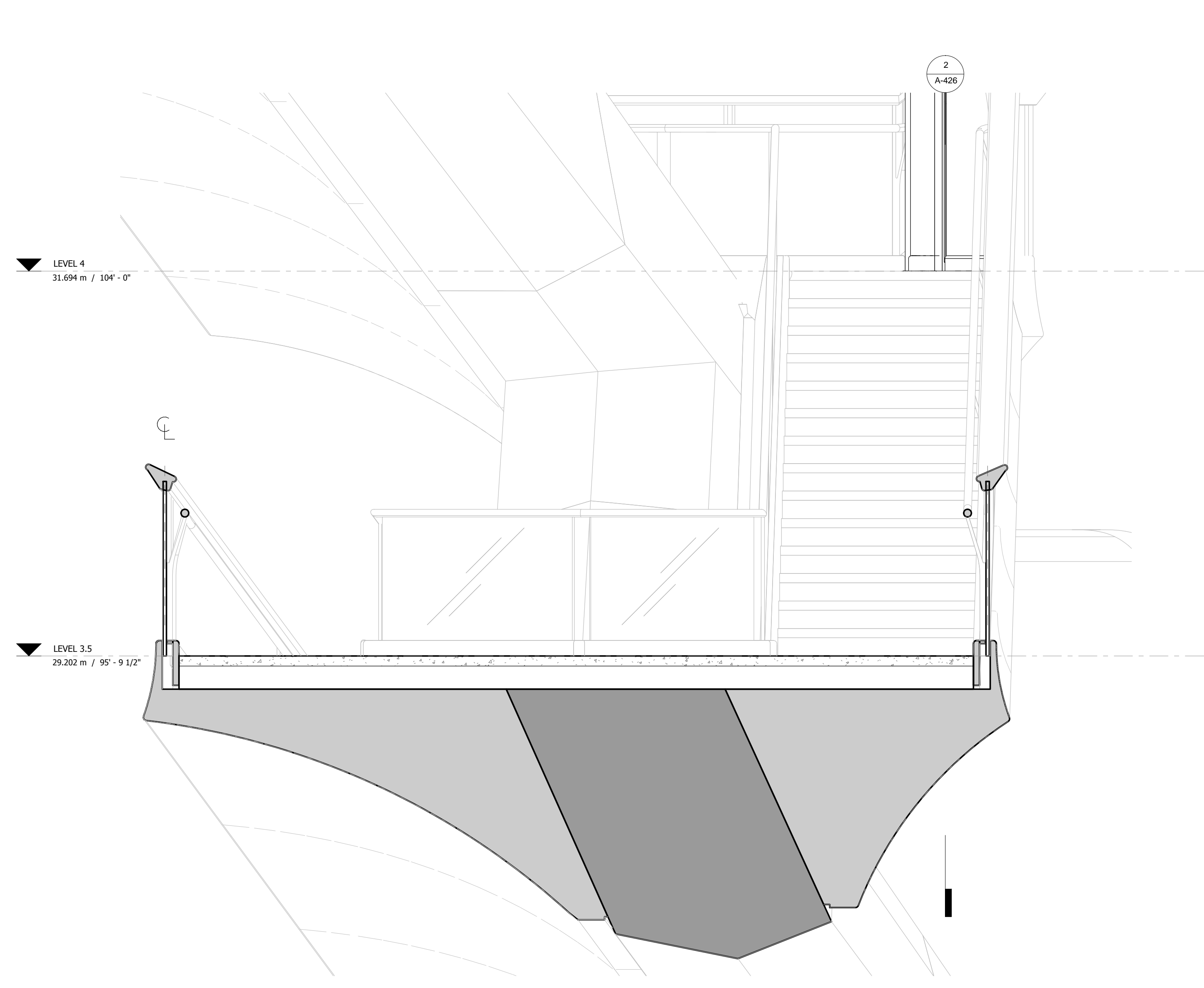
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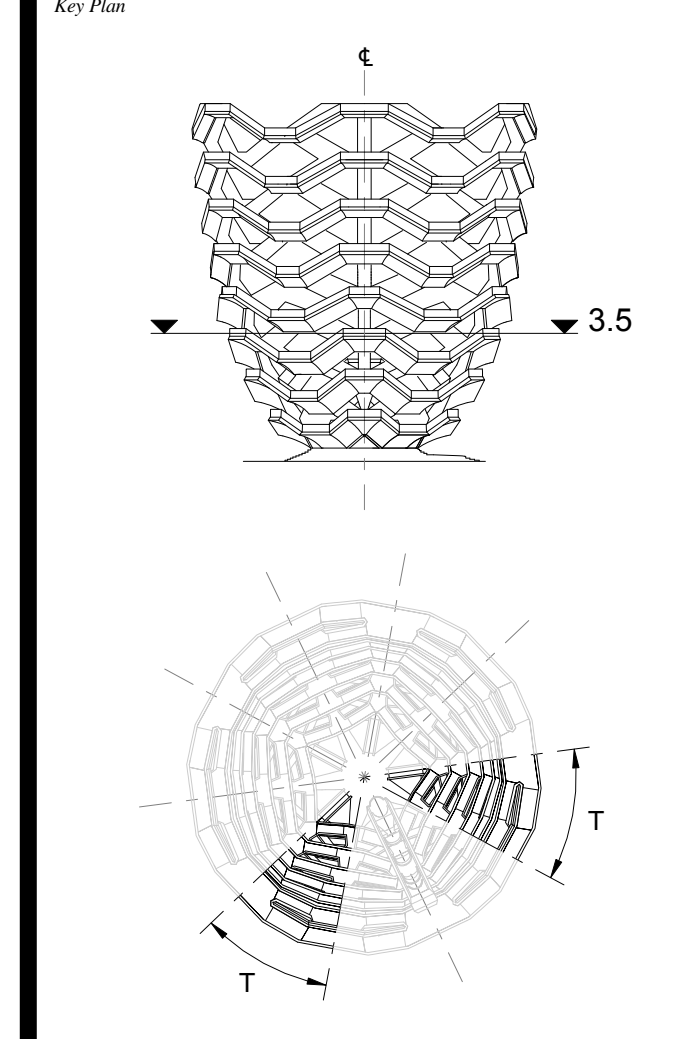


2 LONG SECTION
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3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Issue Date

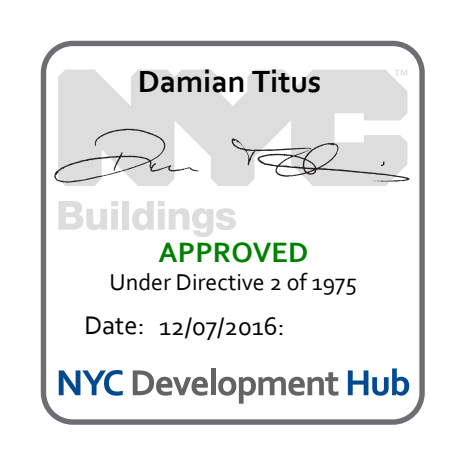


Date: 05/29/15
 Project No: 2298407
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-426

HYE-VS-A-426

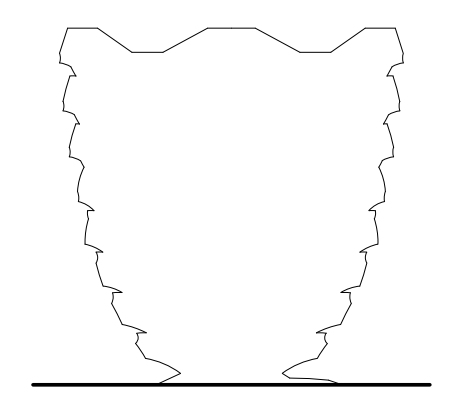
**TRANSITION PLATFORM
LEVEL 3.5 (DISPLAY 3)**

Project Number:
A-426.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

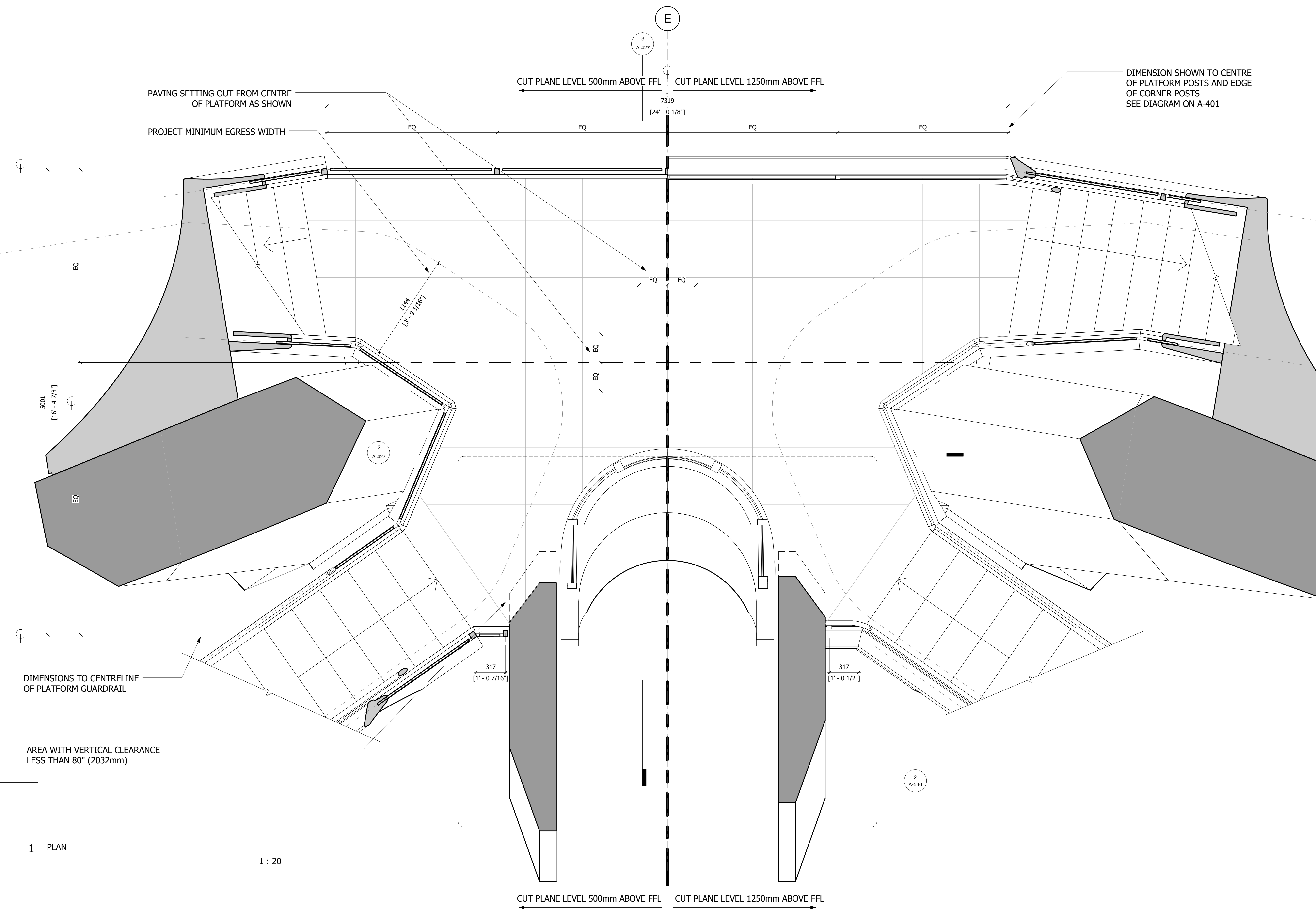
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

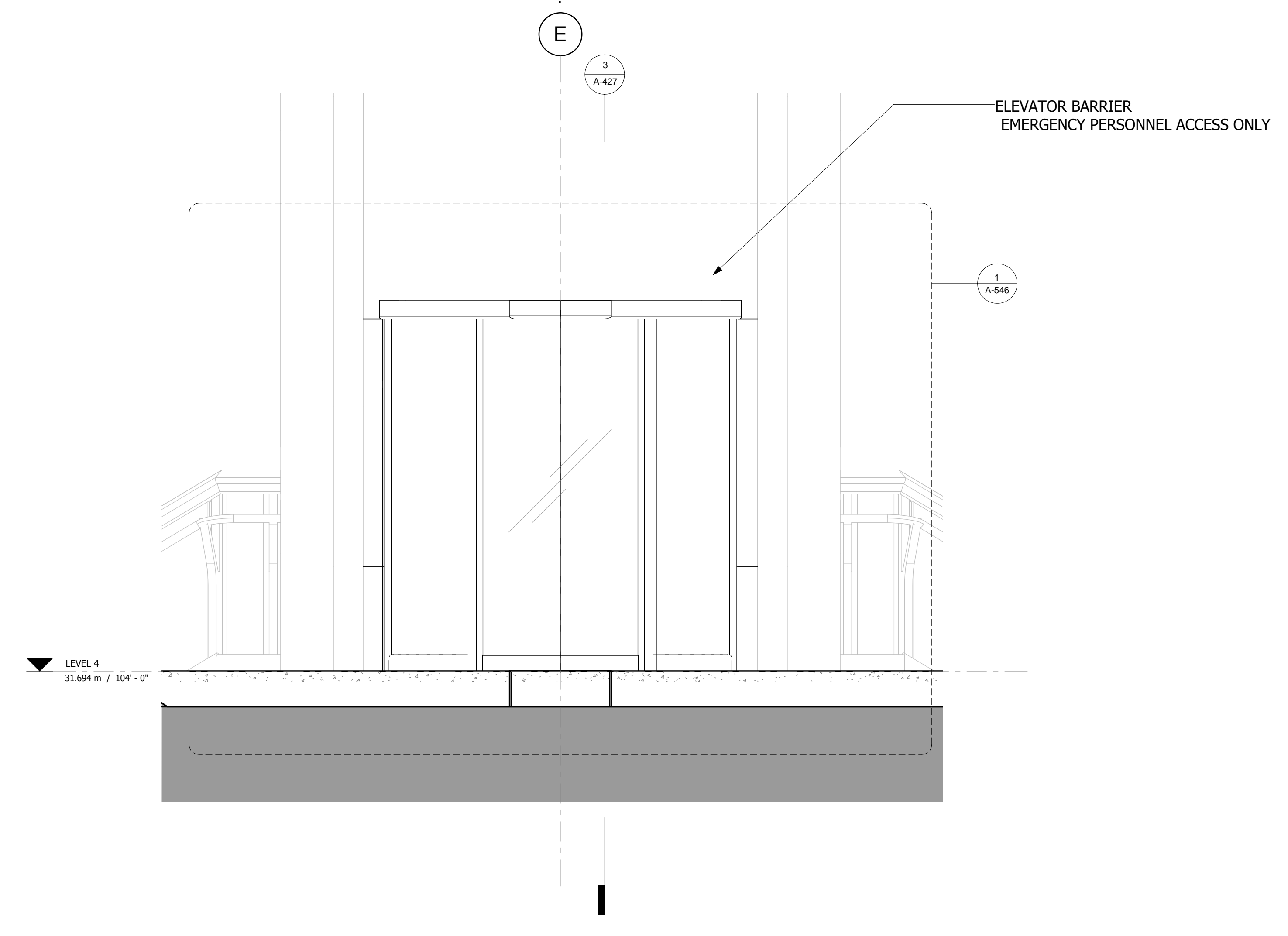
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

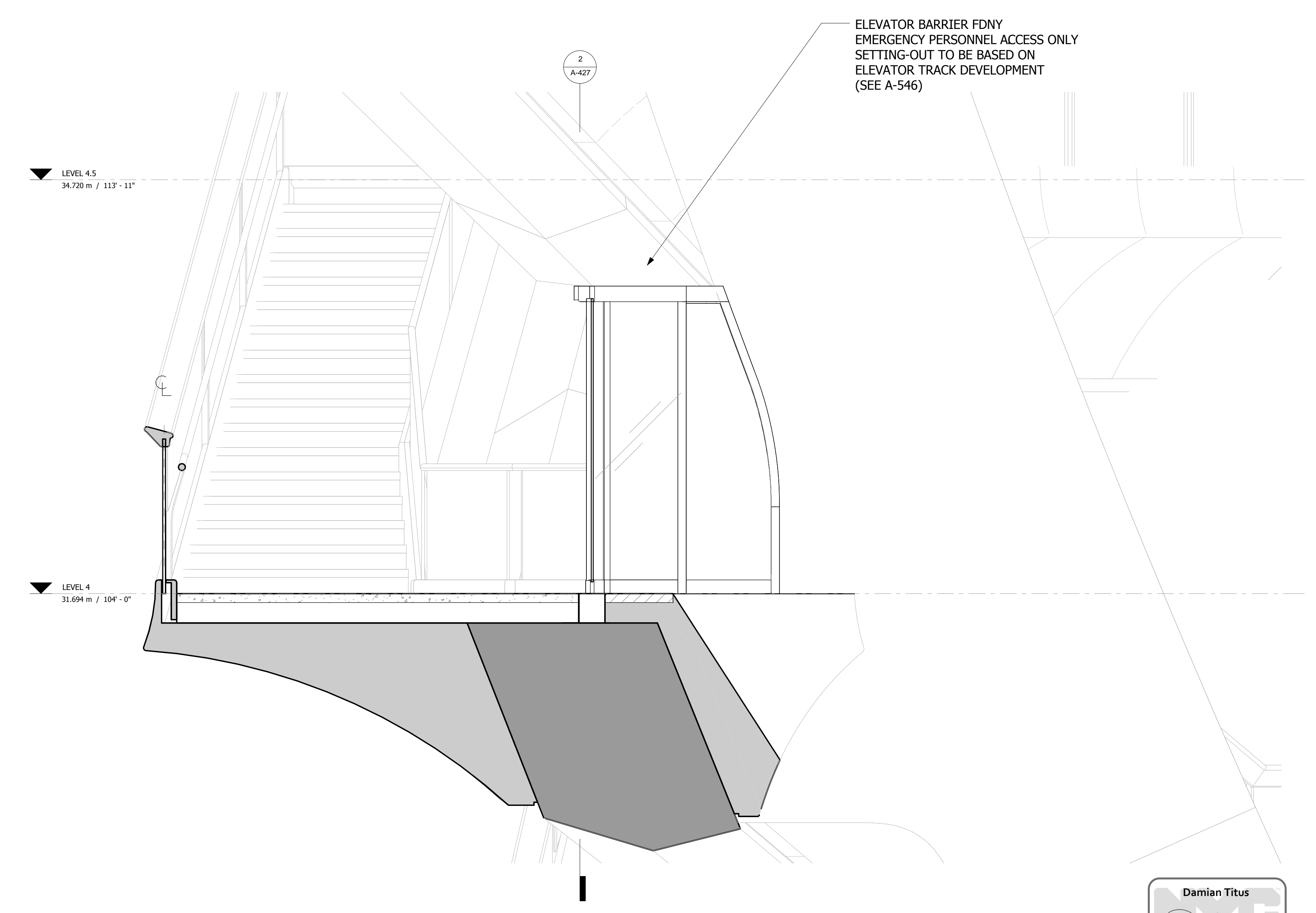
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DO NOT
REPRODUCE**



1 PLAN
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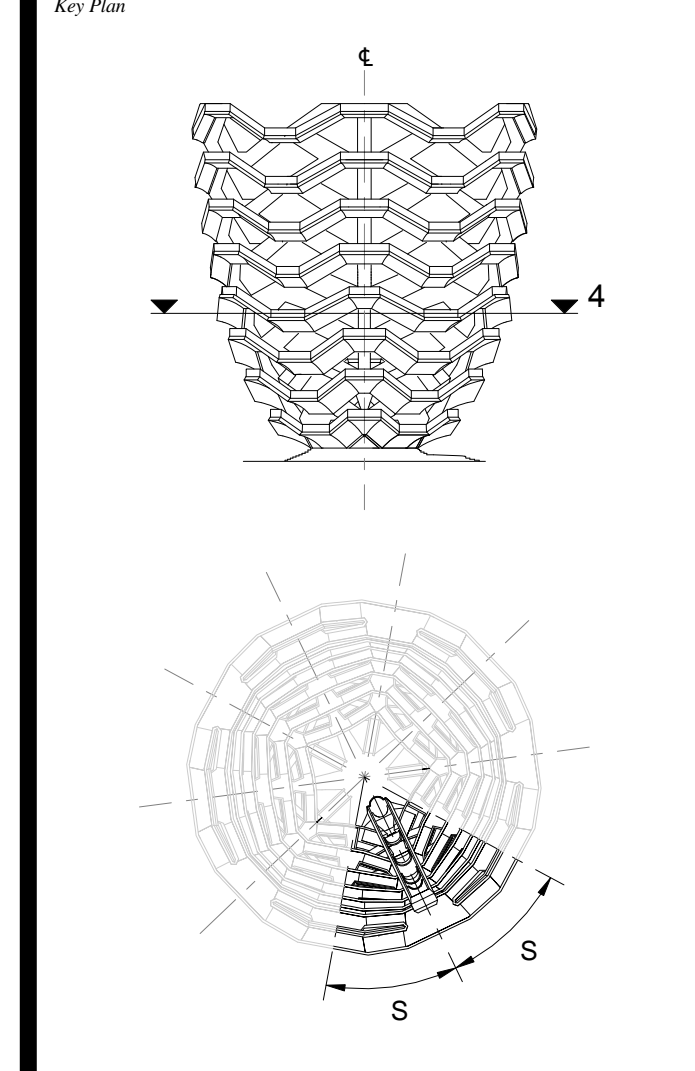


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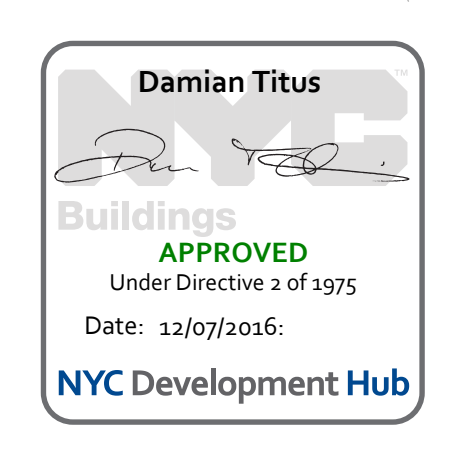
3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date



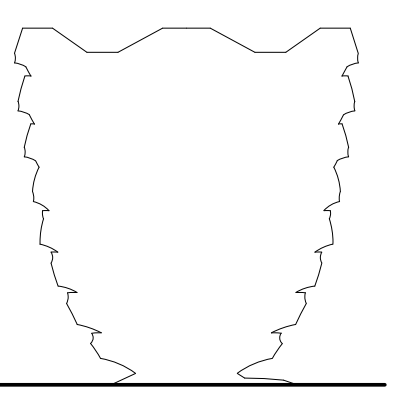
Date: 05/15/14
 Project No: 2298407
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-427

HYE-VS-A-427
**SPINE PLATFORM
LEVEL 4 (DISPLAY 4)**
 Project Number: A-427.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



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 60 Columbus Circle
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Oxford Properties Group
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 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

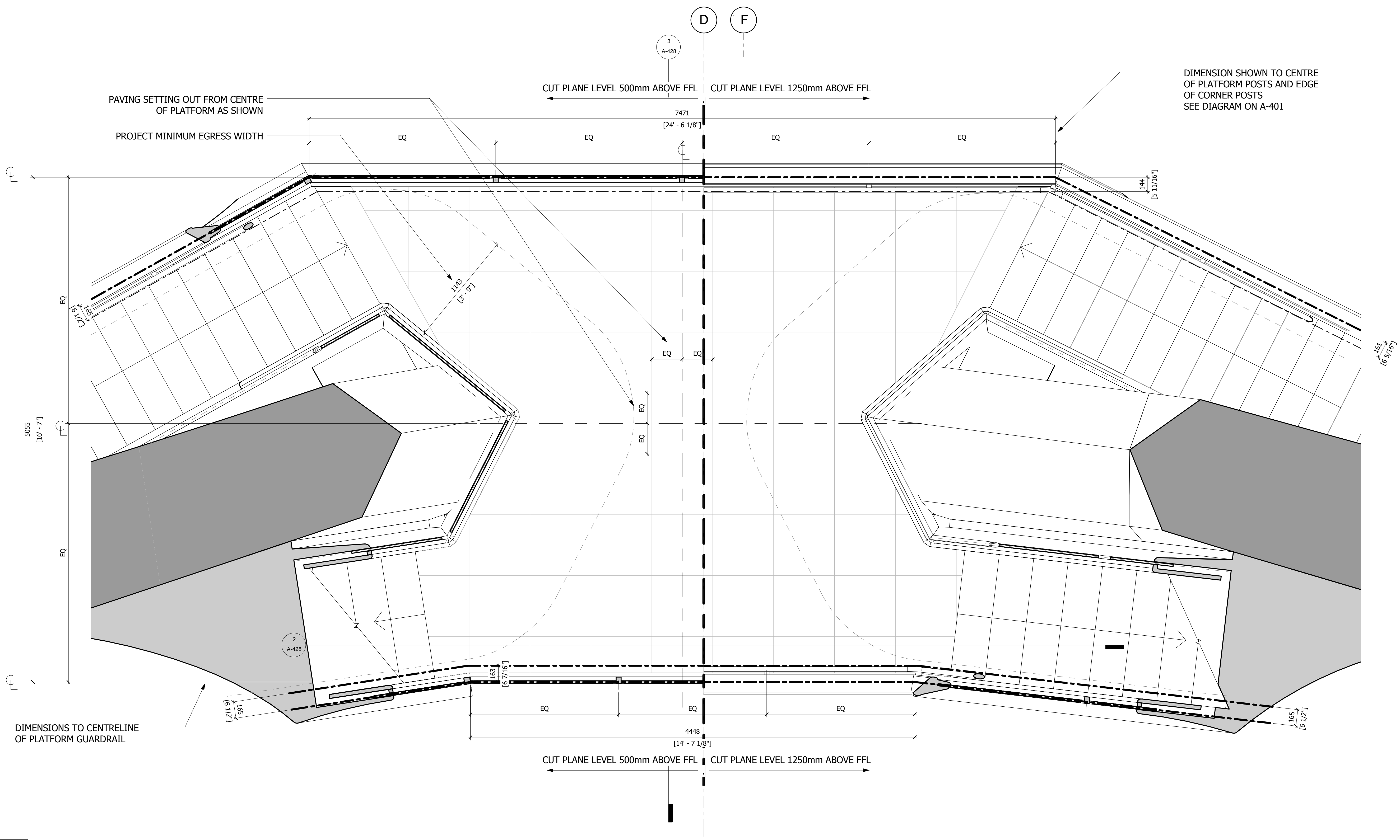
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

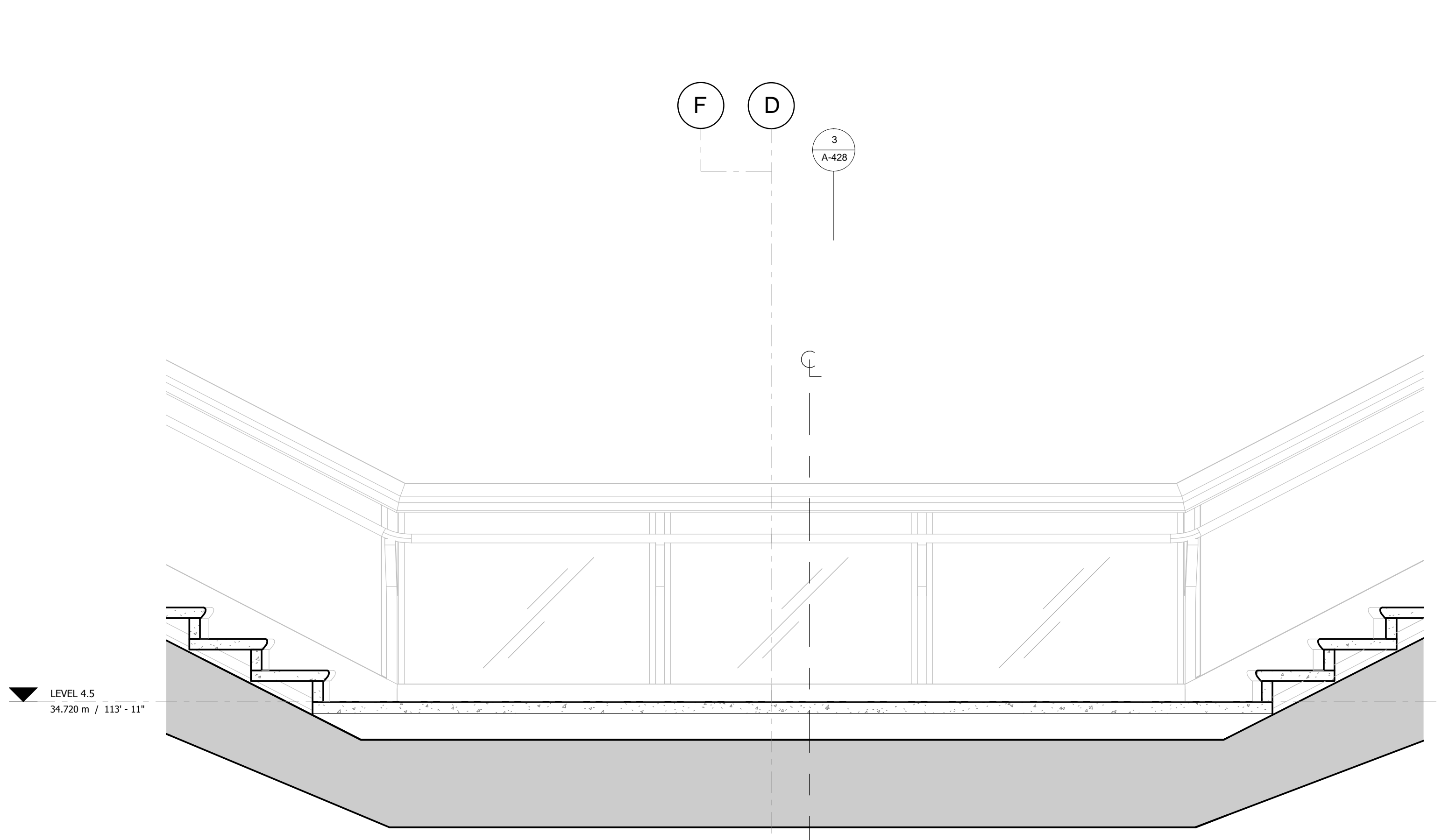
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

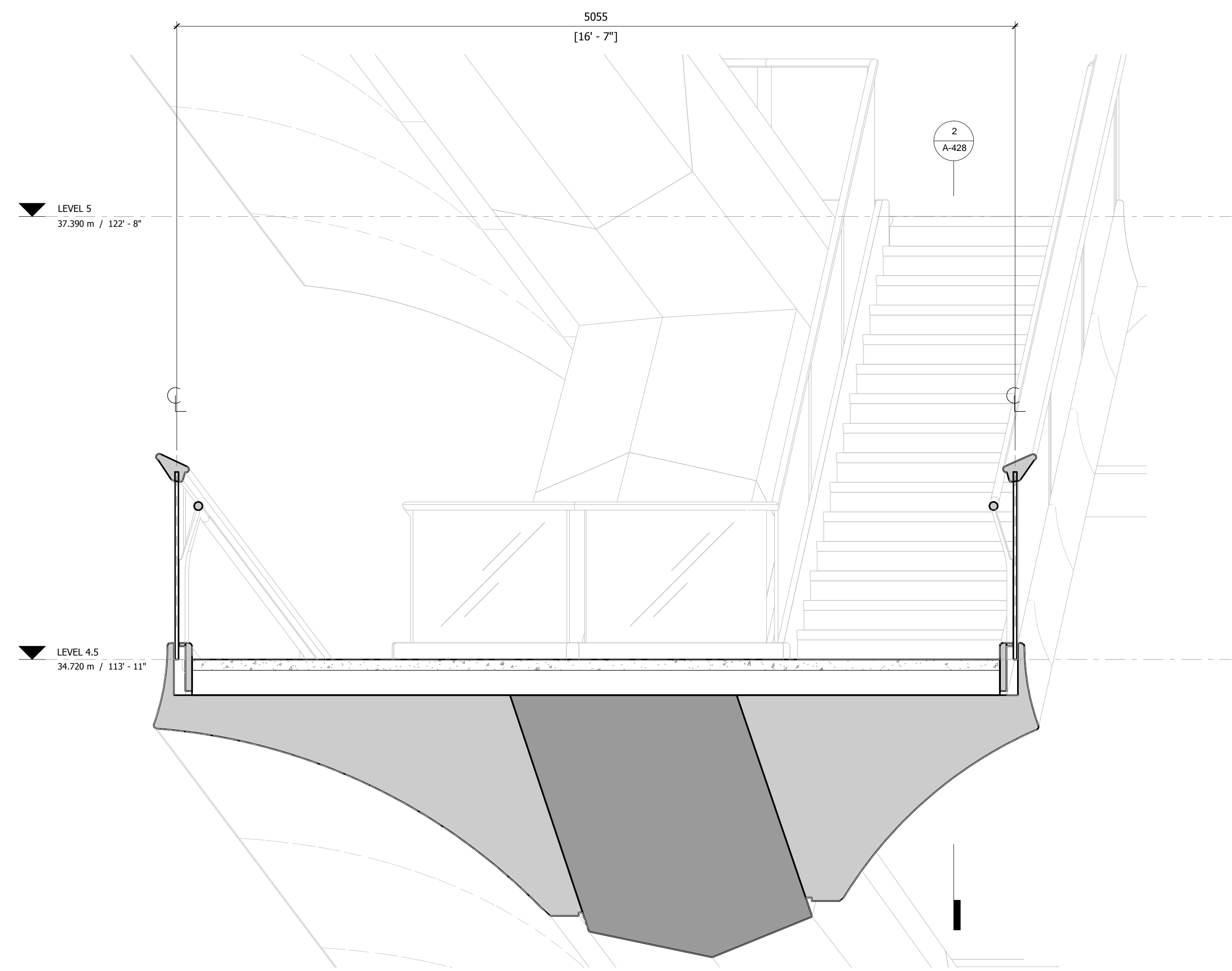
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DO NOT
REPRODUCE**



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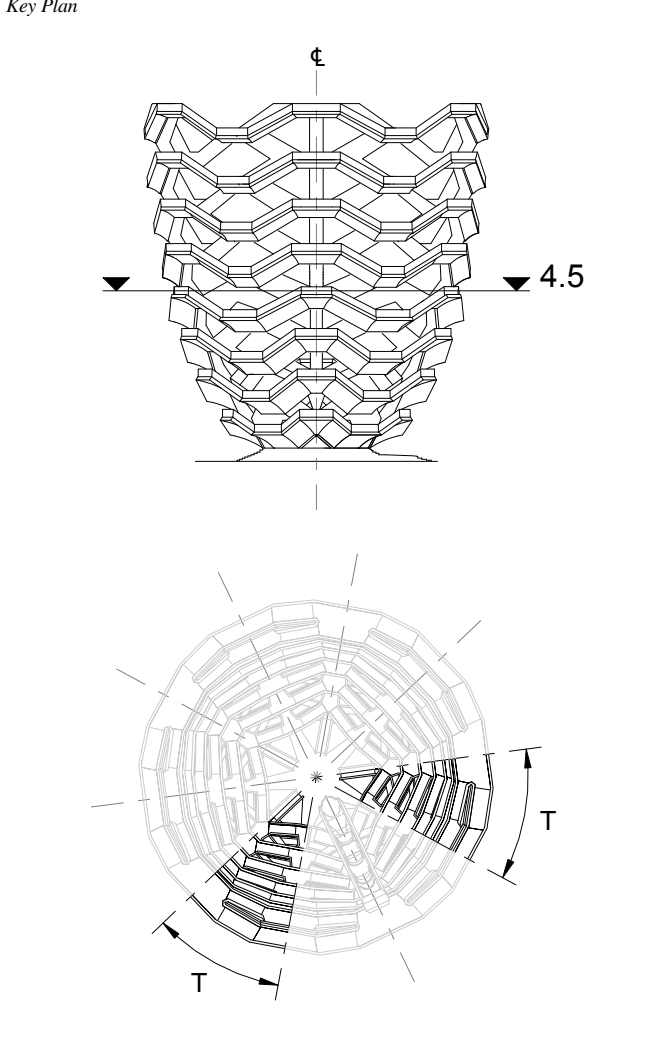


2 LONG SECTION
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3 CROSS SECTION
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D.O.B. BUILDING PERMIT FILING 05/20/2016

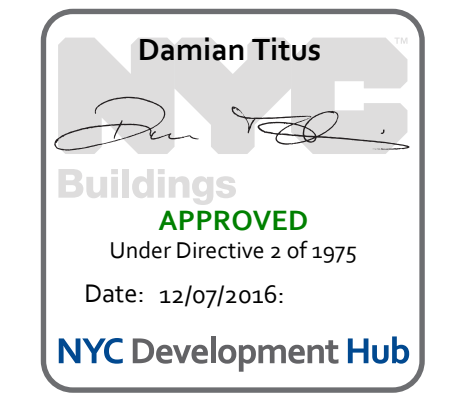


Date: 05/29/15
 Project No: 2298002
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-428

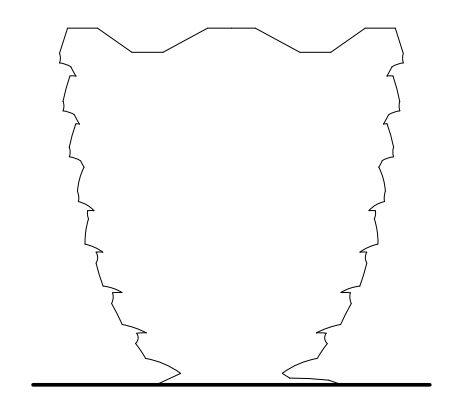
**TRANSITION PLATFORM
LEVEL 4.5 (DISPLAY 4)**

Project Number:
A-428.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



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 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

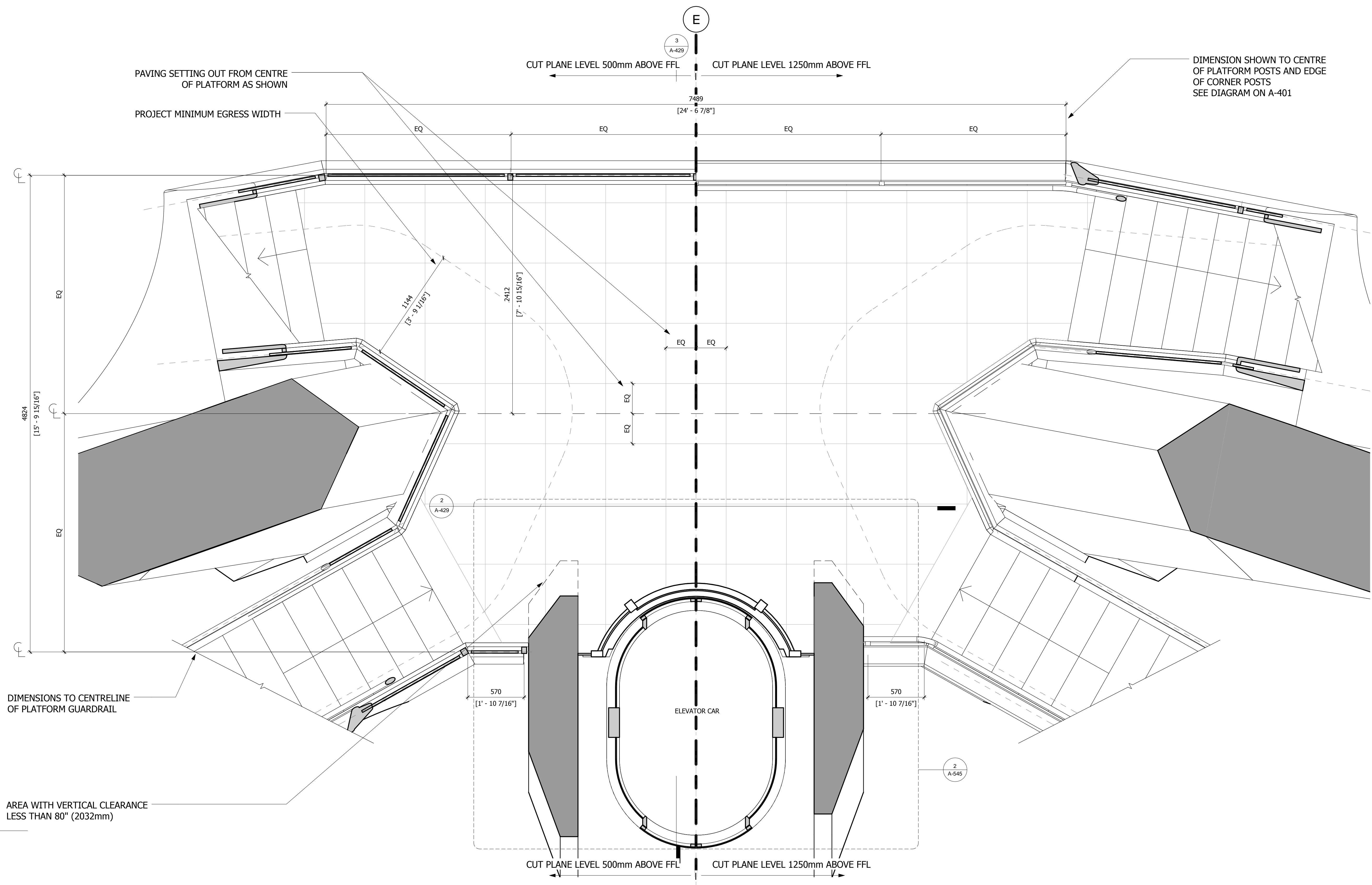
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Gray's Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

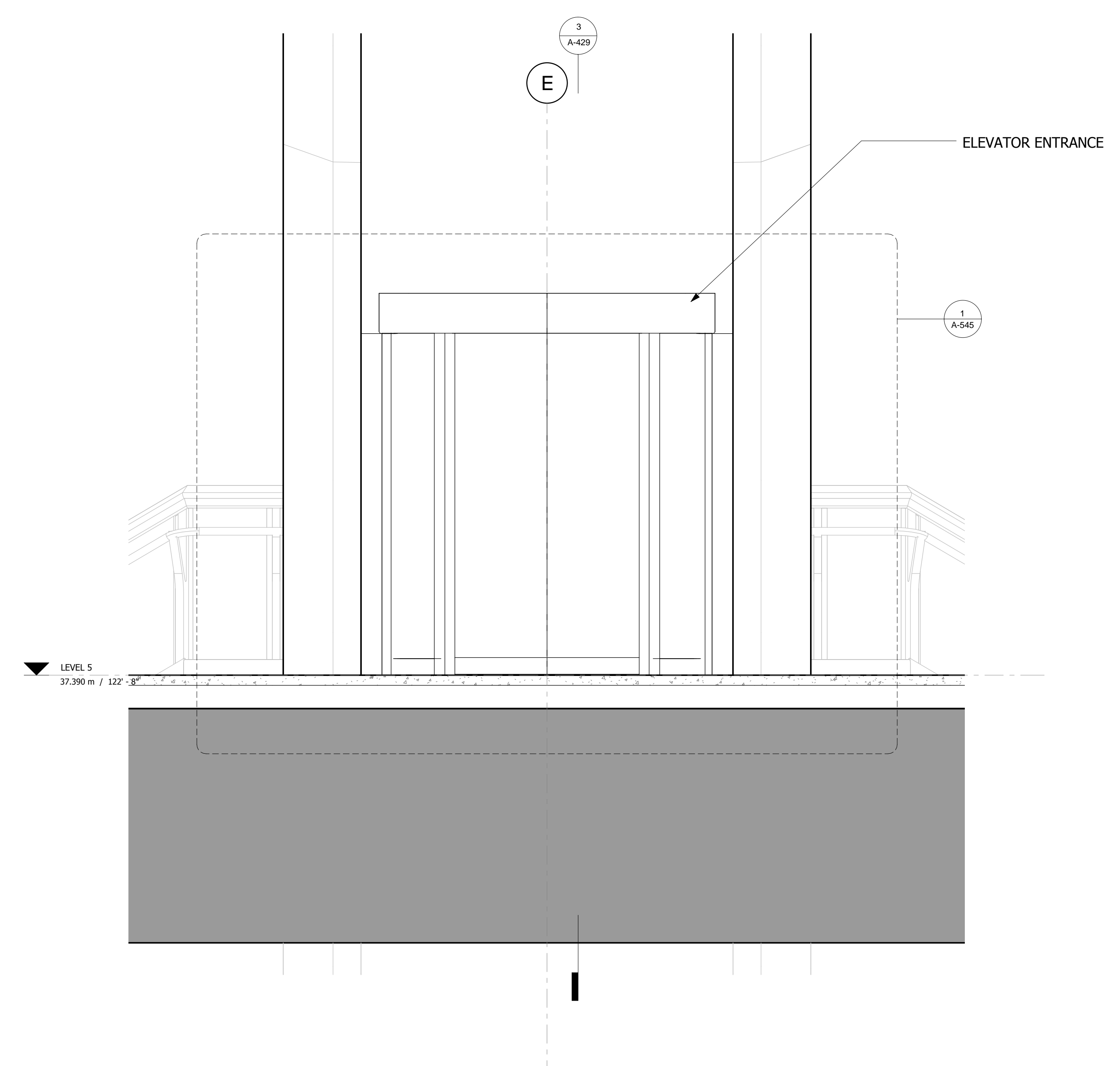
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 West Street
 New York, NY 10005
 Tel: 212.896.3000

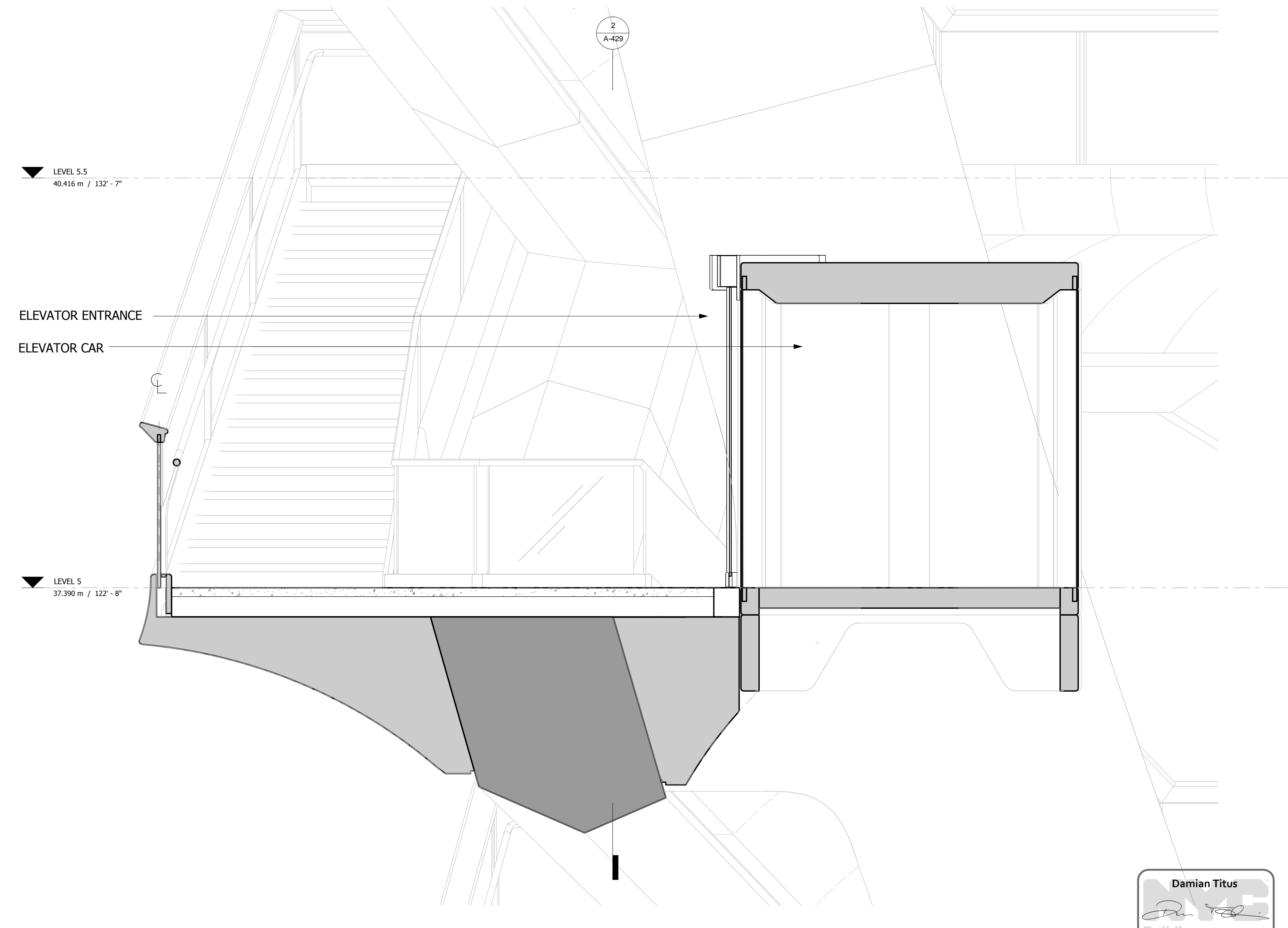
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DO NOT
REPRODUCE**



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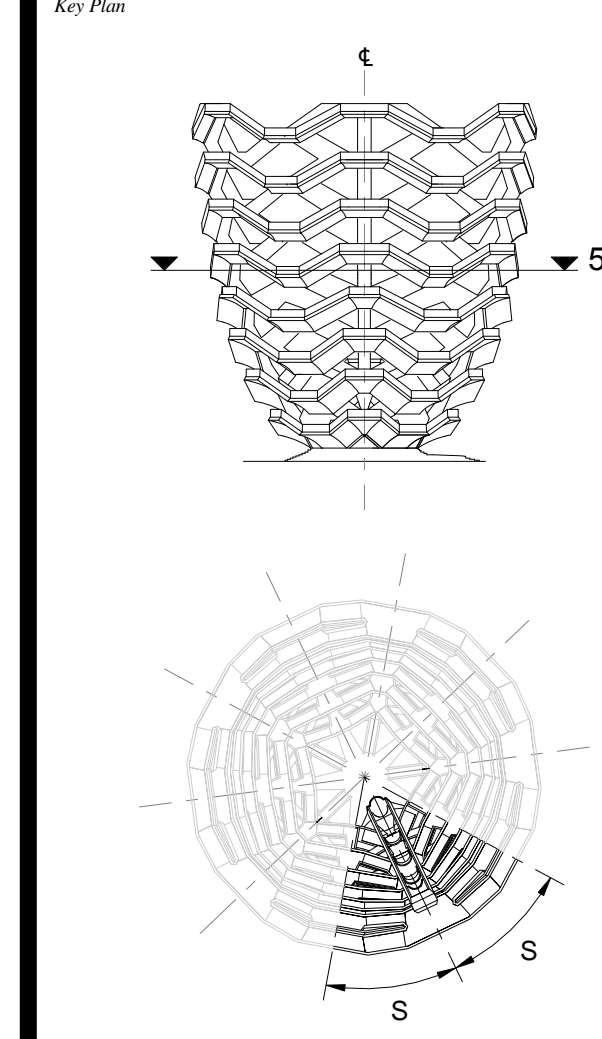


2 LONG SECTION
1 : 20



3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Issue Date

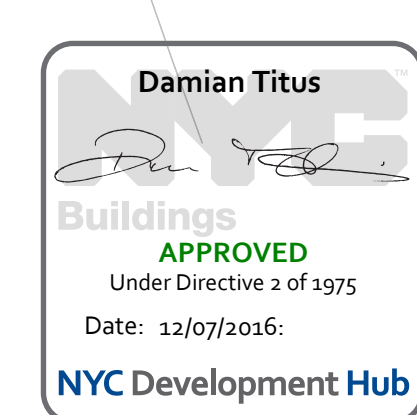


Date: 05/15/14
 Project No: 2298007
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-429

HYE-VS-A-429

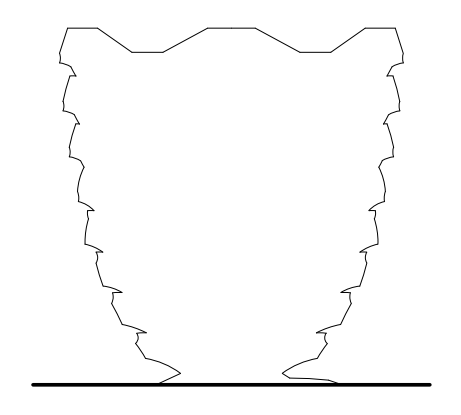
**SPINE PLATFORM
LEVEL 5 (DISPLAY 5)**

Sheet Number:
A-429.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
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 60 Columbus Circle
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 Tel: 212.801.1000 Fax: 212.801.1048

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 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

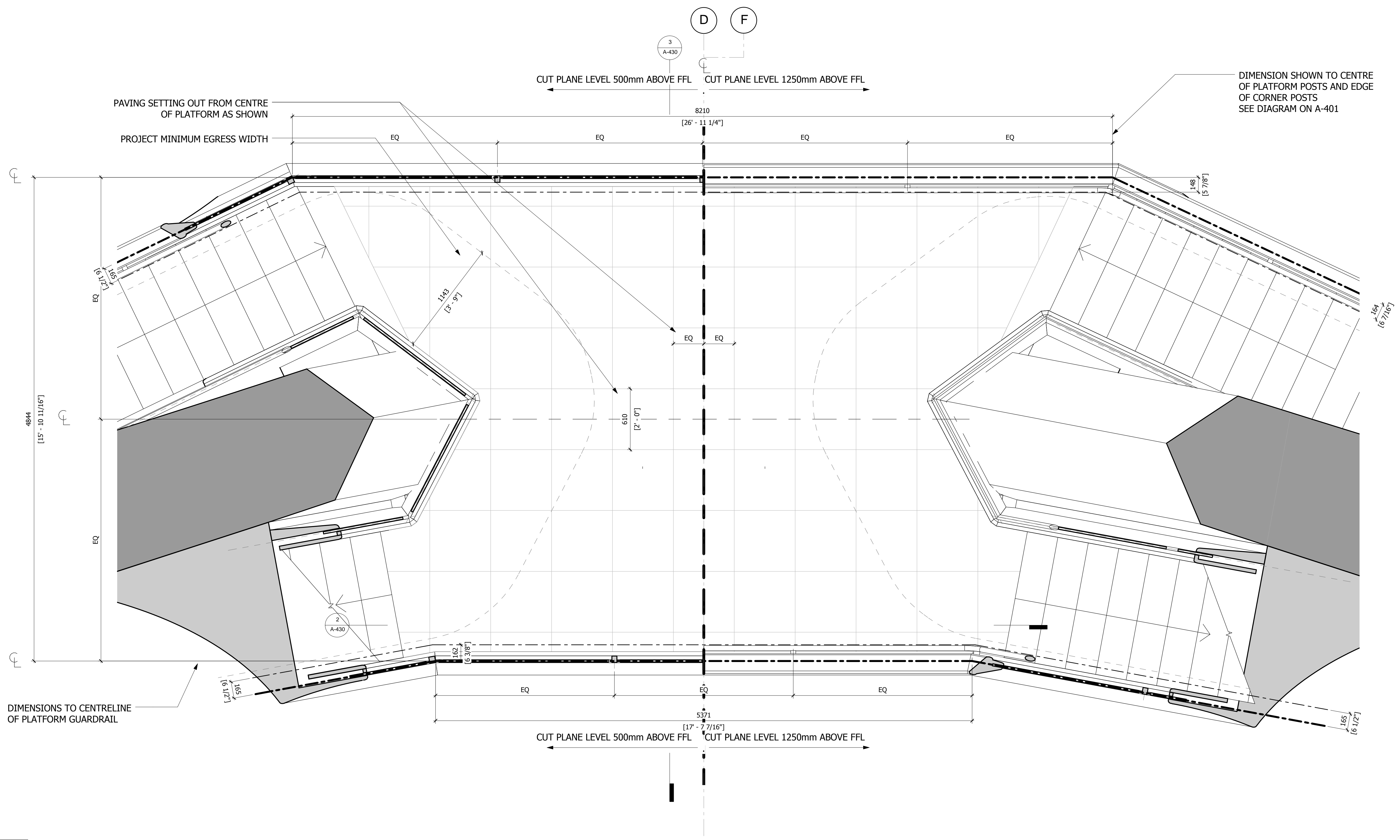
Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

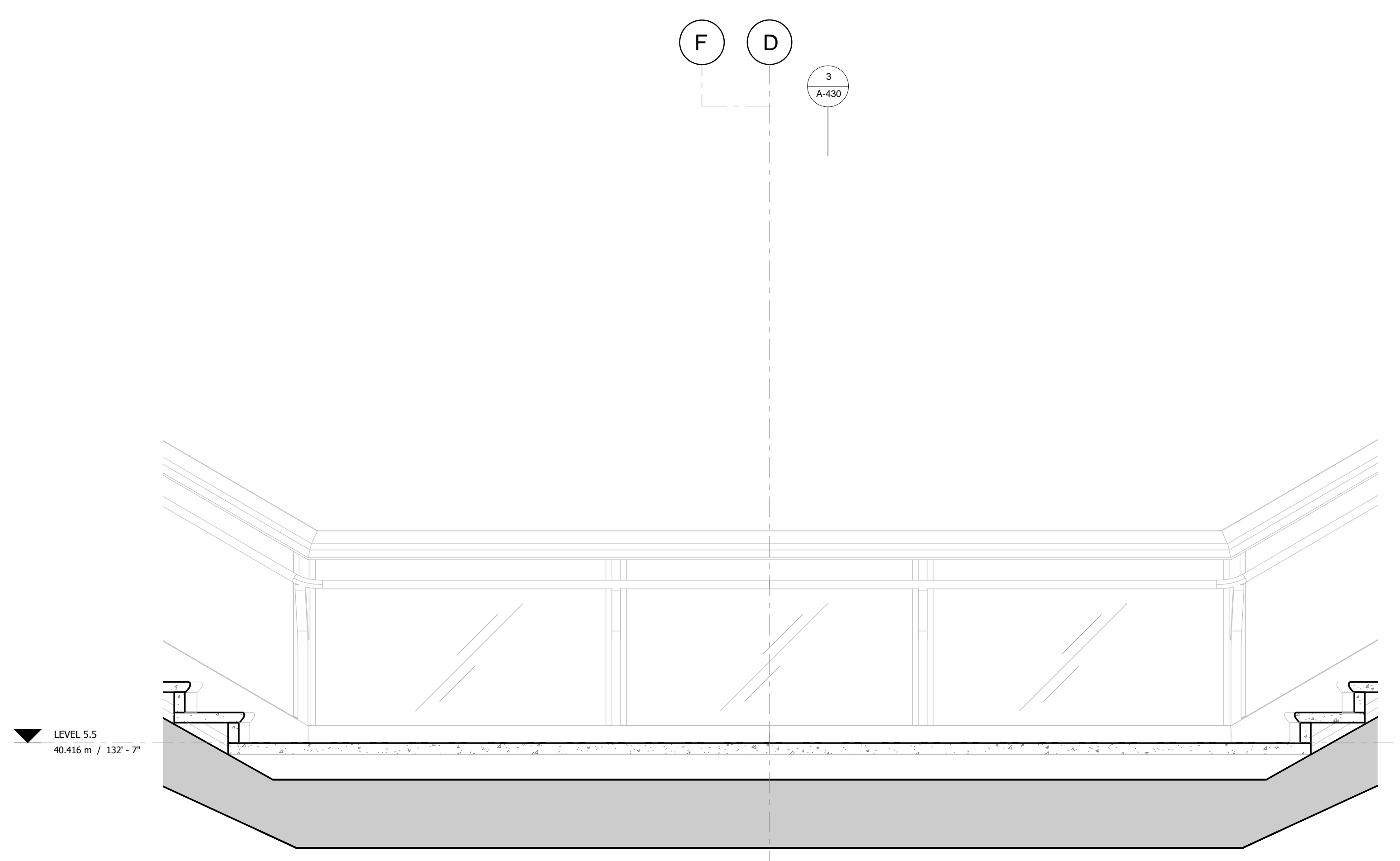
**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 West Street
 New York, NY 10005
 Tel: 212.896.3000

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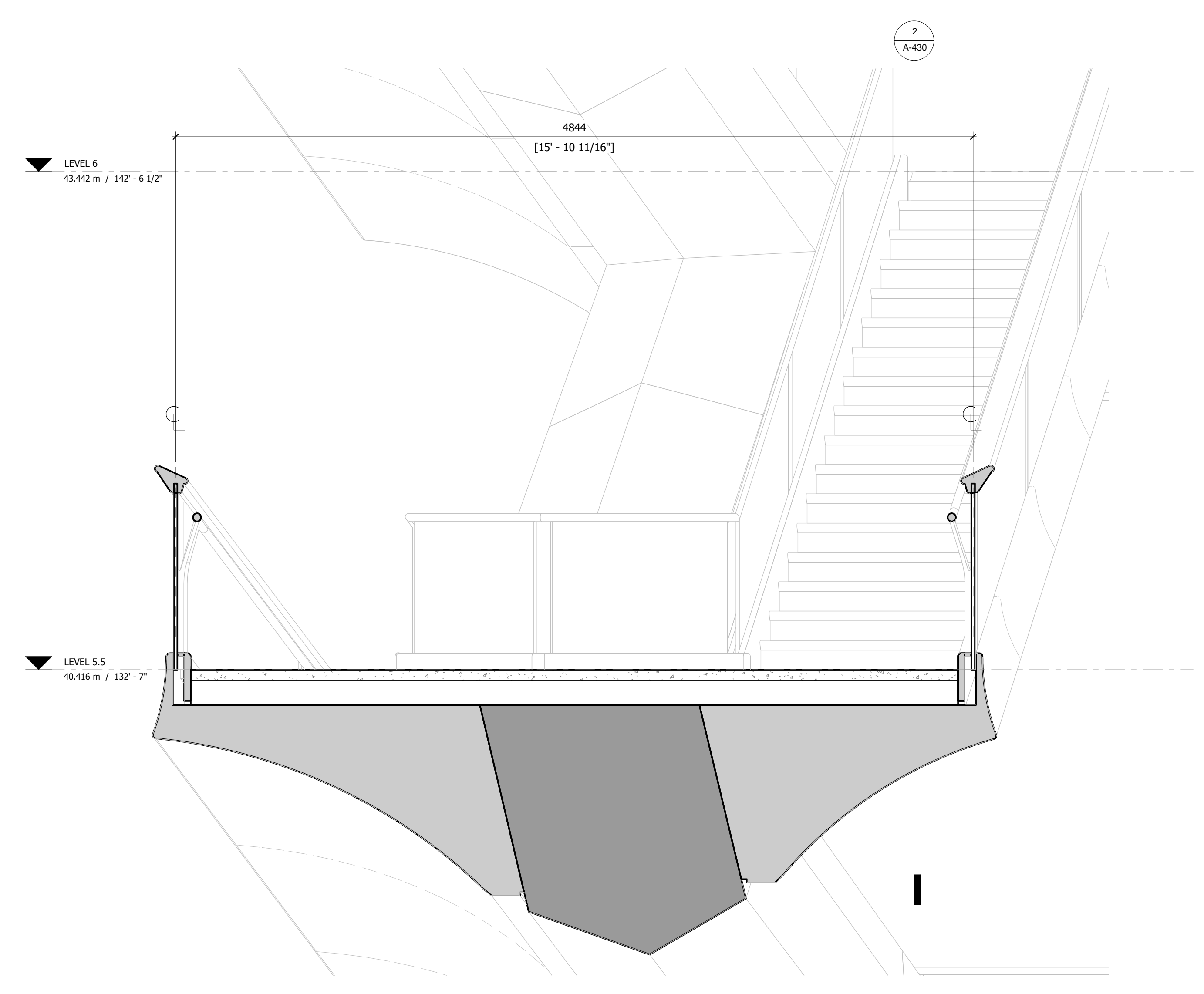
NOTES:
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1 PLAN
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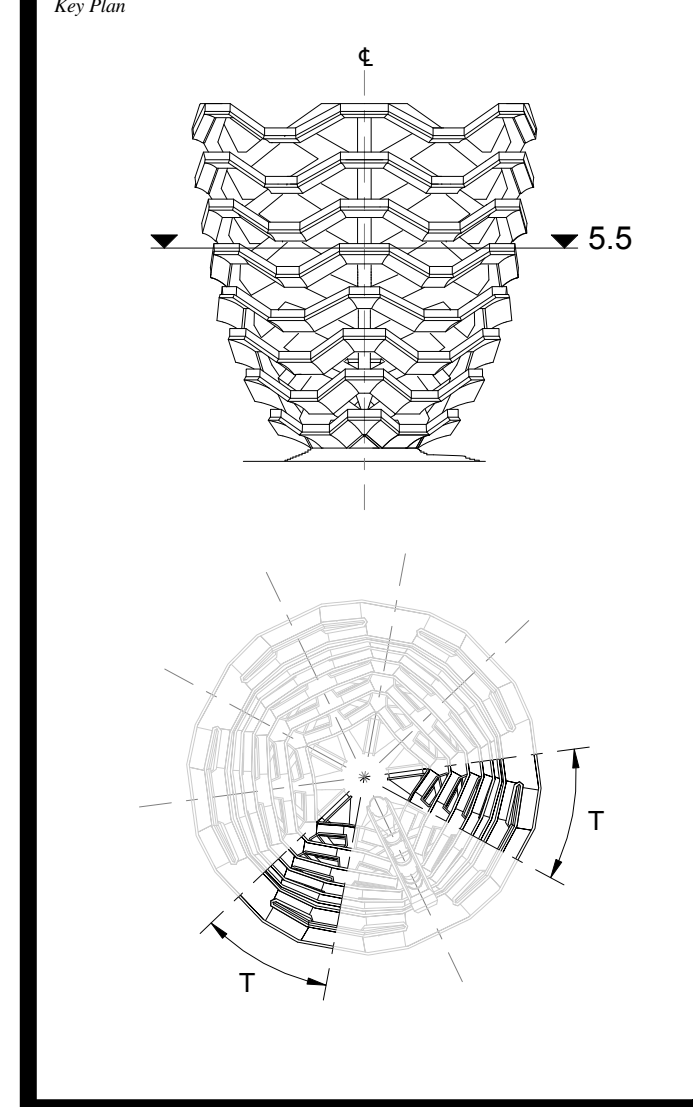


2 LONG SECTION
1 : 20



3 CROSS SECTION
1 : 20

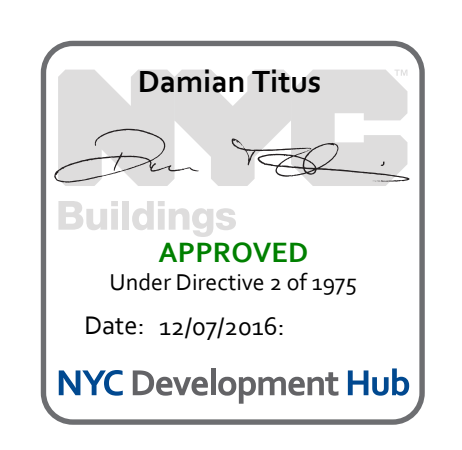
D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date



Date: 05/29/15
 Project No: 2298002
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-430

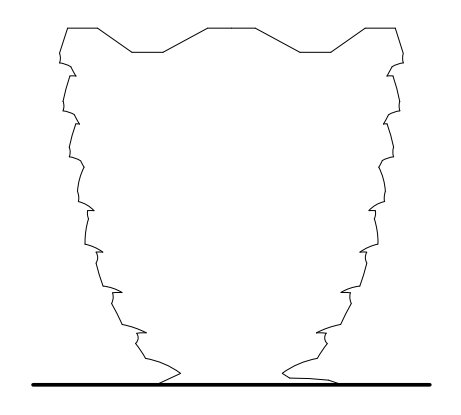
**TRANSITION PLATFORM
LEVEL 5.5 (DISPLAY 5)**

Project Number:
A-430.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
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320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

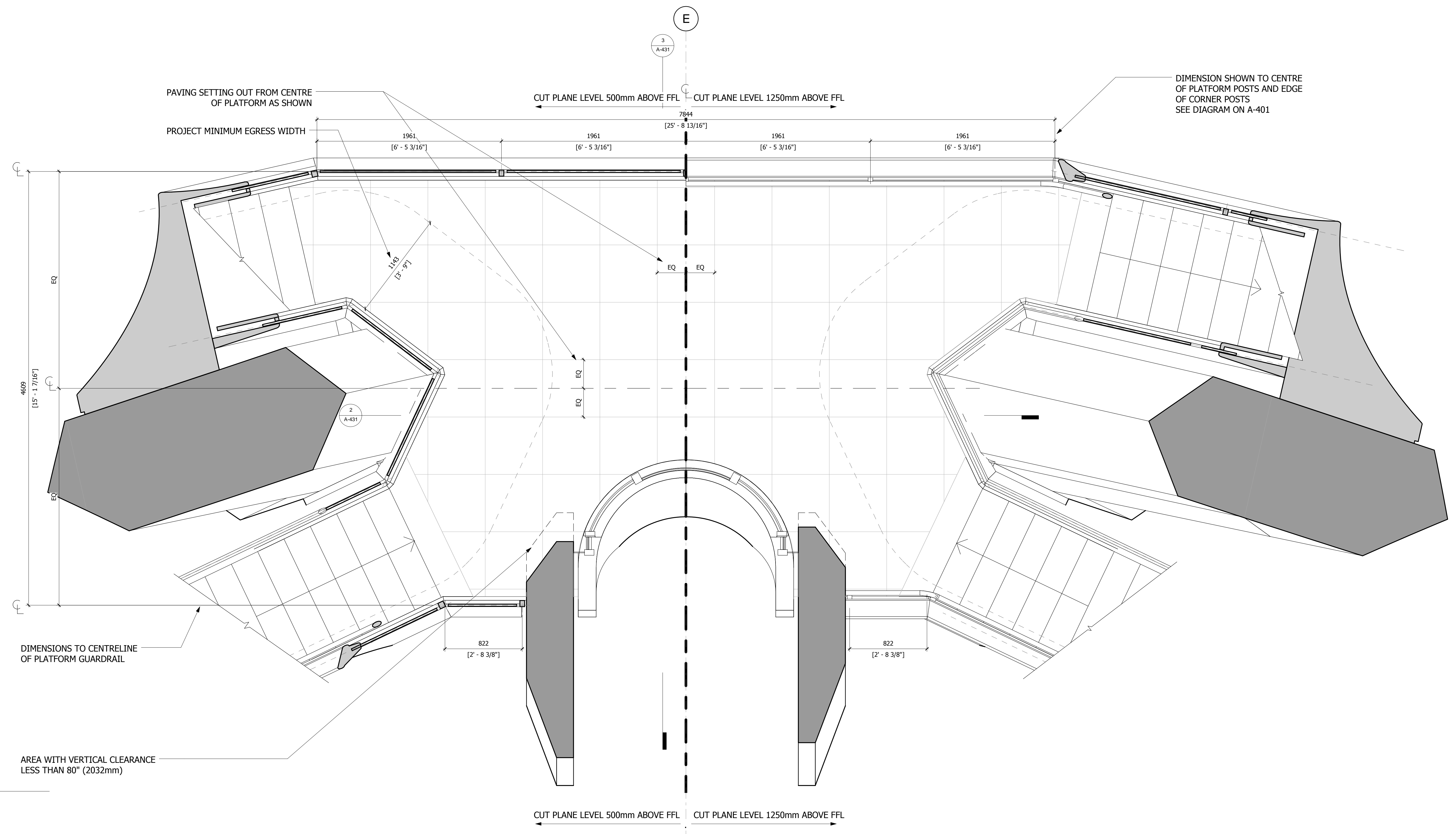
Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

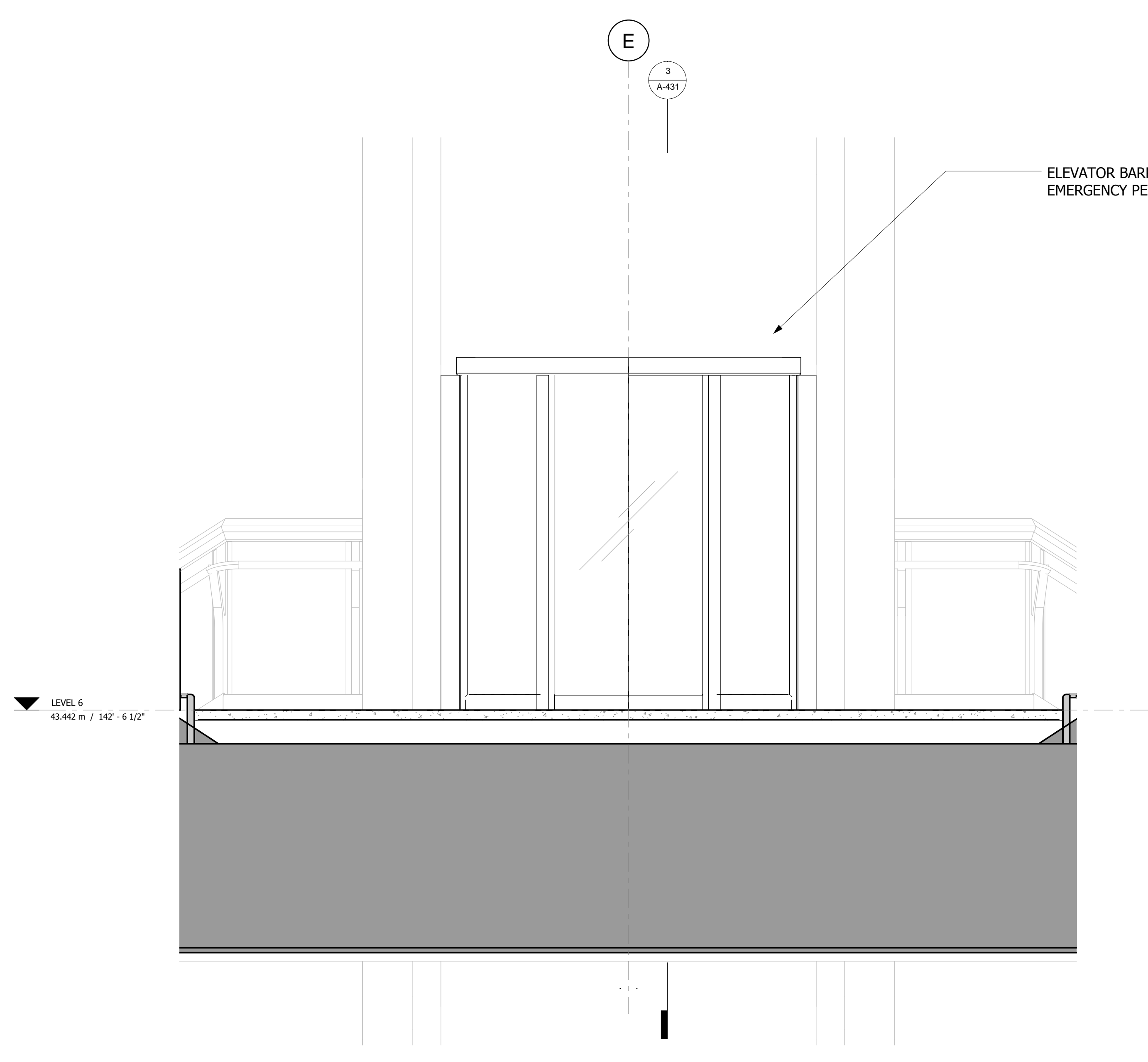
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

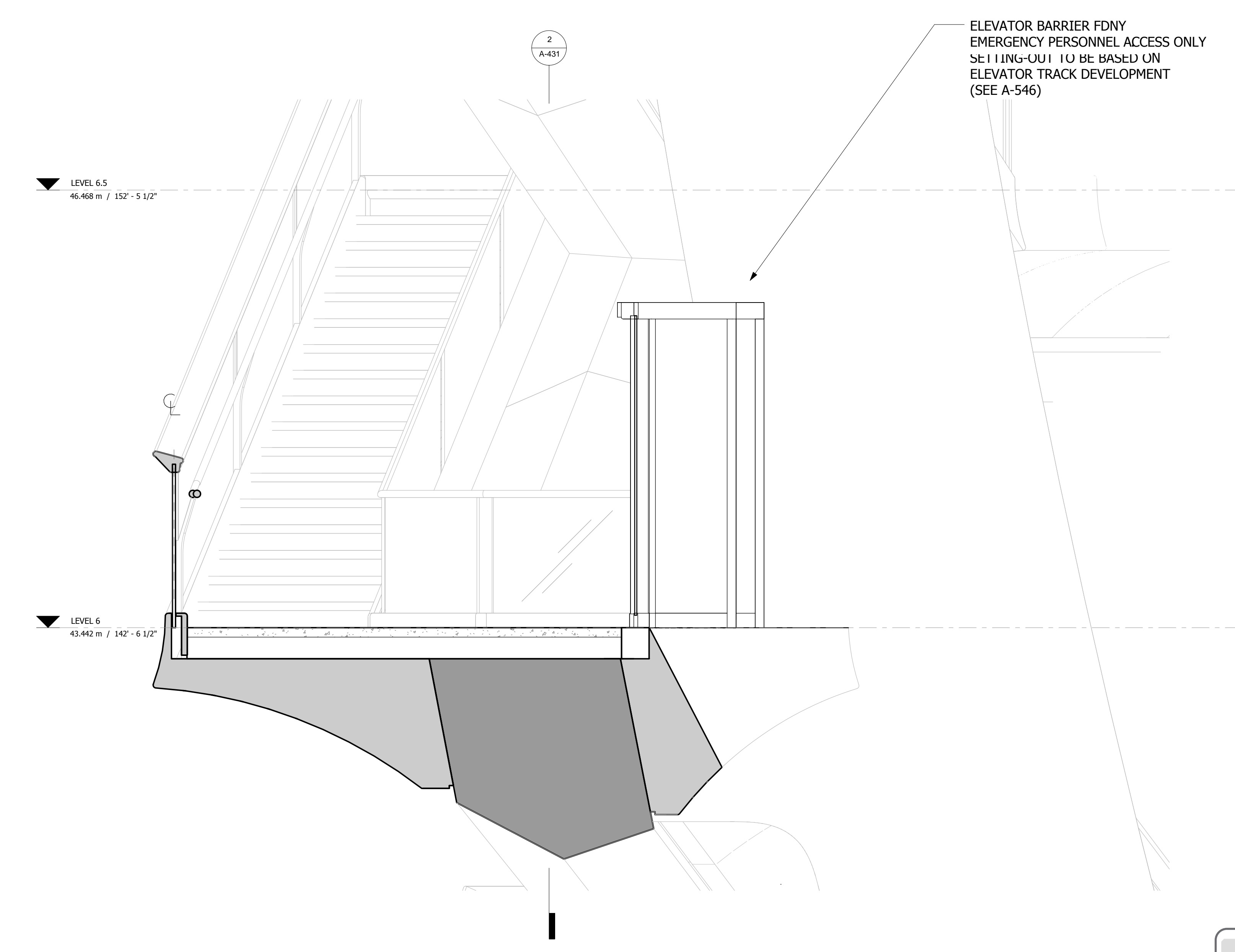
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1 PLAN
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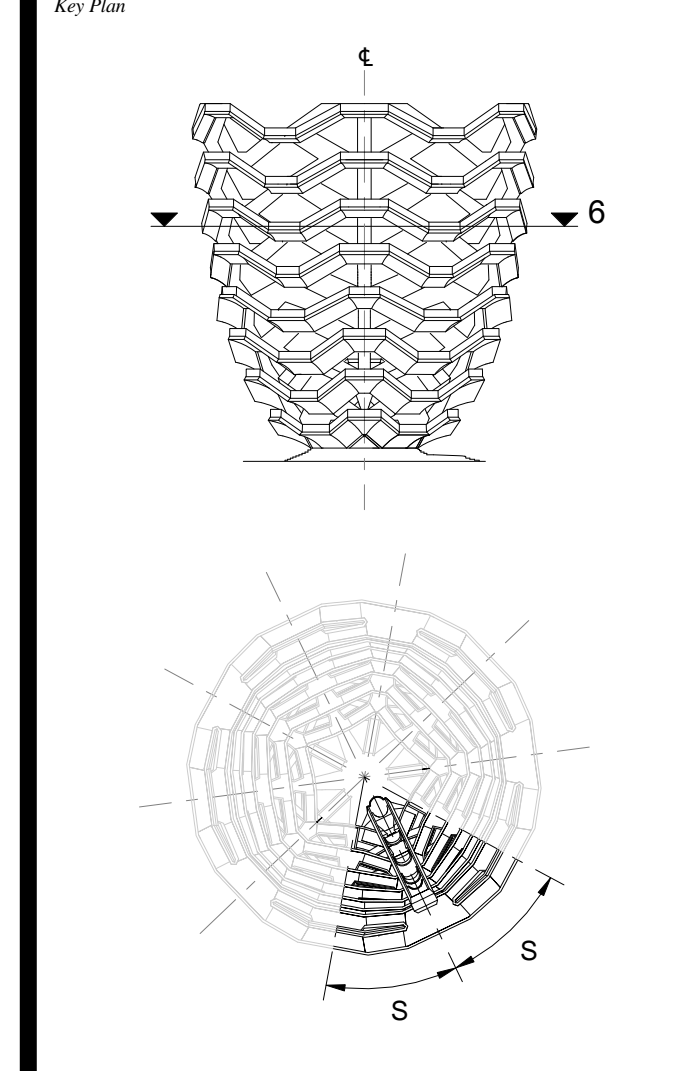


2 LONG SECTION
1 : 20



3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016



Date: 05/15/14
Project No: 2298007
Drawn By: [Signature]
Sheet Number: HYE-VS-A-431

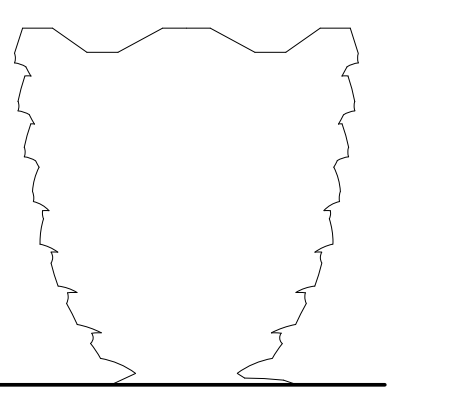
Damian Titus
Buildings APPROVED
Under Directive 2 of 1975
Date: 12/07/2016
NYC Development Hub

**SPINE PLATFORM
LEVEL 6 (DISPLAY 6)**

Sheet Number
A-431.00

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

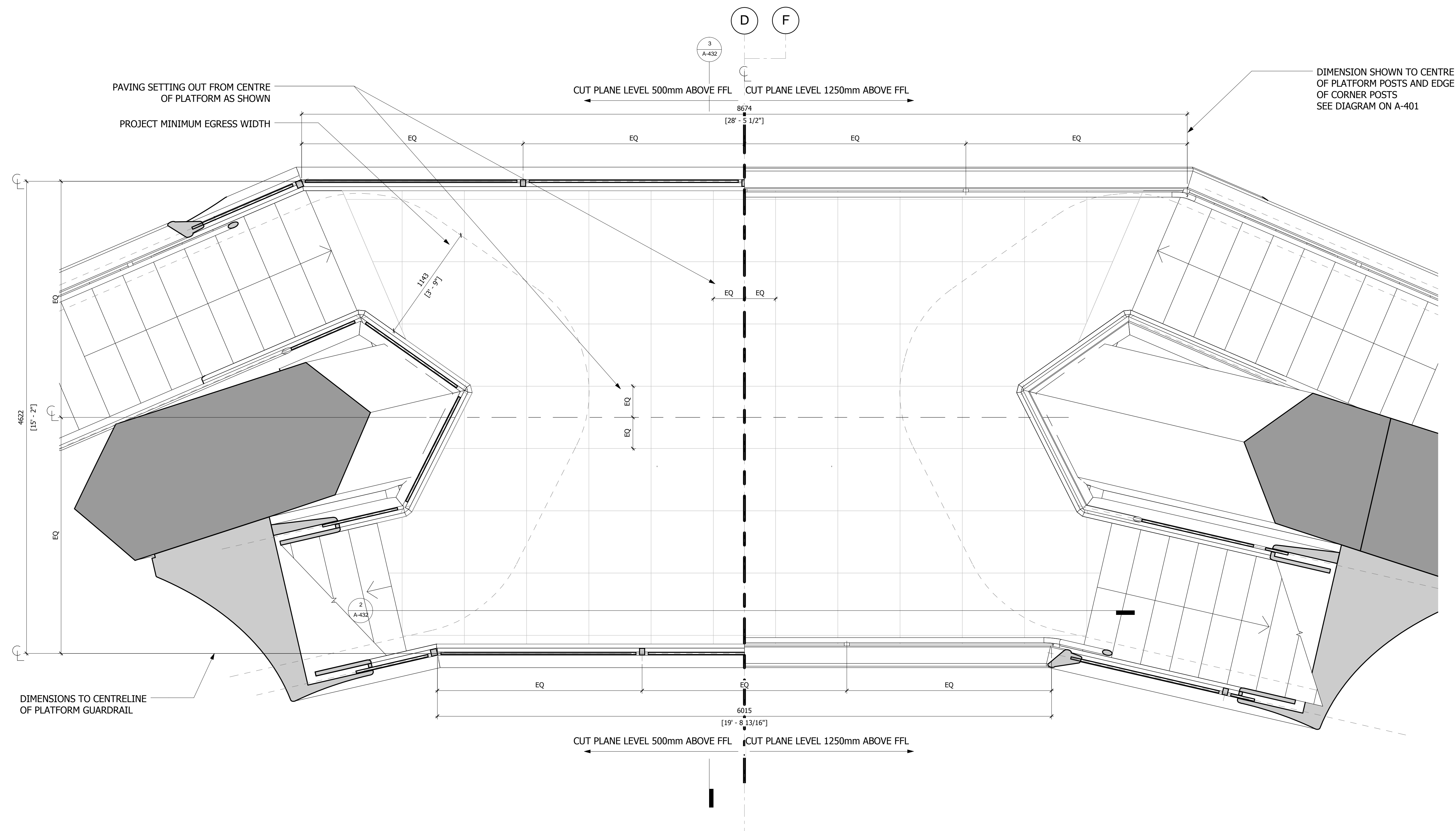
Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

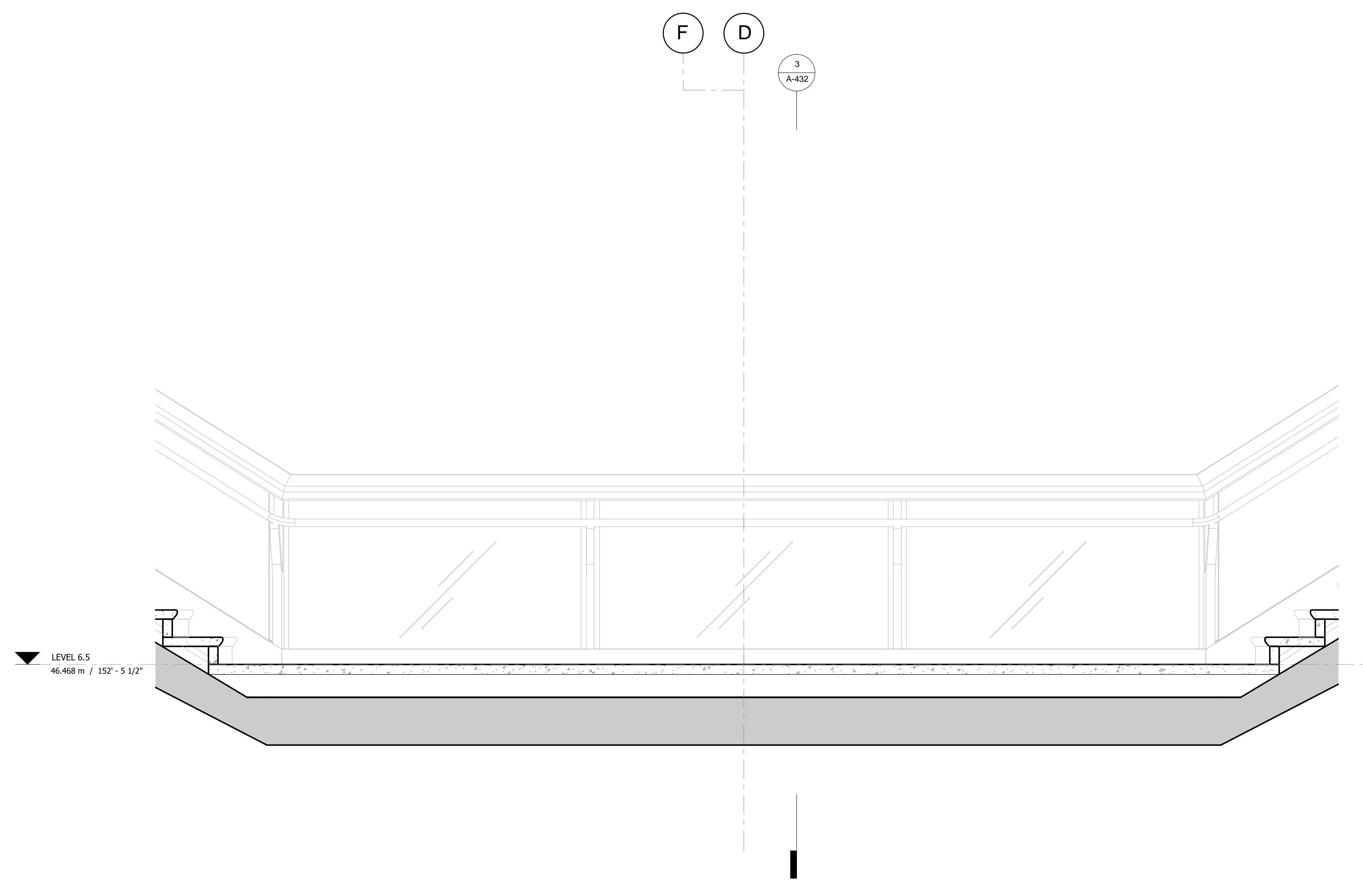
**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 West Street
New York, NY 10005
Tel: 212.896.3000

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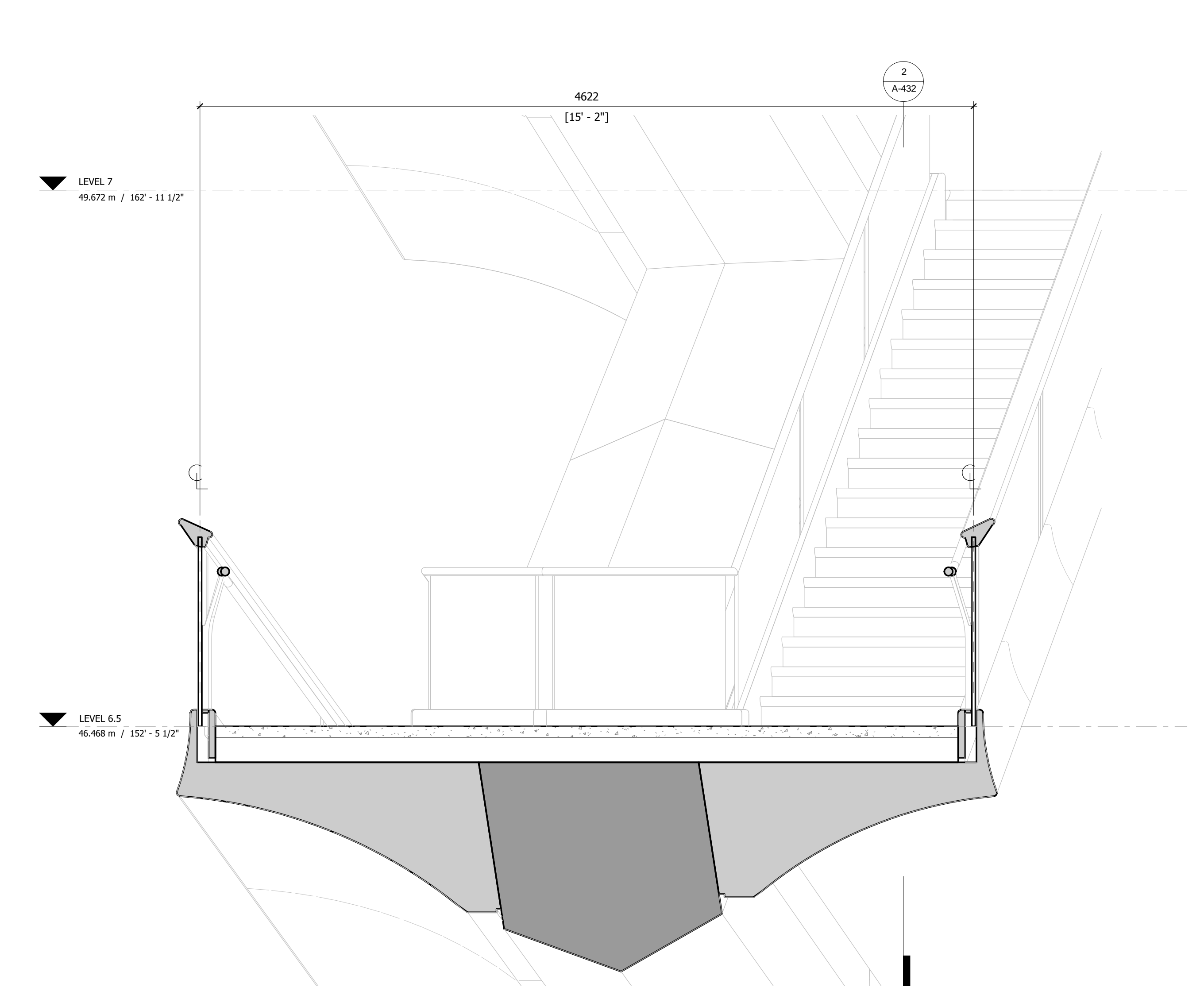
NOTES:
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1 PLAN
1 : 20

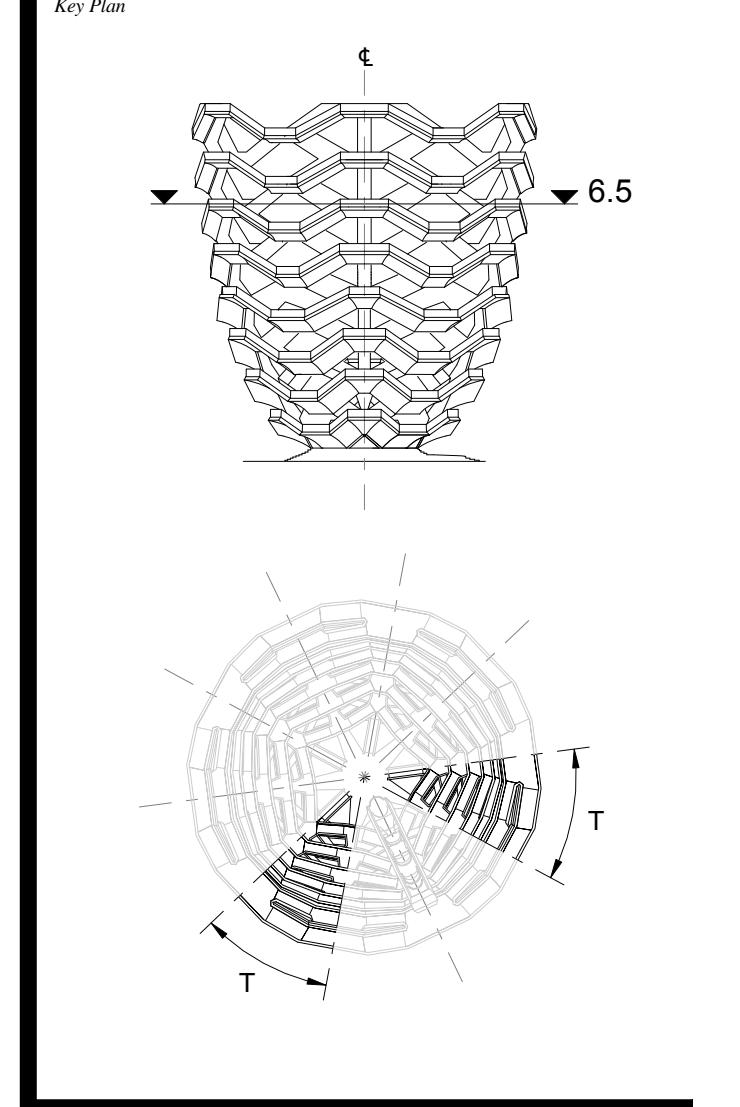


2 LONG SECTION
1 : 20



3 CROSS SECTION
1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016

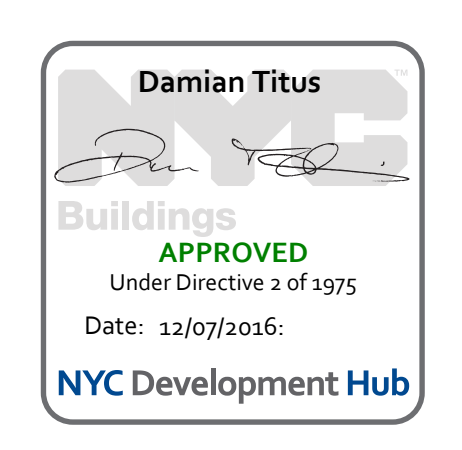


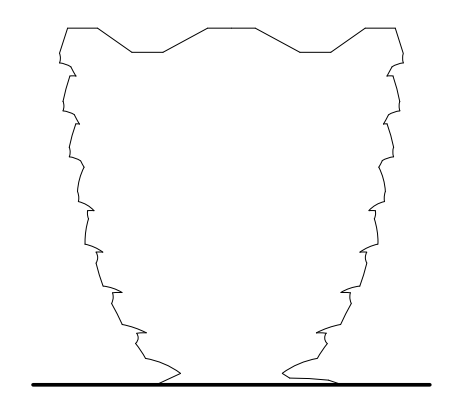
Date: 05/29/15
Project No: 2296002
Drawn By: [Signature]
Sheet Number: HYE-VS-A-432

HYE-VS-A-432

**TRANSITION PLATFORM
LEVEL 6.5 (DISPLAY 6)**

Sheet Number
A-432.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

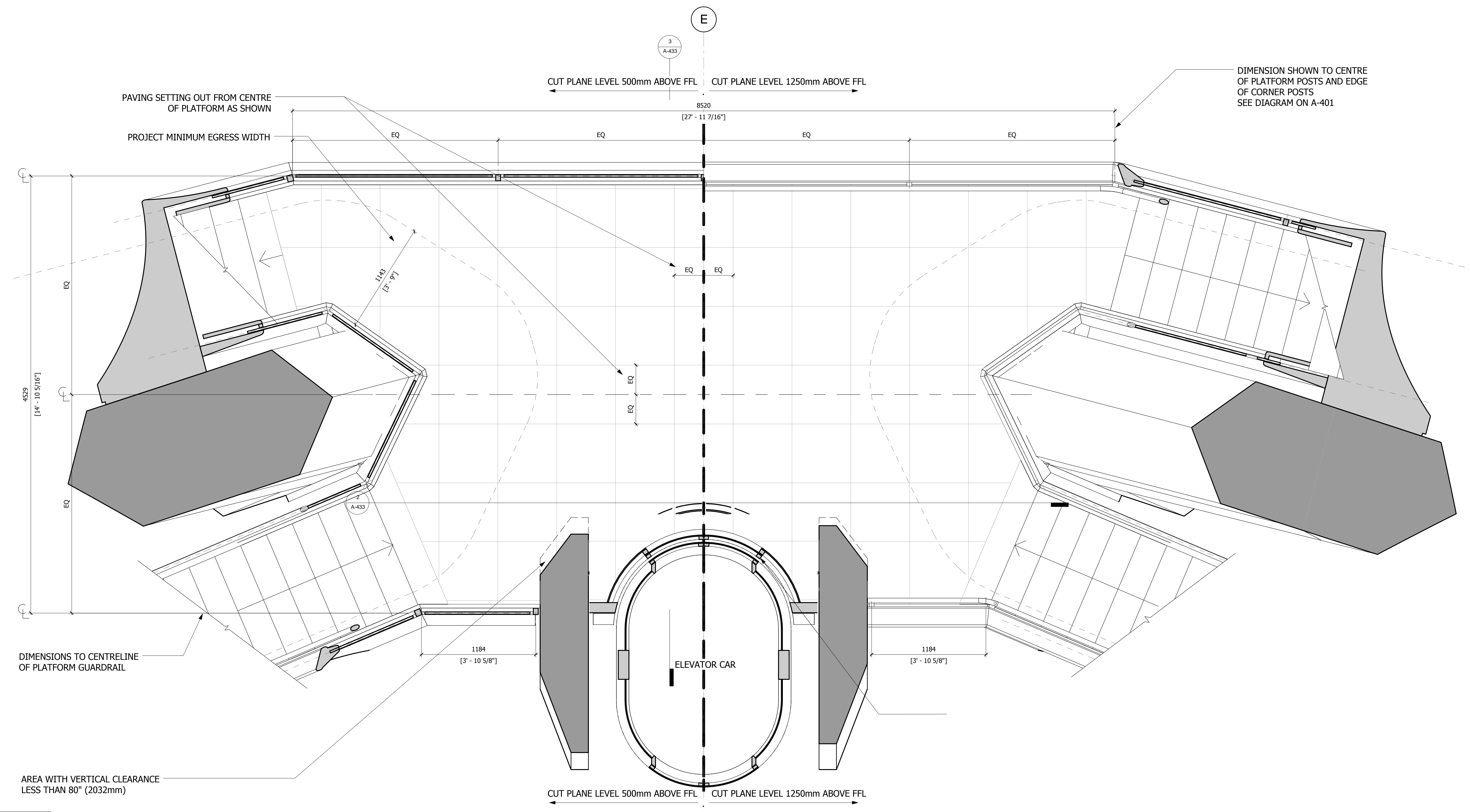
Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Gray's Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

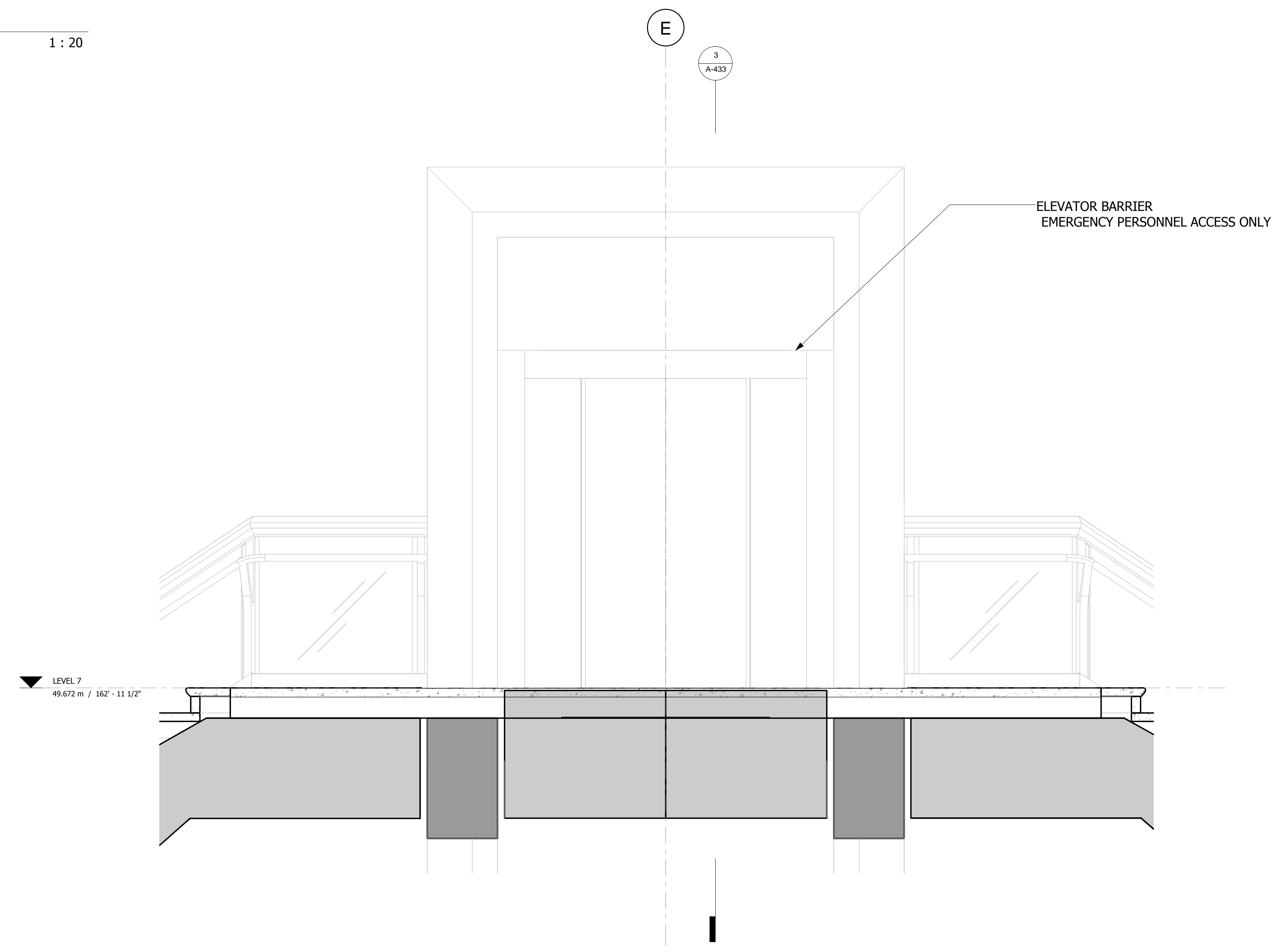
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 West Street
 New York, NY 10005
 Tel: 212.896.3000

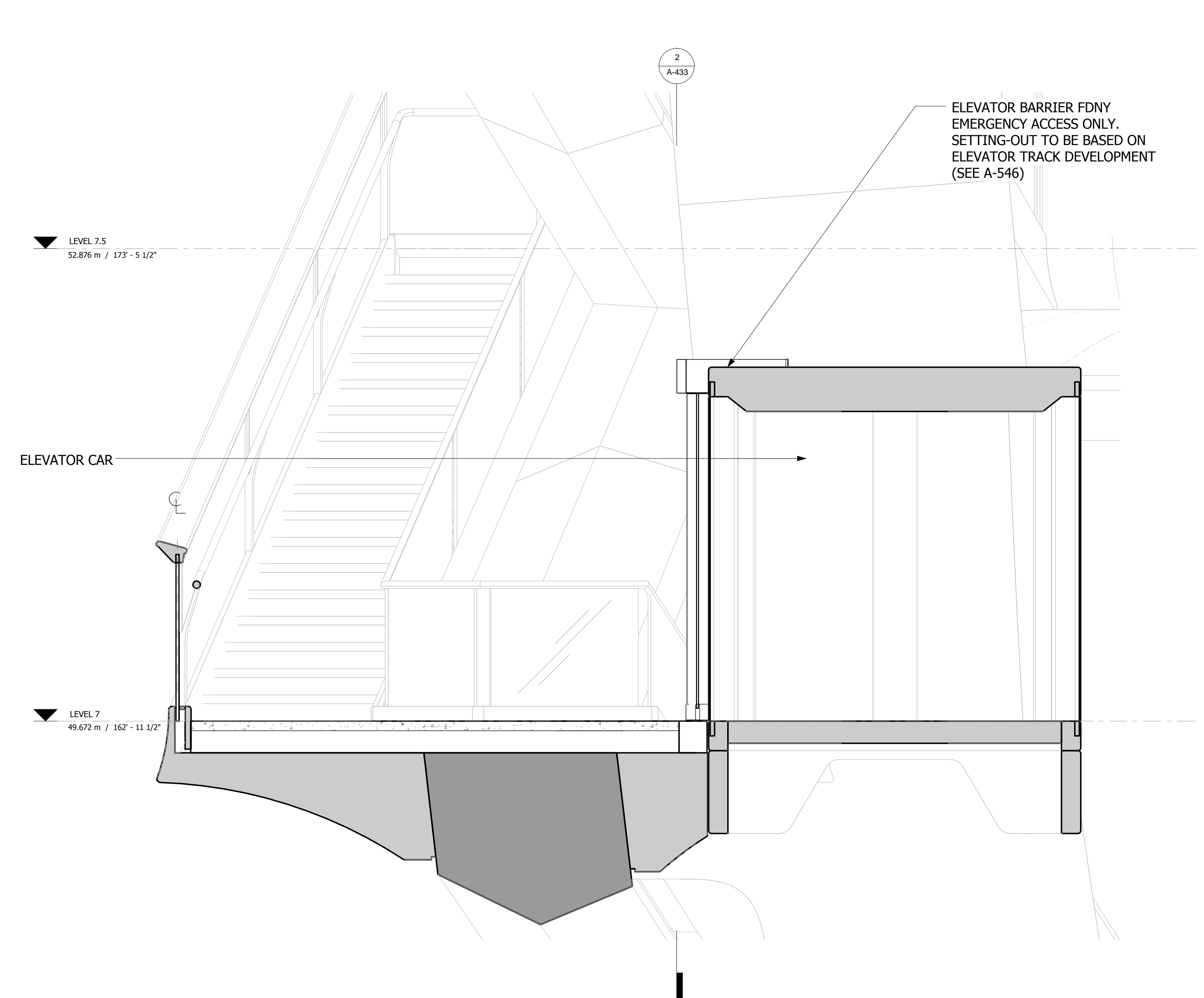
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1 PLAN
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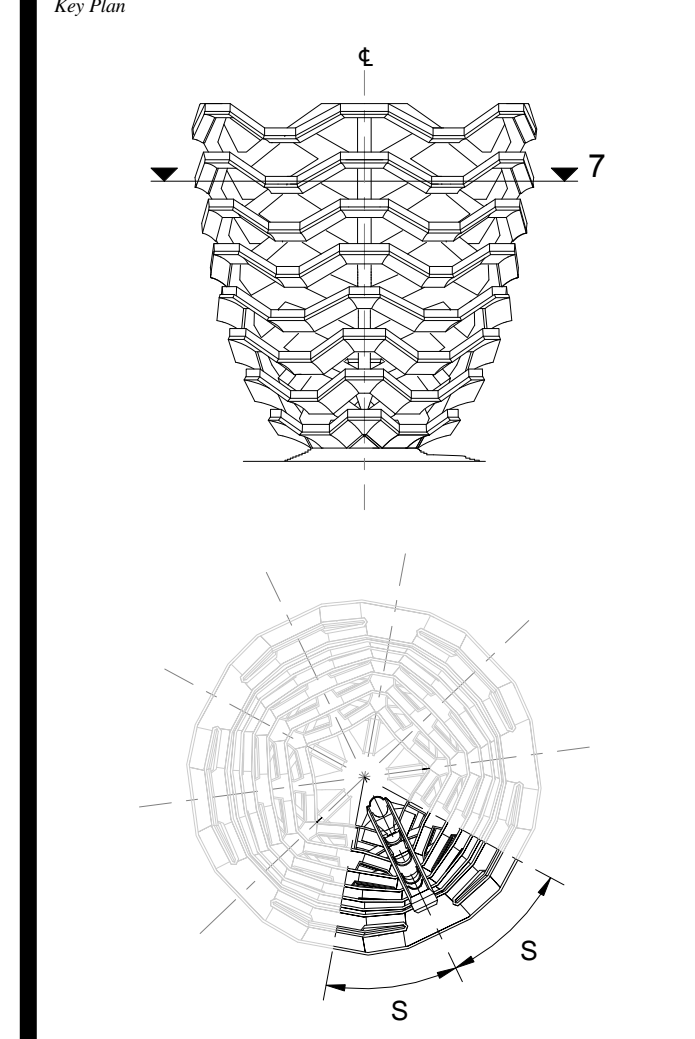


2 LONG SECTION
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3 CROSS SECTION
 1 : 20

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Inset Date

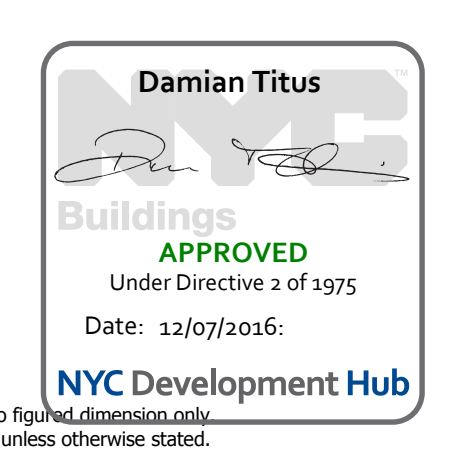


Date: 05/15/14
 Project No: 2208407
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-433

**SPINE PLATFORM
LEVEL 7 (DISPLAY 7)**

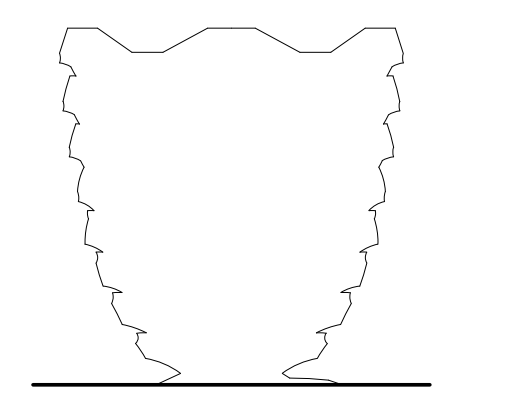
Sheet Number
A-433.00



NOTES
 - Do not scale the drawing work to fit.
 - All dimensions are in millimeters unless otherwise stated.
 - All dimensions to be confirmed prior to fabrication.
 - Heatherwick Studio shall be notified in writing of any discrepancies requiring verification.

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
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 60 Columbus Circle
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 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

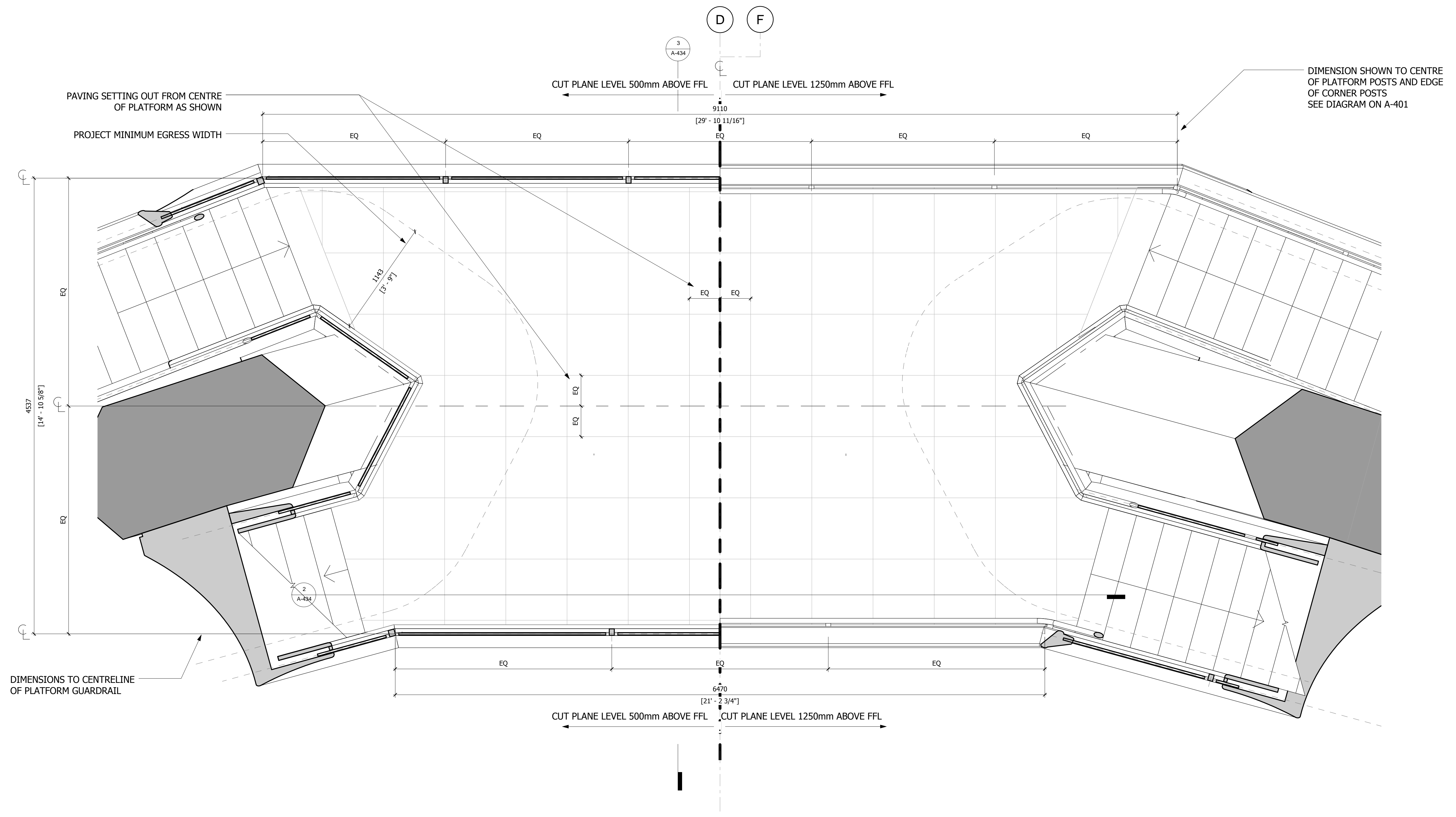
Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

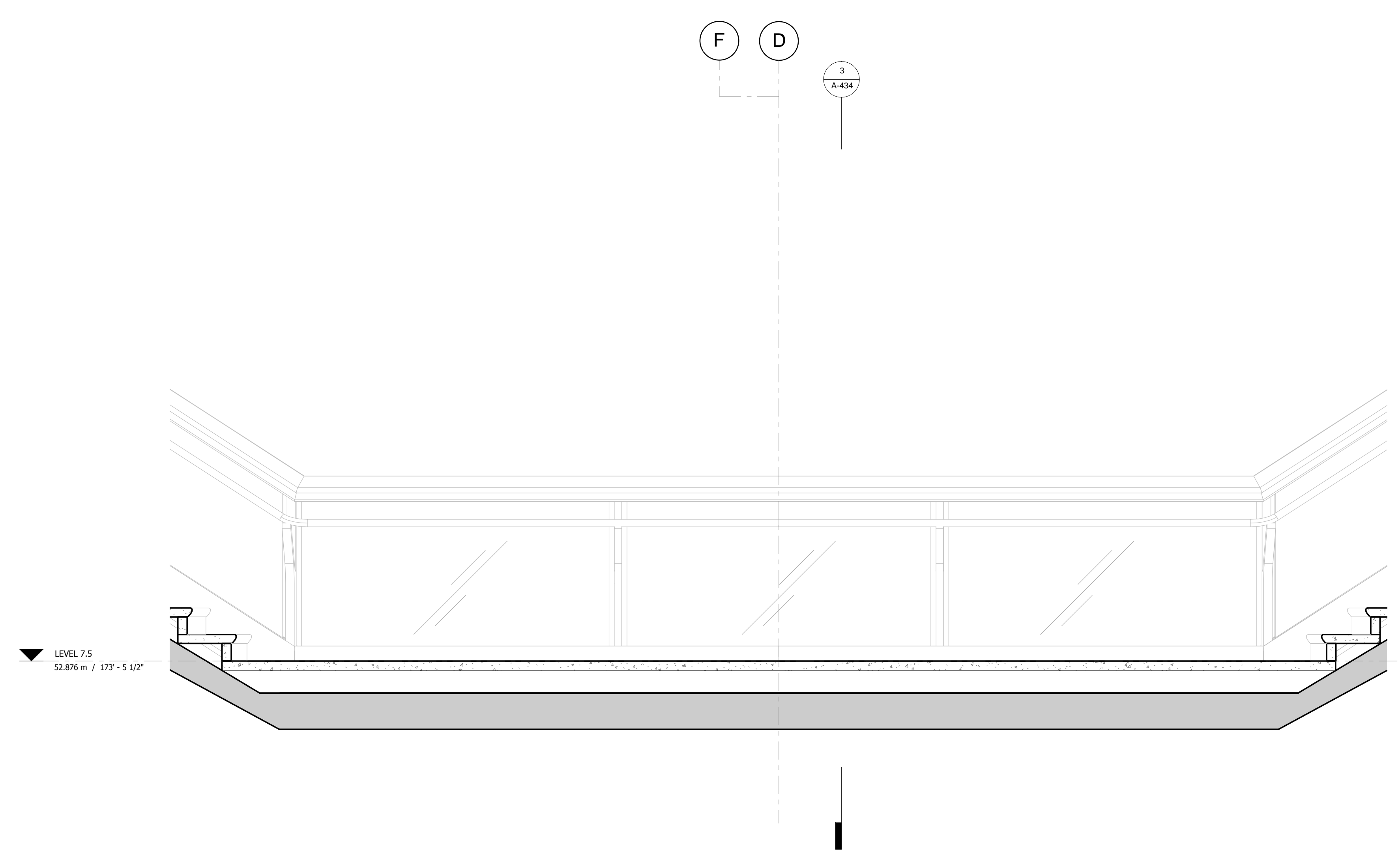
**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Waver Street
 New York, NY 10005
 Tel: 212.896.3000

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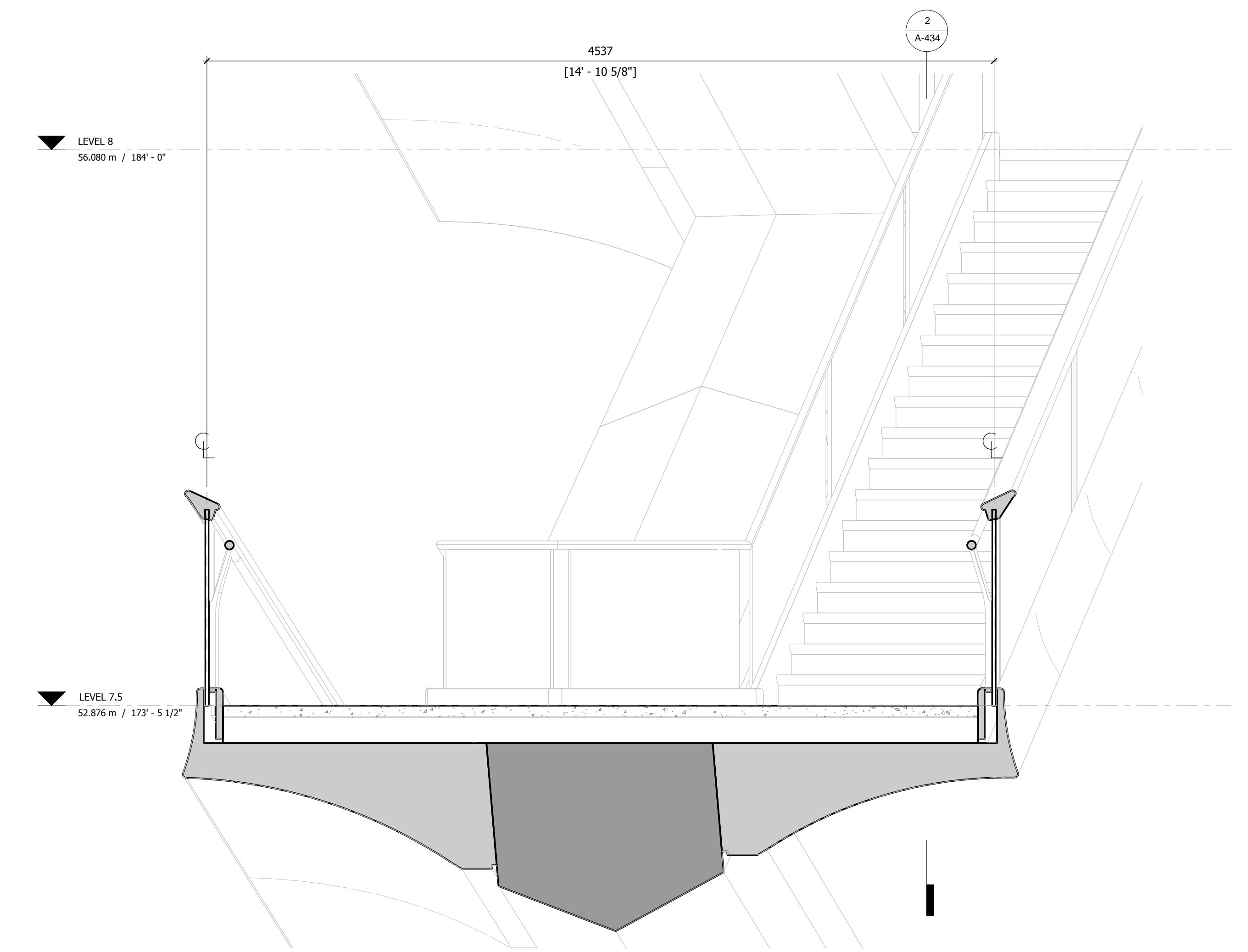
NOTES:
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1 PLAN
1 : 20

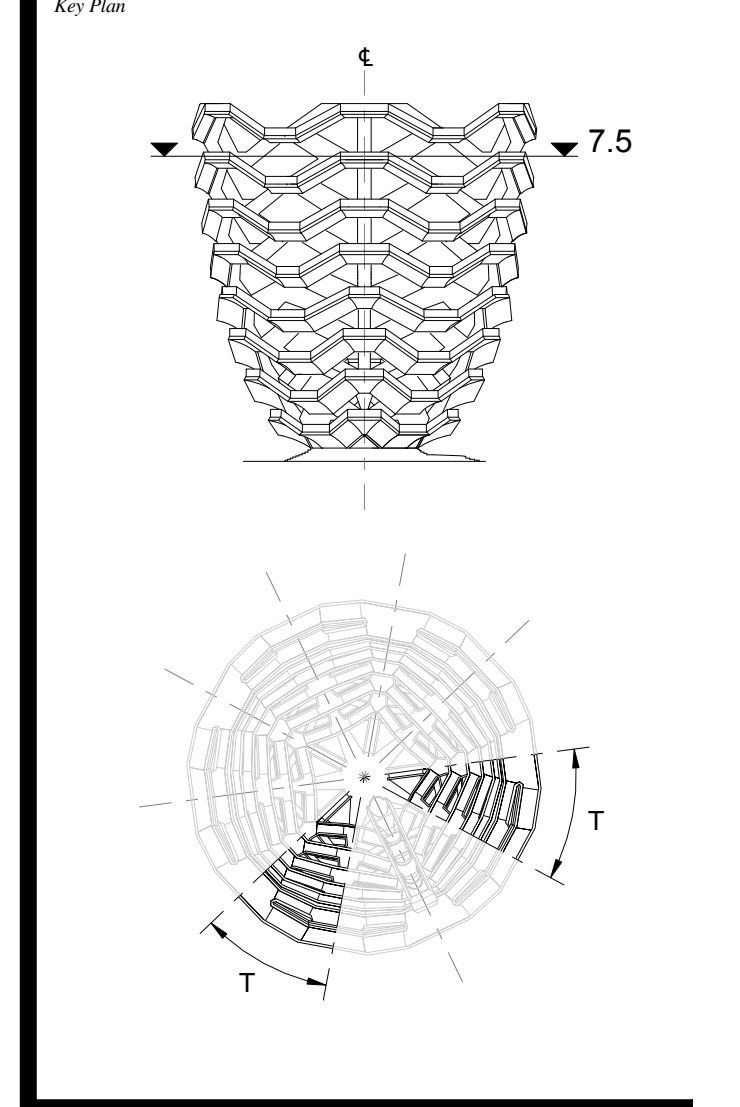


2 LONG SECTION
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3 CROSS SECTION
1 : 20

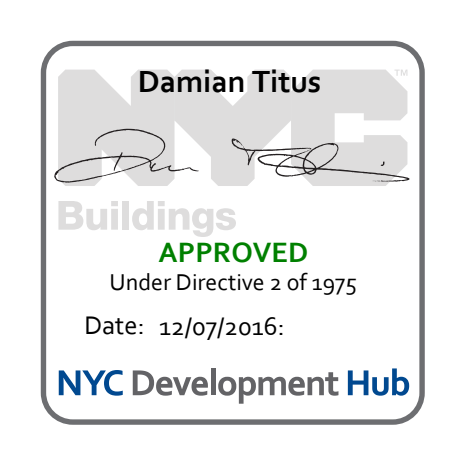
D.O.B. BUILDING PERMIT FILING 05/20/2016



Date: 05/29/15
 Project No: 2298402
 Drawn By: [Signature]
 Sheet Number: HYE-VS-A-434

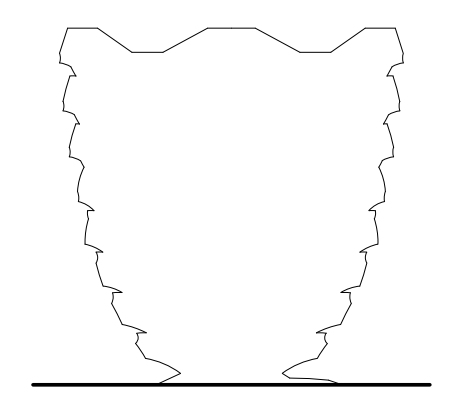
**TRANSITION PLATFORM
LEVEL 7.5 (DISPLAY 7)**

Project Number:
A-434.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

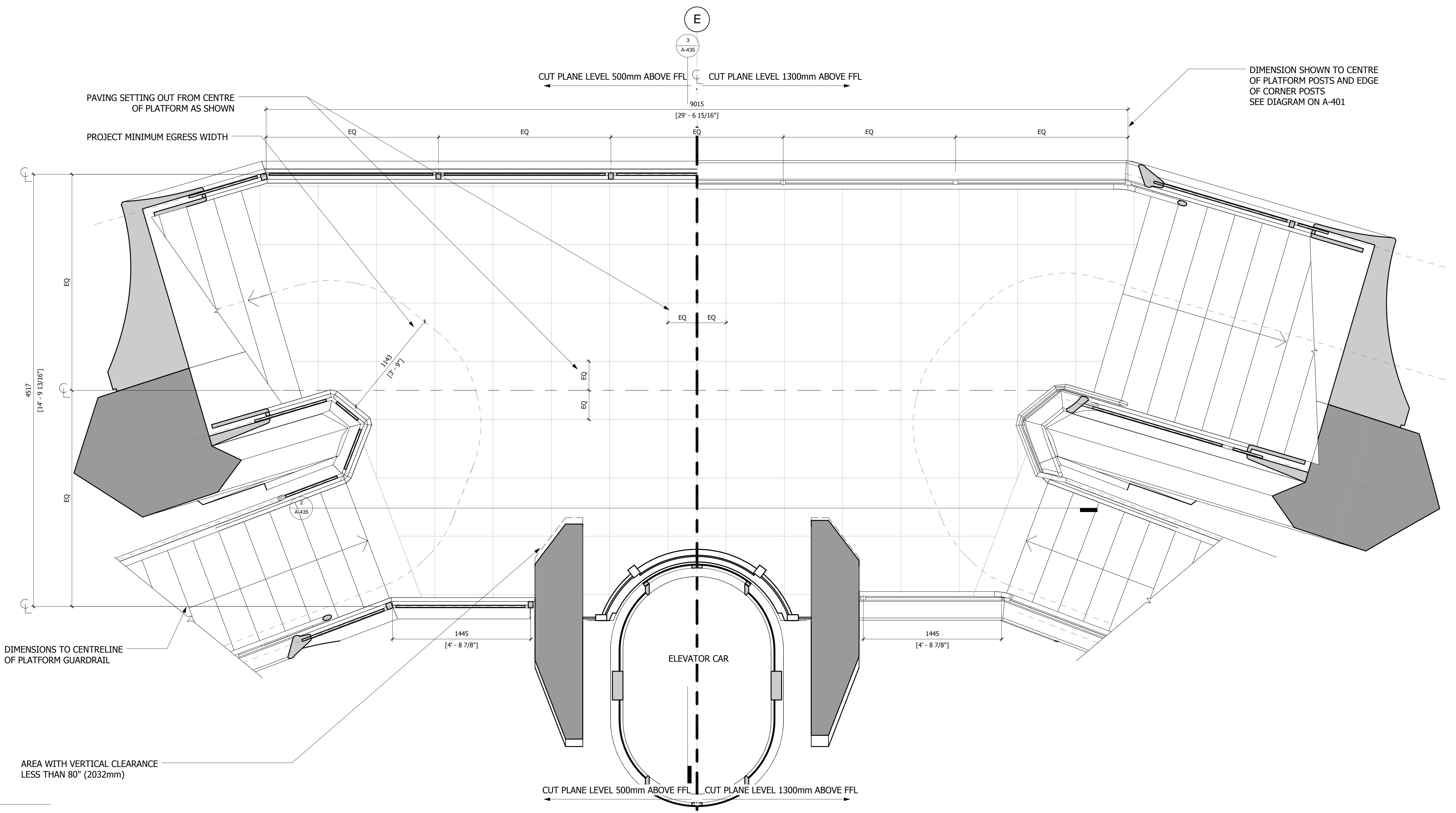
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

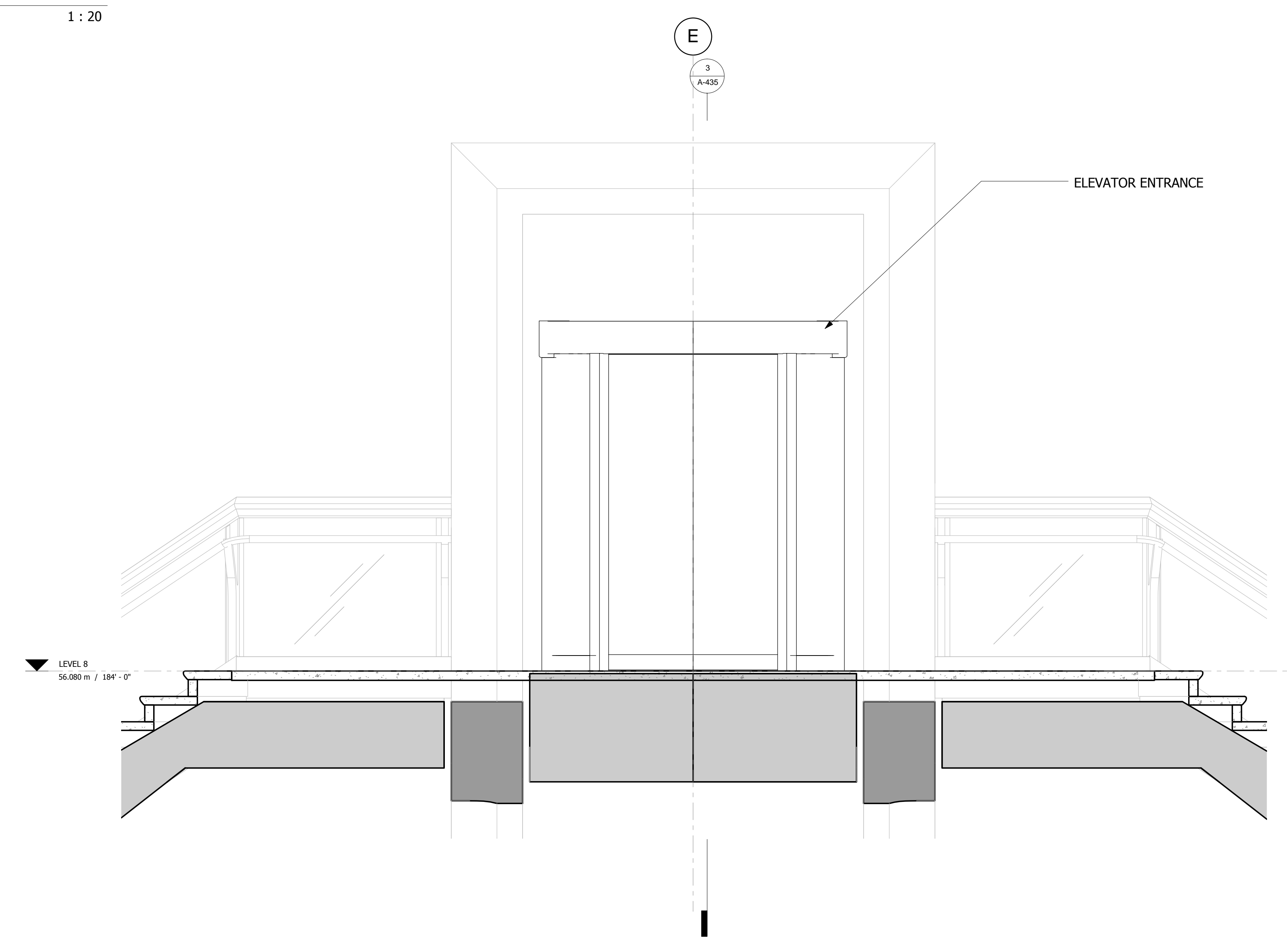
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Waver Street
 New York, NY 10005
 Tel: 212.896.3000

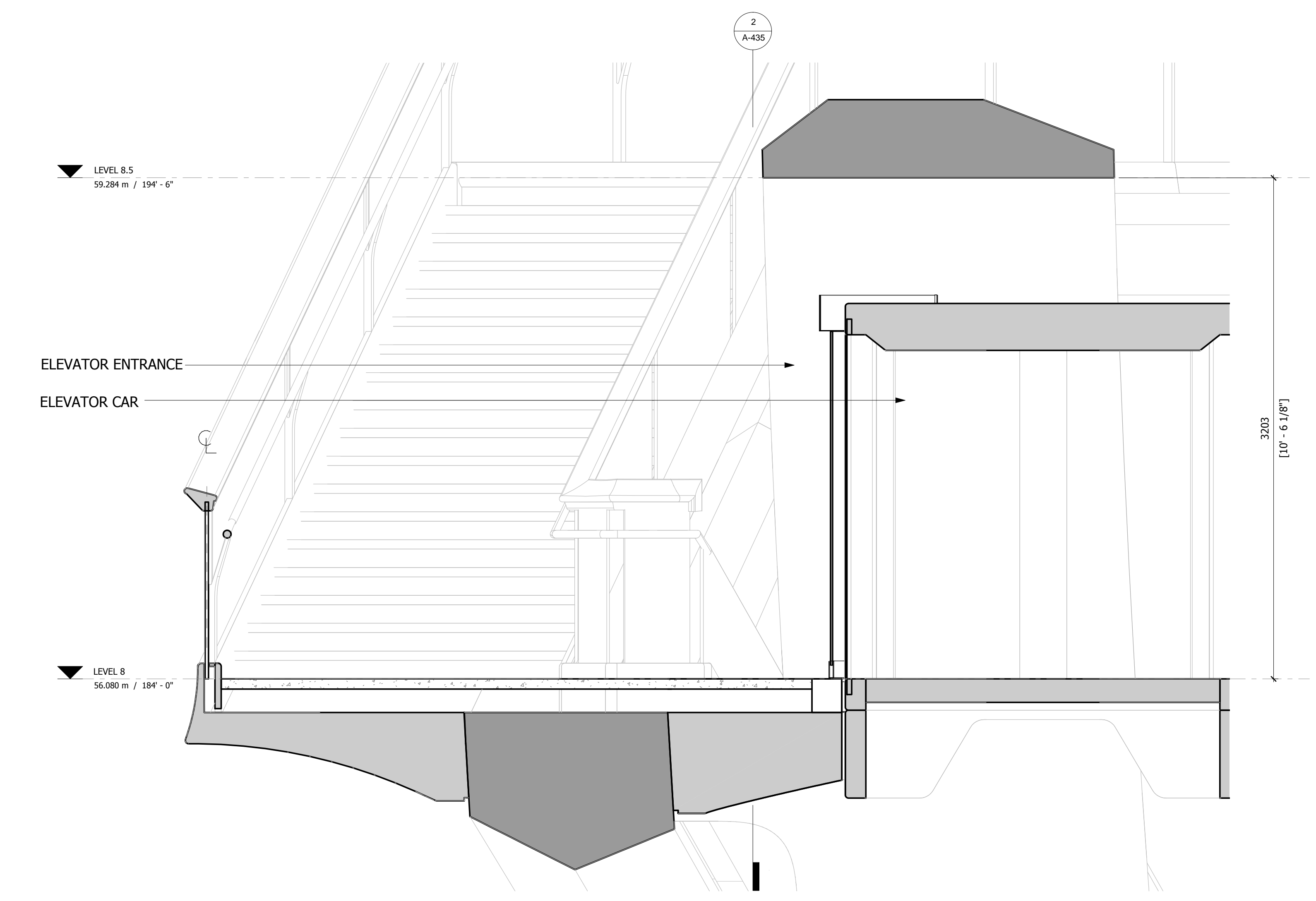
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1 PLAN
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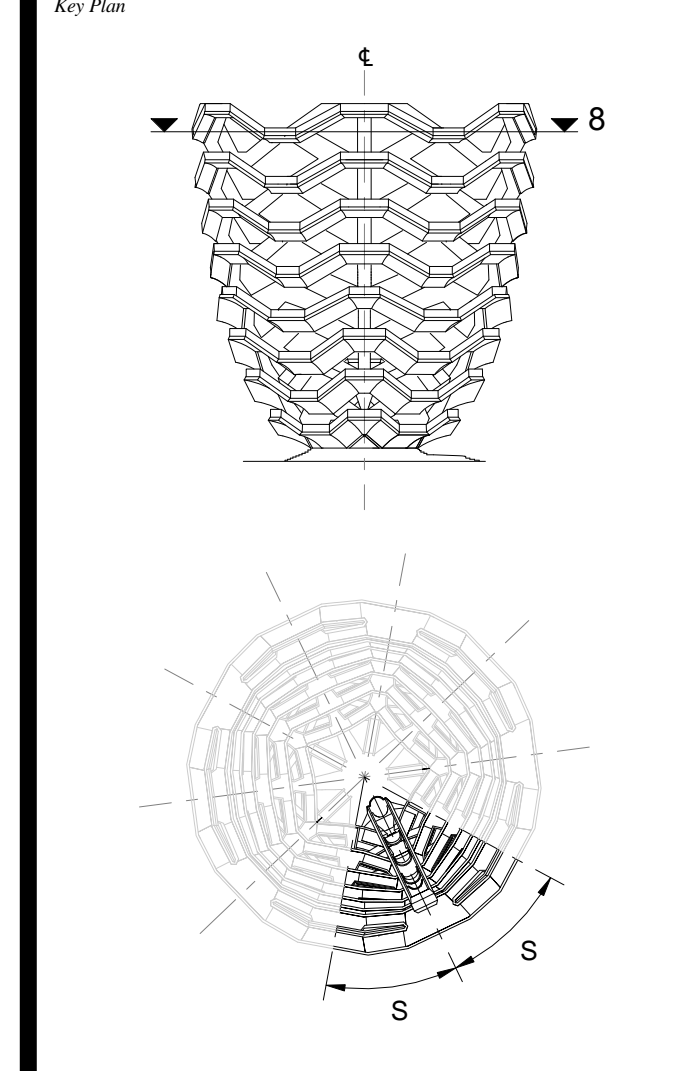


2 LONG SECTION
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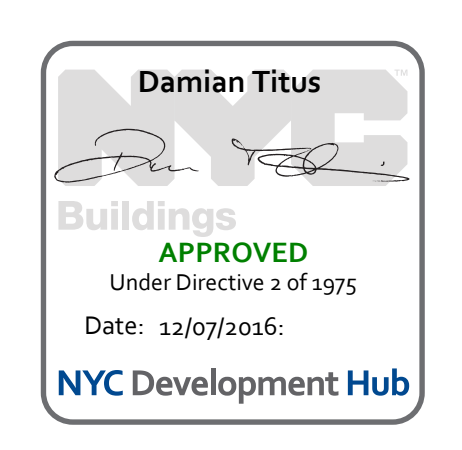
3 CROSS SECTION
1 : 20

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 No. Inset Date



Date: 05/15/14
 Project No: 2206007
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HYE-VS-A-435

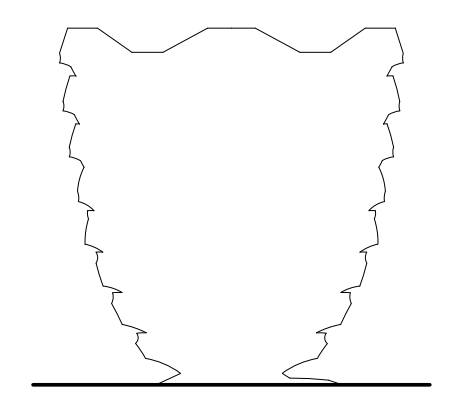


**SPINE PLATFORM
LEVEL 8 (DISPLAY 8)**

Sheet Number
A-435.00

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.866.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

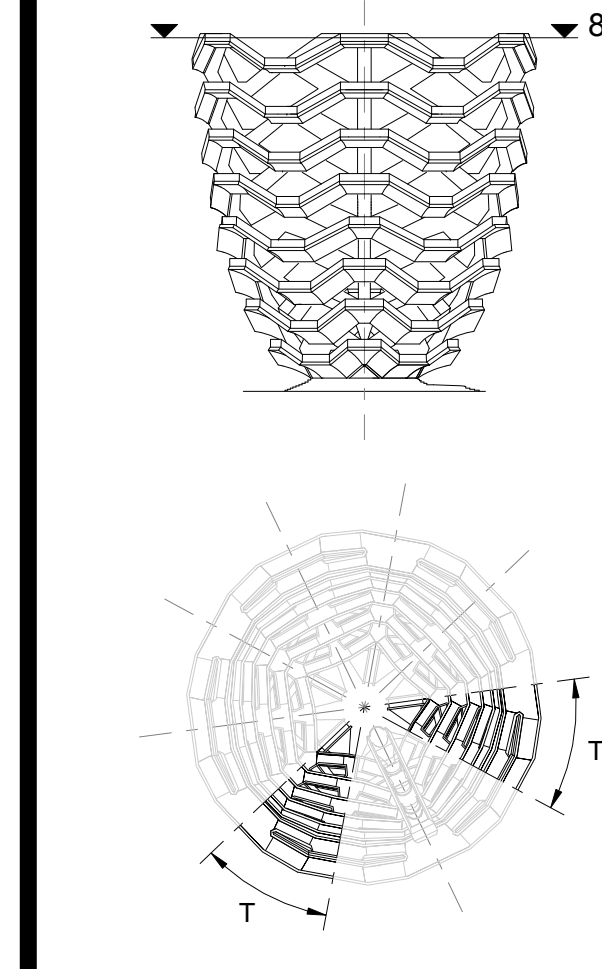
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
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77 Water Street
New York, NY 10005
Tel: 212.896.3000

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1 D.O.B. BUILDING PERMIT FILING 05/20/2016
No. Issue Date

Key Plan

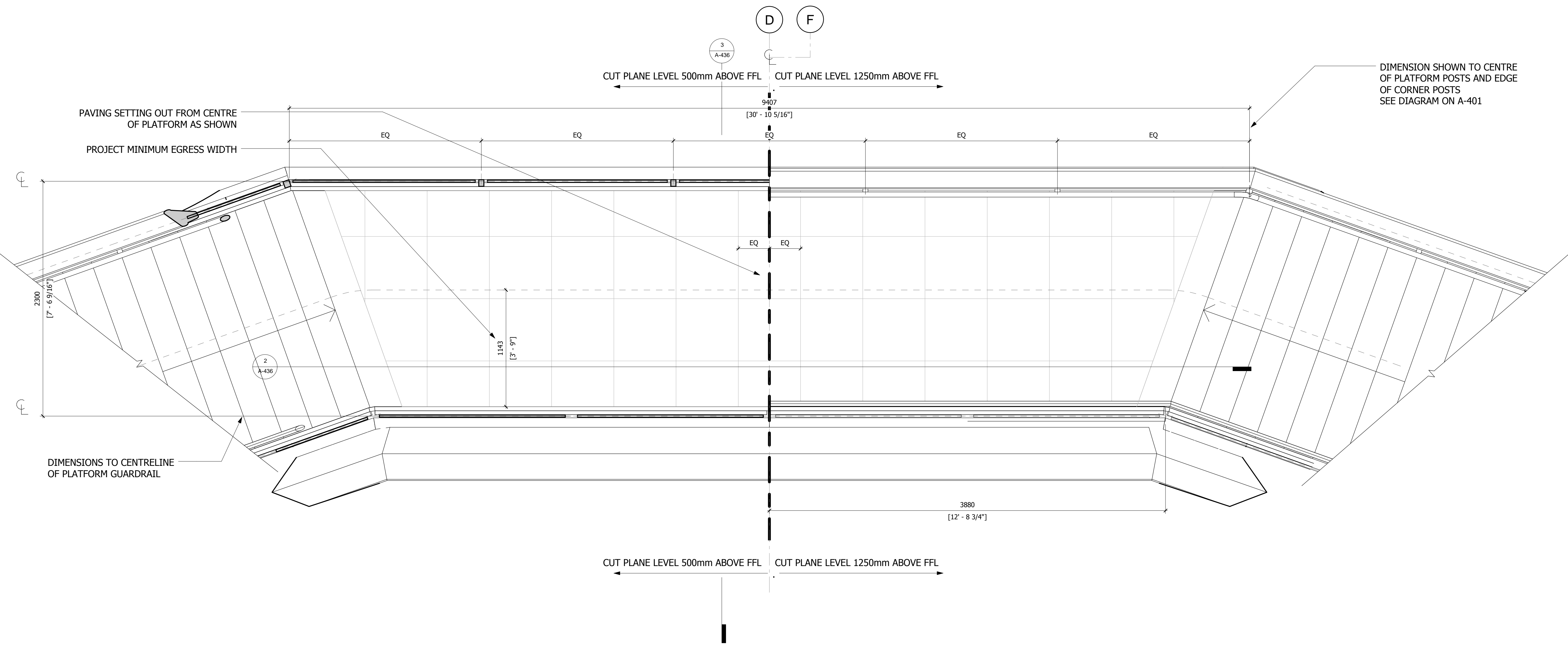


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Project No: 2208002
Drawn By: *[Signature]*
Sheet Number: **HYE-VS-A-436**

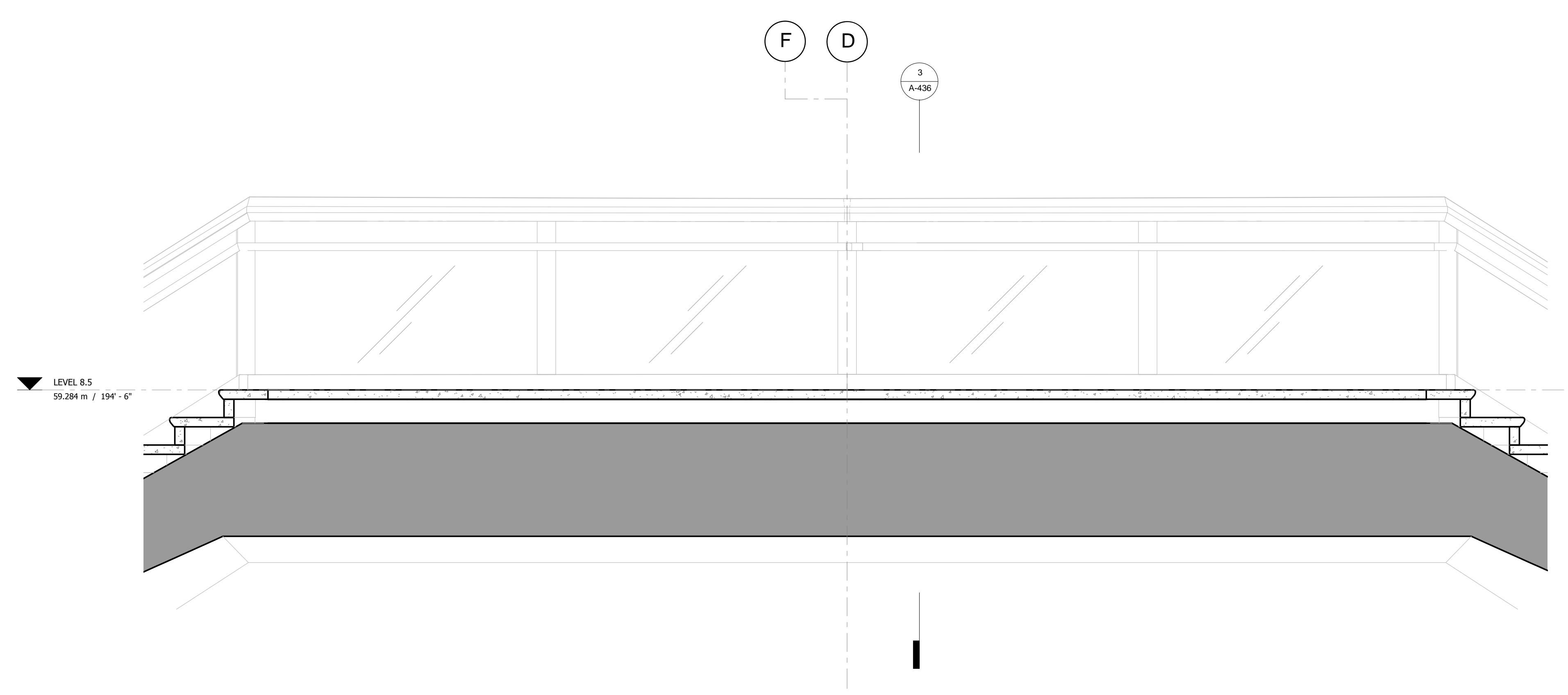
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LEVEL 8.5 (DISPLAY 8)**

Sheet Number
A-436.00

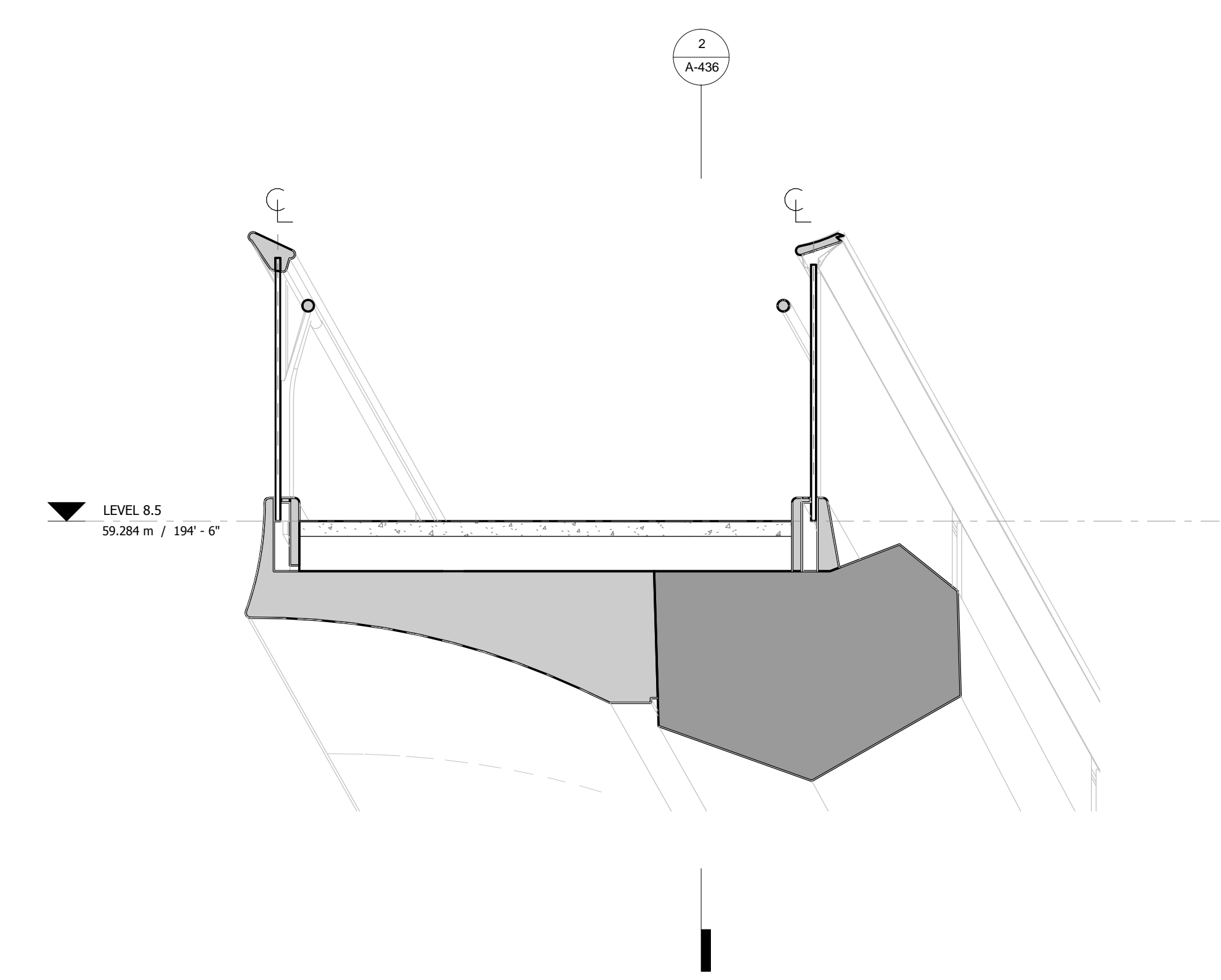
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TRANSITION PLATFORMS 8.5B (SHOWN HERE) AND 8.5K ARE IDENTICAL TO TYPICAL PLATFORMS 8.5D, 8.5F AND 8.5H



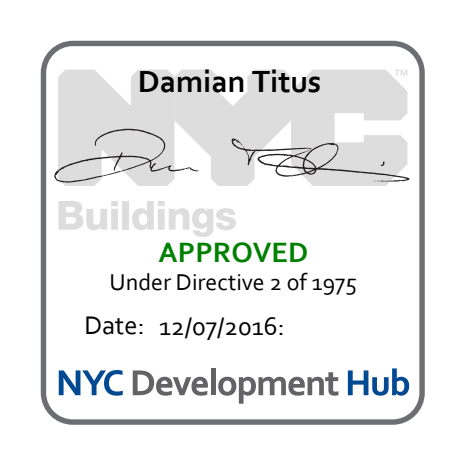
1 PLAN 1 : 20

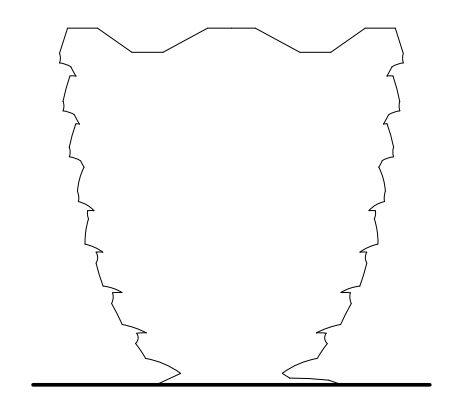


2 LONG SECTION 1 : 20



3 CROSS SECTION 1 : 20





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

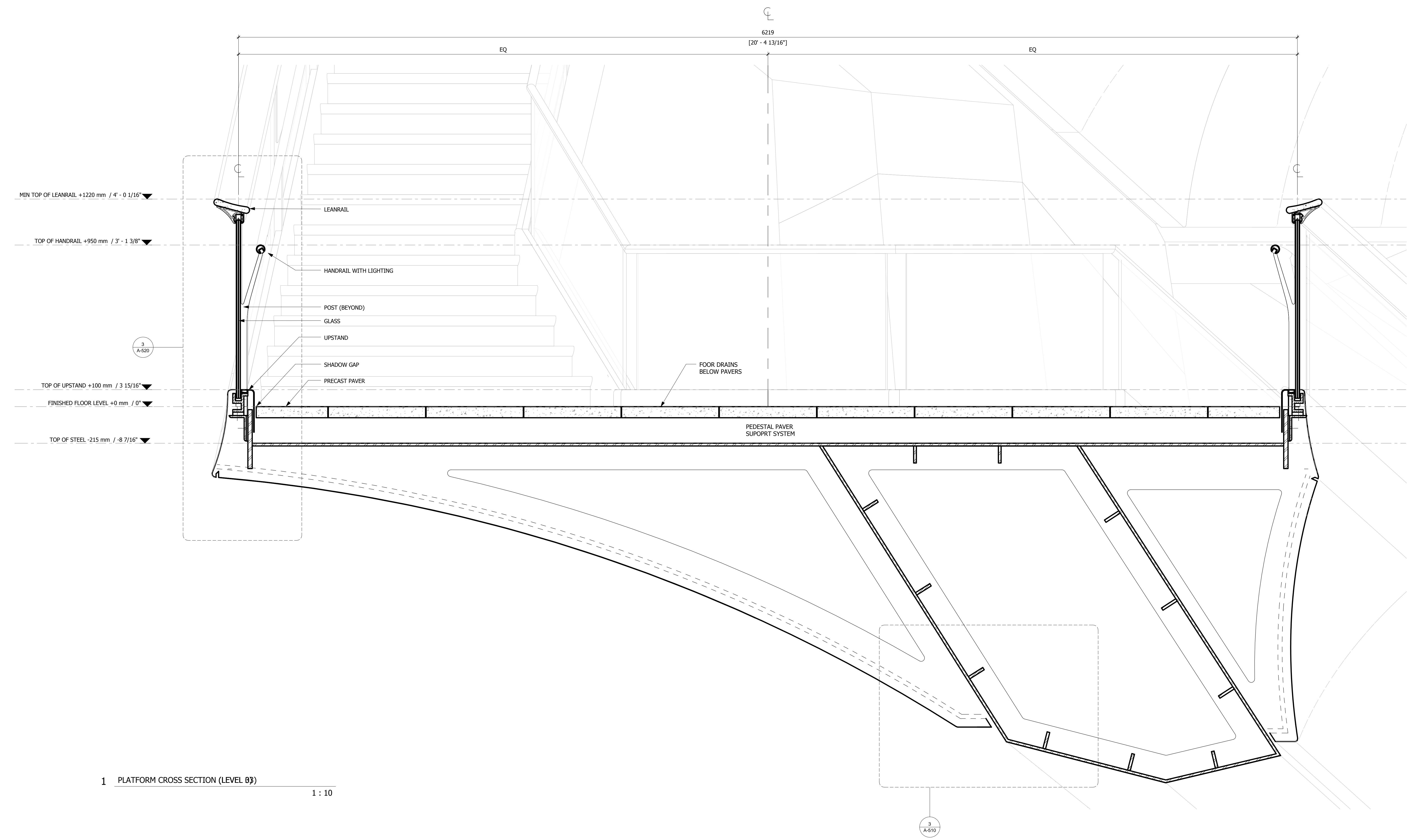
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

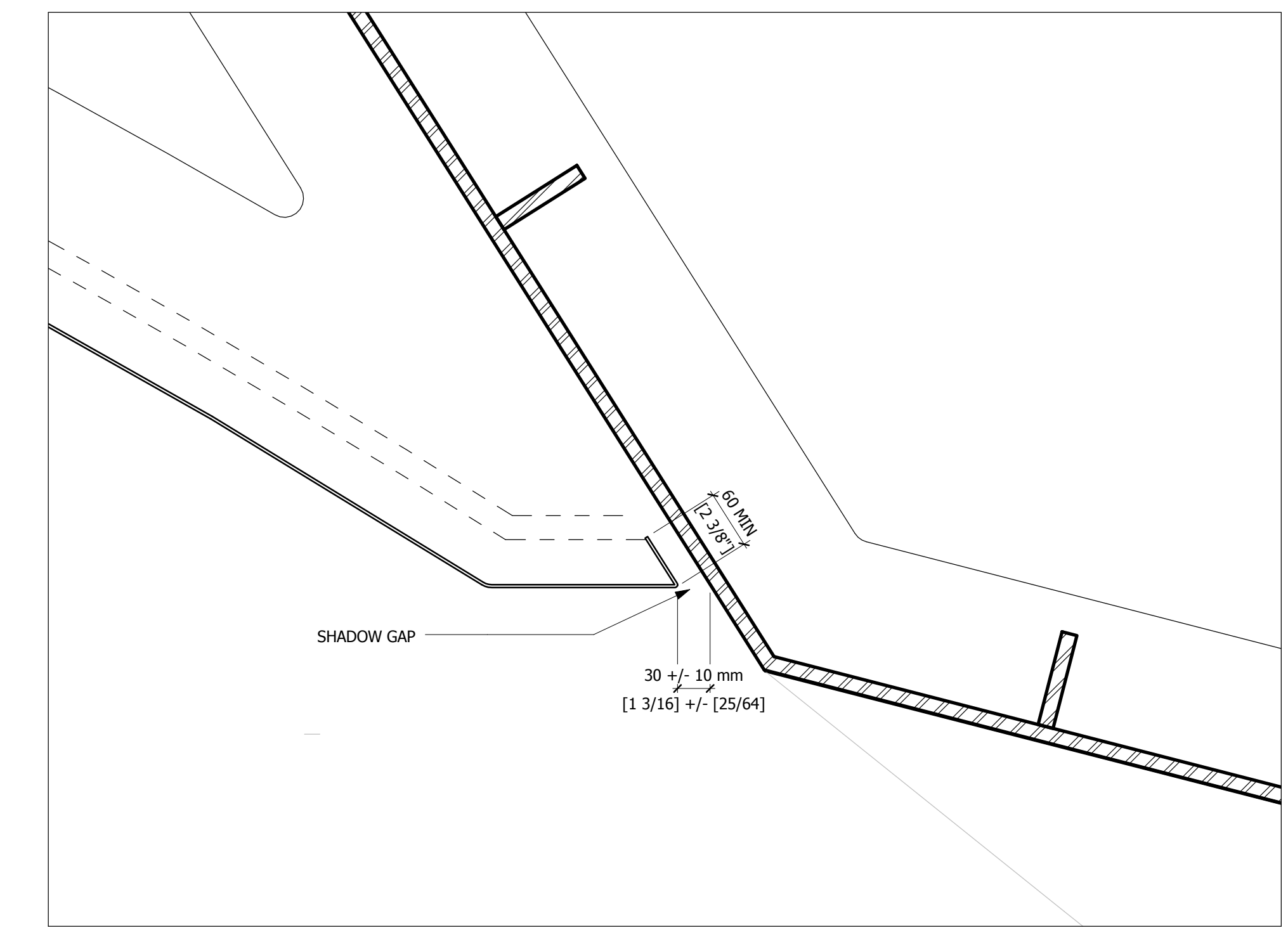
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

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 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

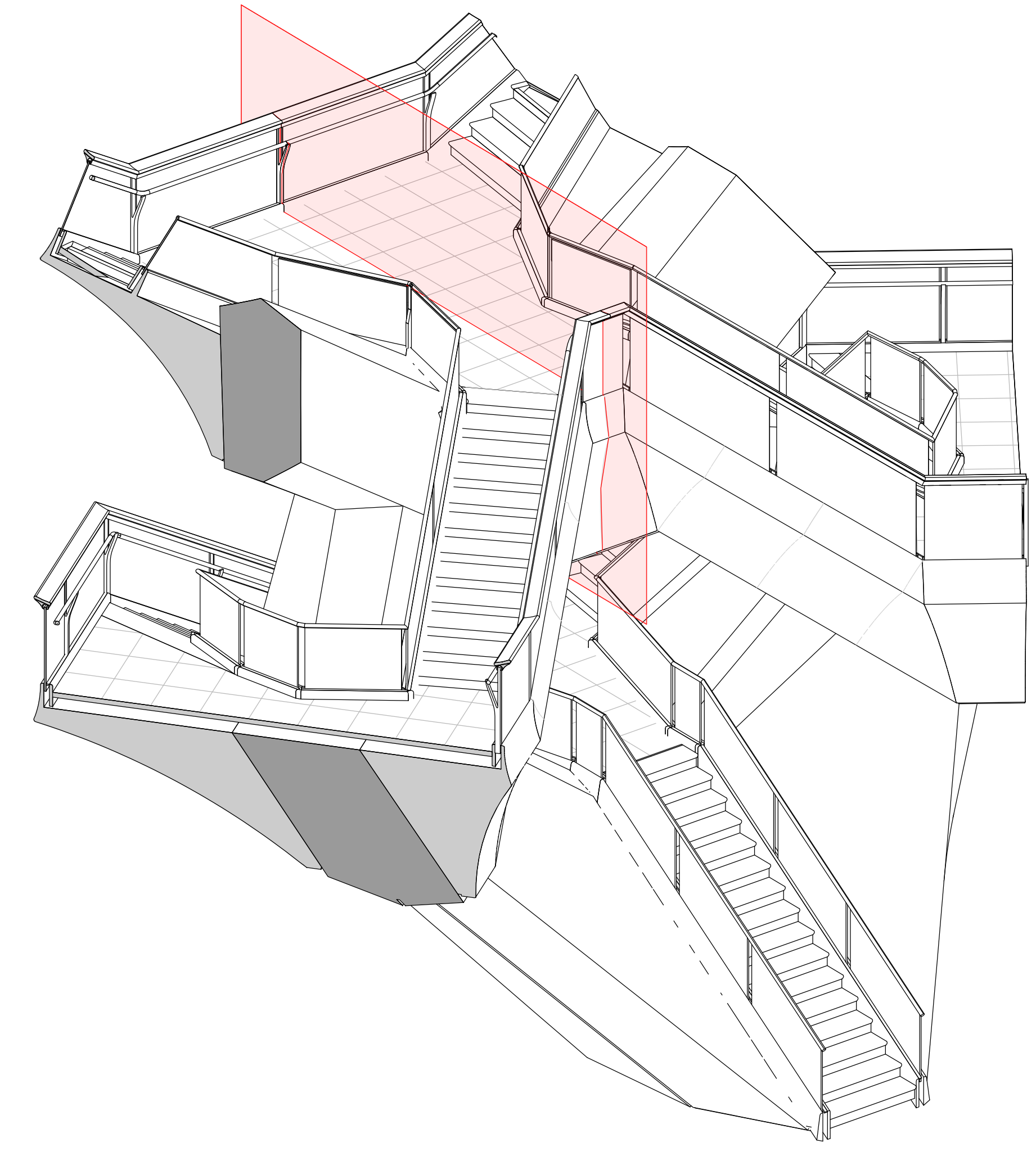
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1 PLATFORM CROSS SECTION (LEVEL 03) 1 : 10

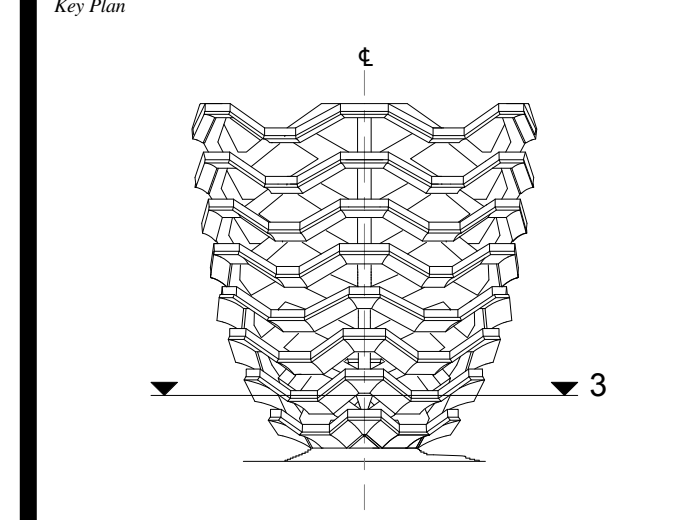


3 SOFFIT SHADOW GAP 1 : 5



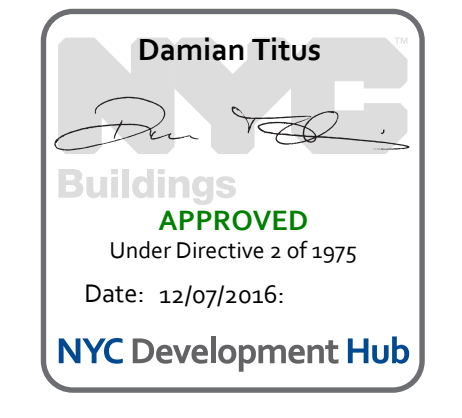
2 KEY DIAGRAM

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 Project No: 2298007
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-510

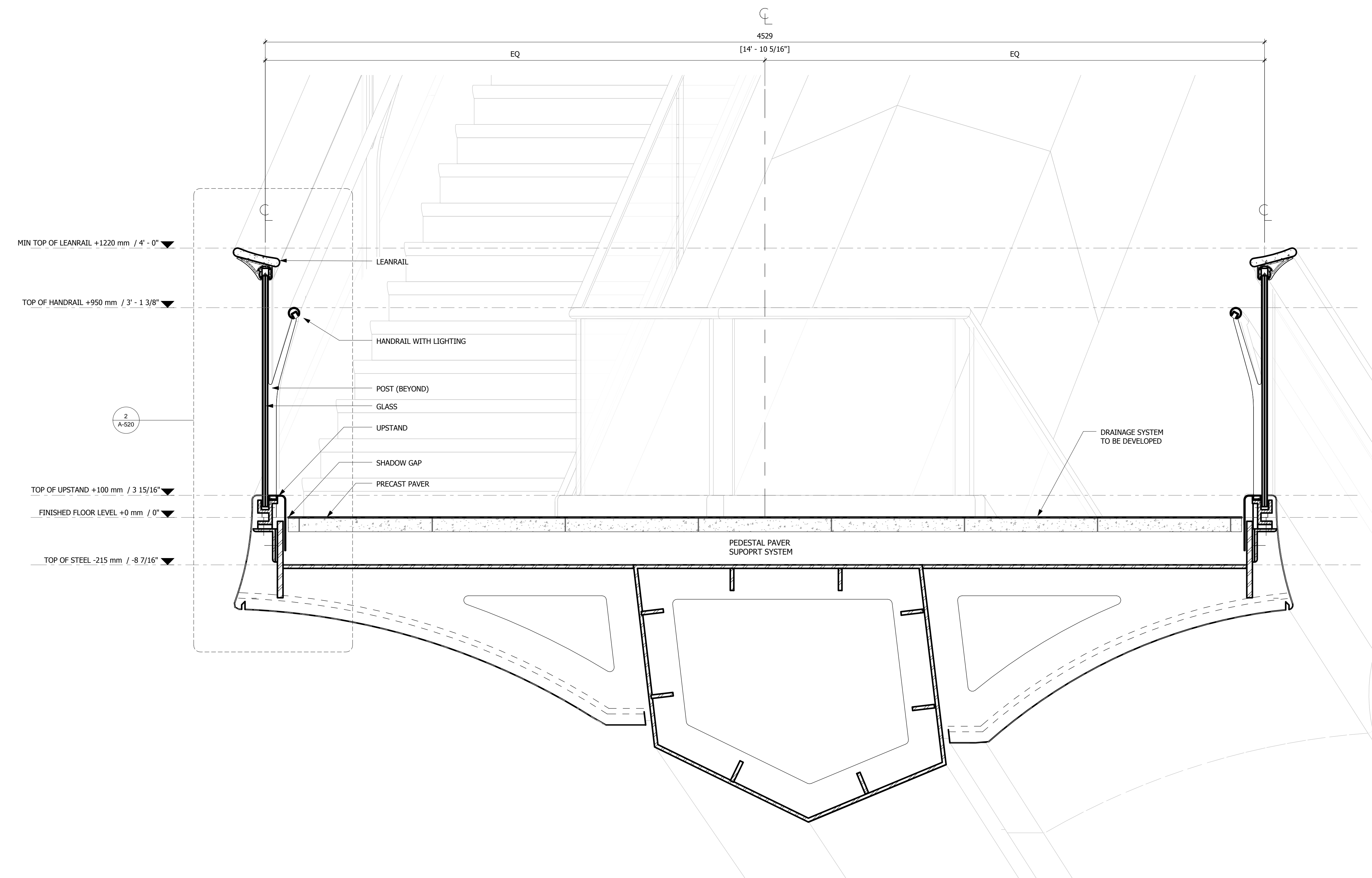
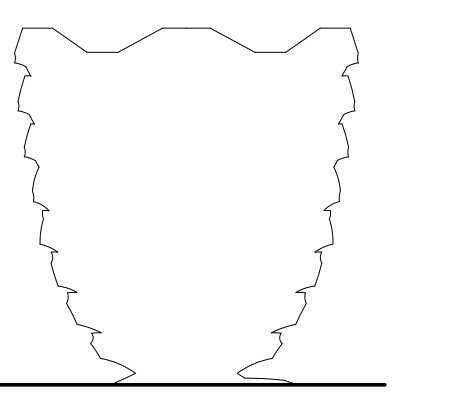


**PLATFORM CROSS
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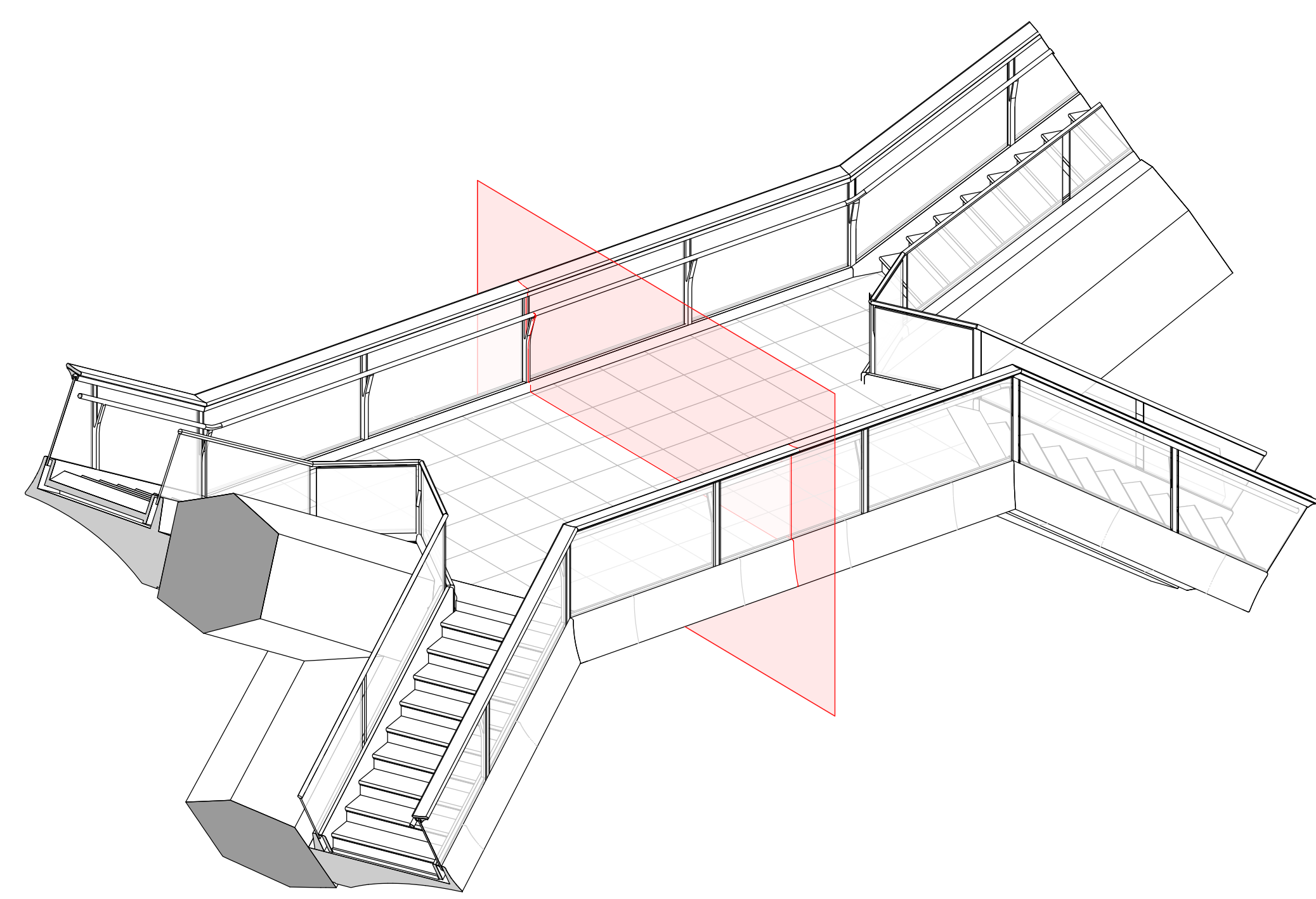
Sheet Number
A-510.00

**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



1 PLATFORM CROSS SECTION (LEVEL 7)
1 : 10



2 KEY DIAGRAM

Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

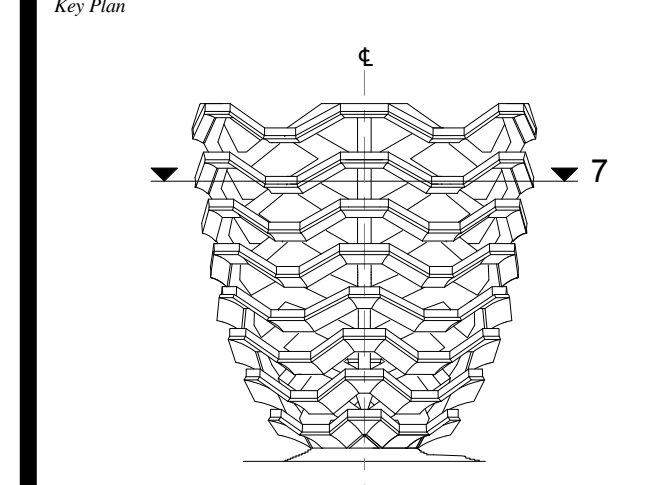
Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

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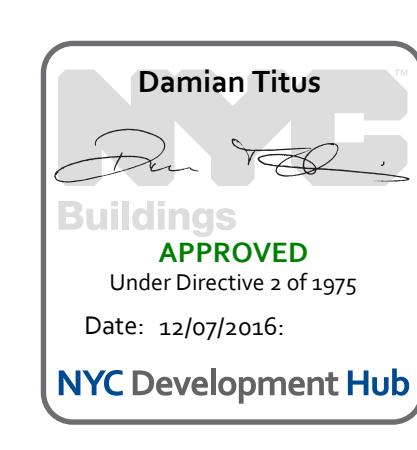


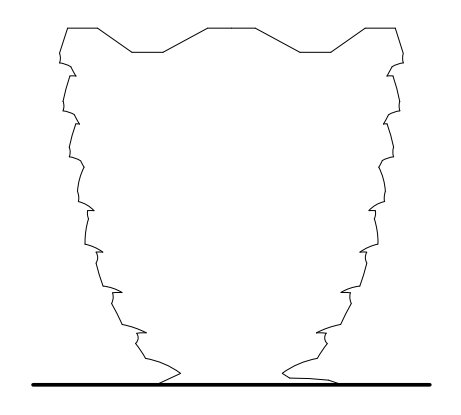
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 Project No: 2298007
 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-511

**PLATFORM CROSS
SECTION (LEVEL 7)**

Sheet Number
A-511.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 330 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

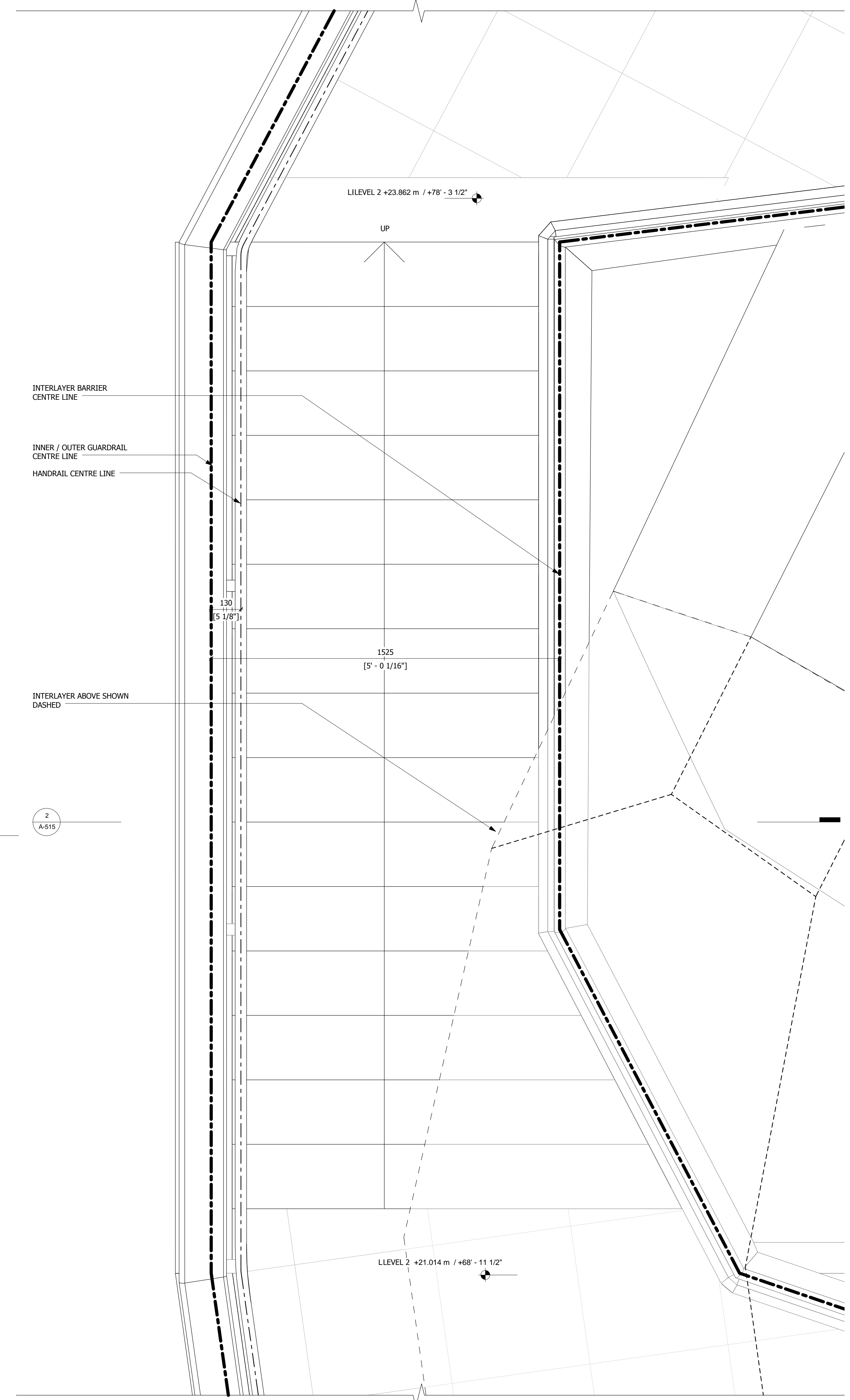
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

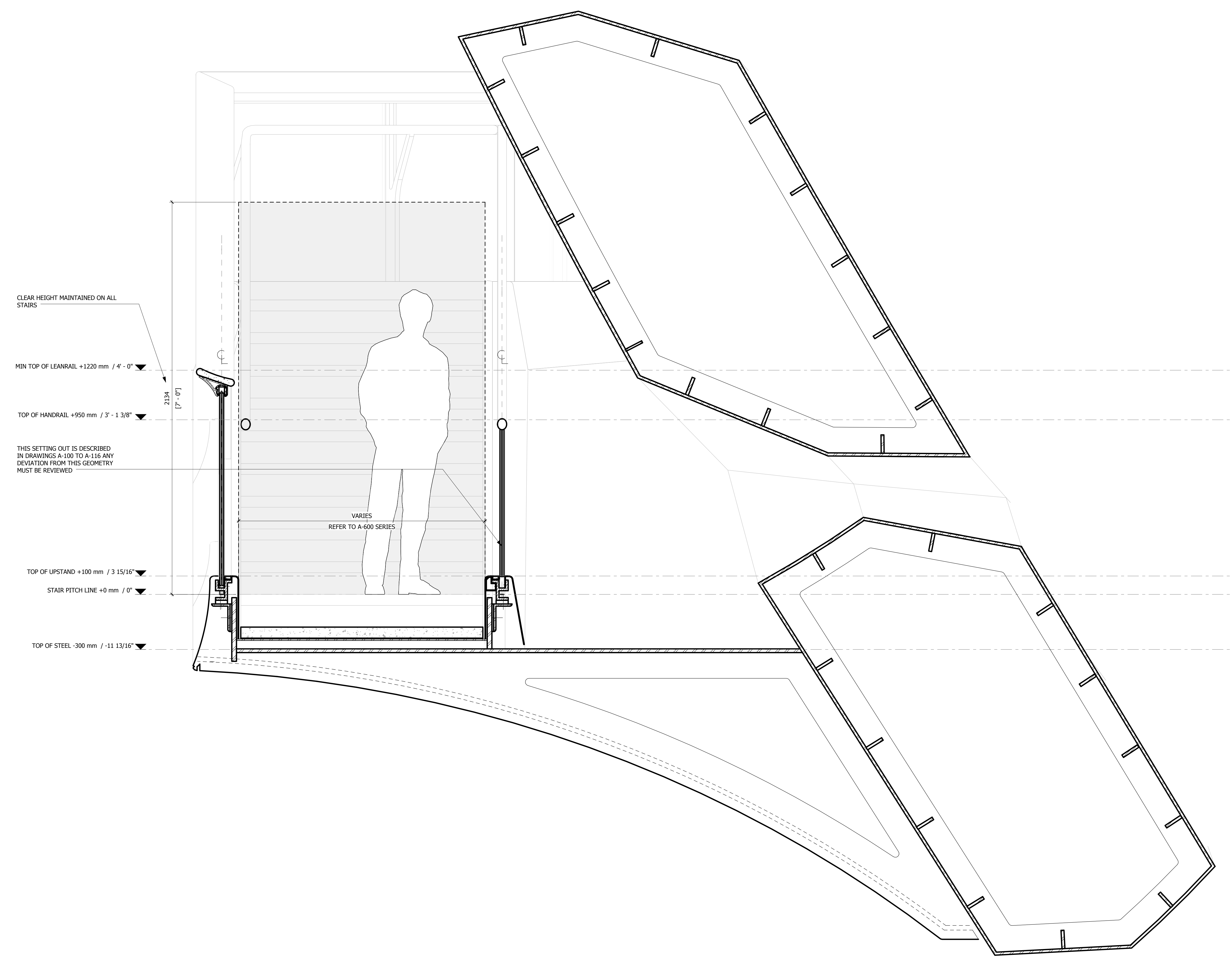
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security
 Ove Arup & Partners P.C.
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 New York, NY 10005
 Tel: 212.896.3000

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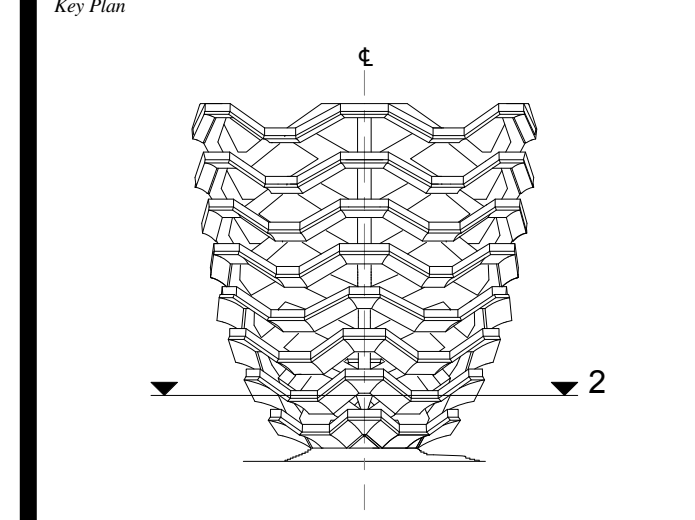


1 STAIR PLAN
 1 : 10



2 STAIR CROSS SECTION
 1 : 10

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 No. Issue Date

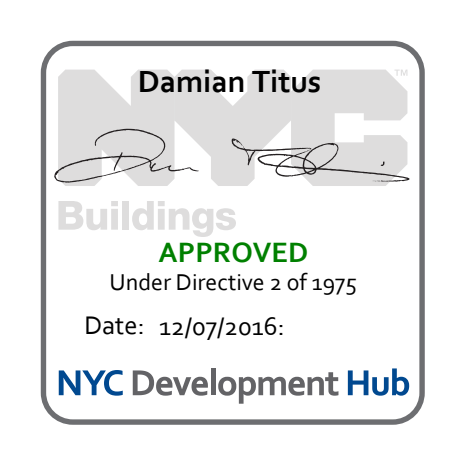


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 Project No: 2208002
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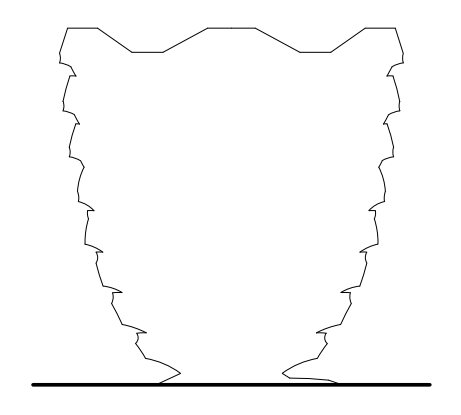
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 TYPE 3-TY)**

Sheet Number
A-515.00



**HUDSON YARDS
VESSEL**

530 WEST 33RD STREET
NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 330 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

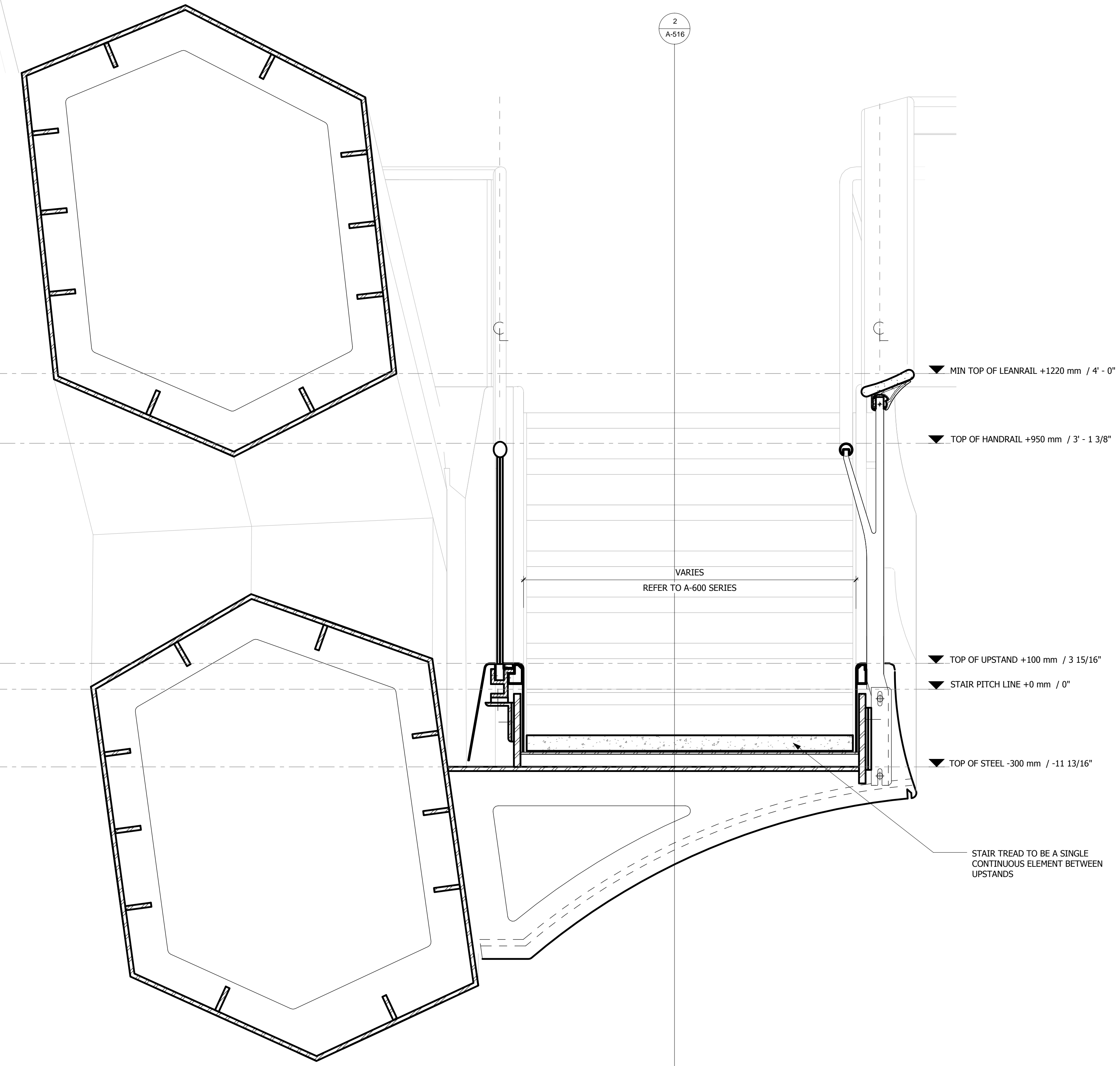
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

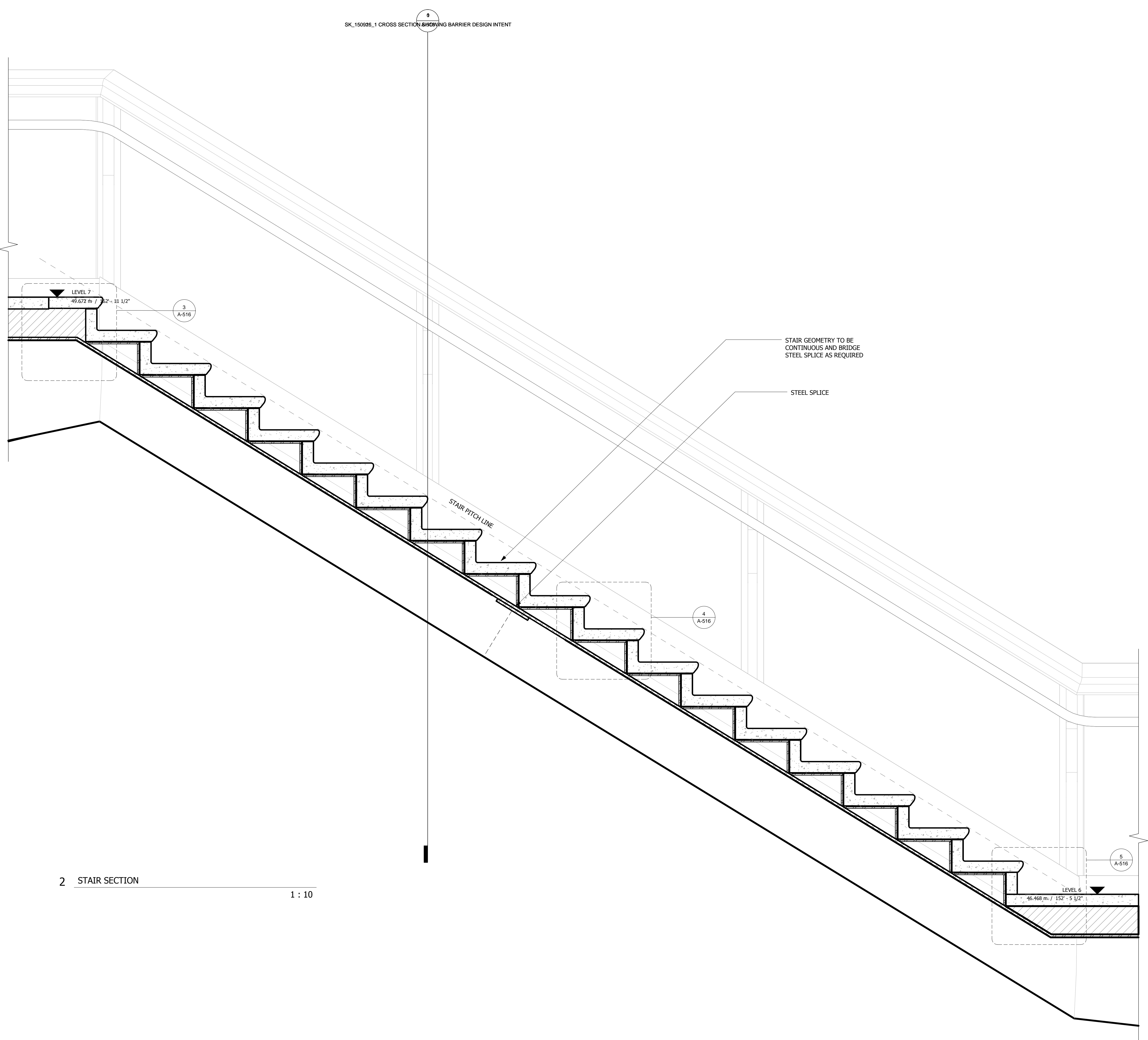
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

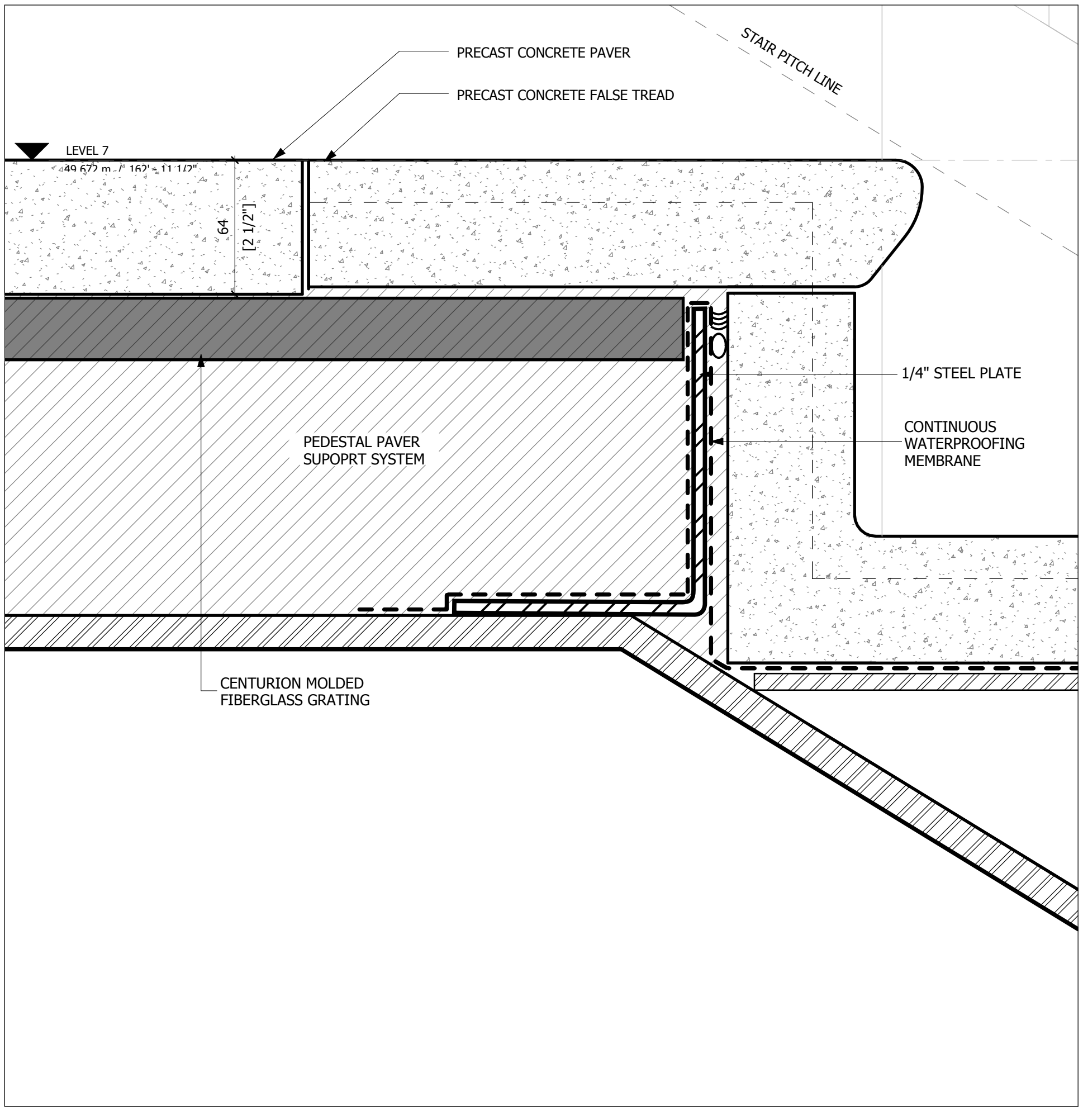
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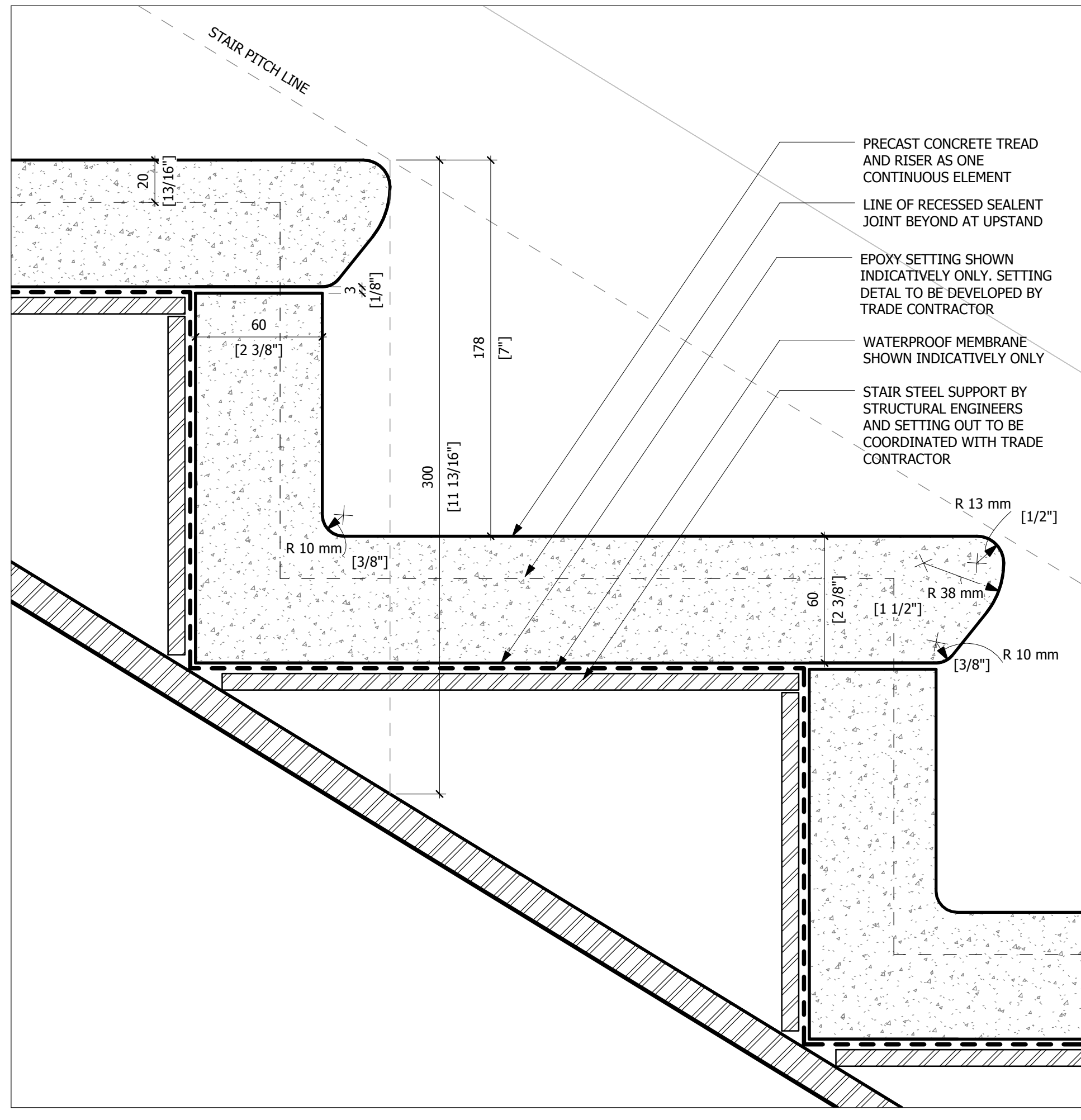
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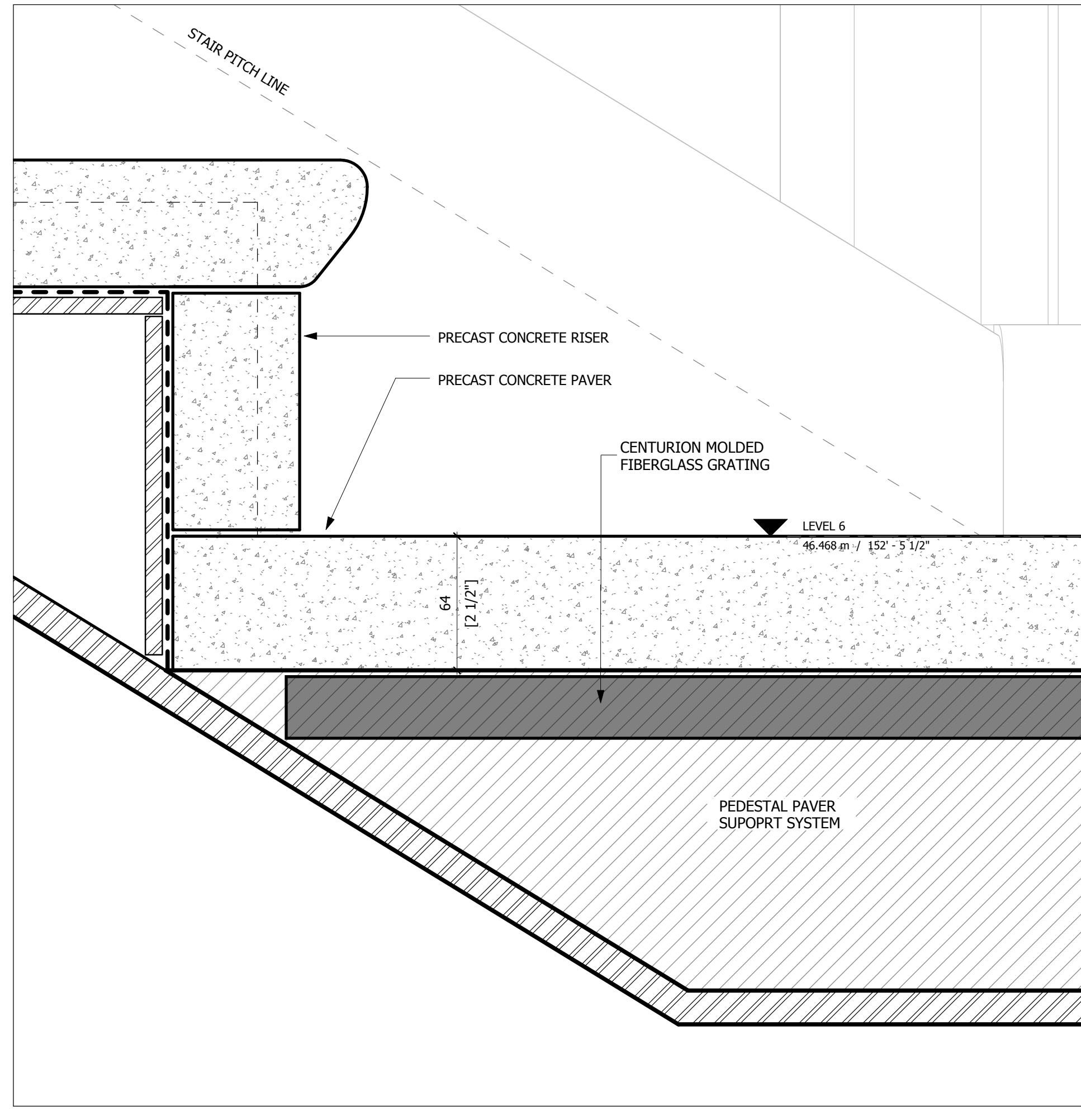
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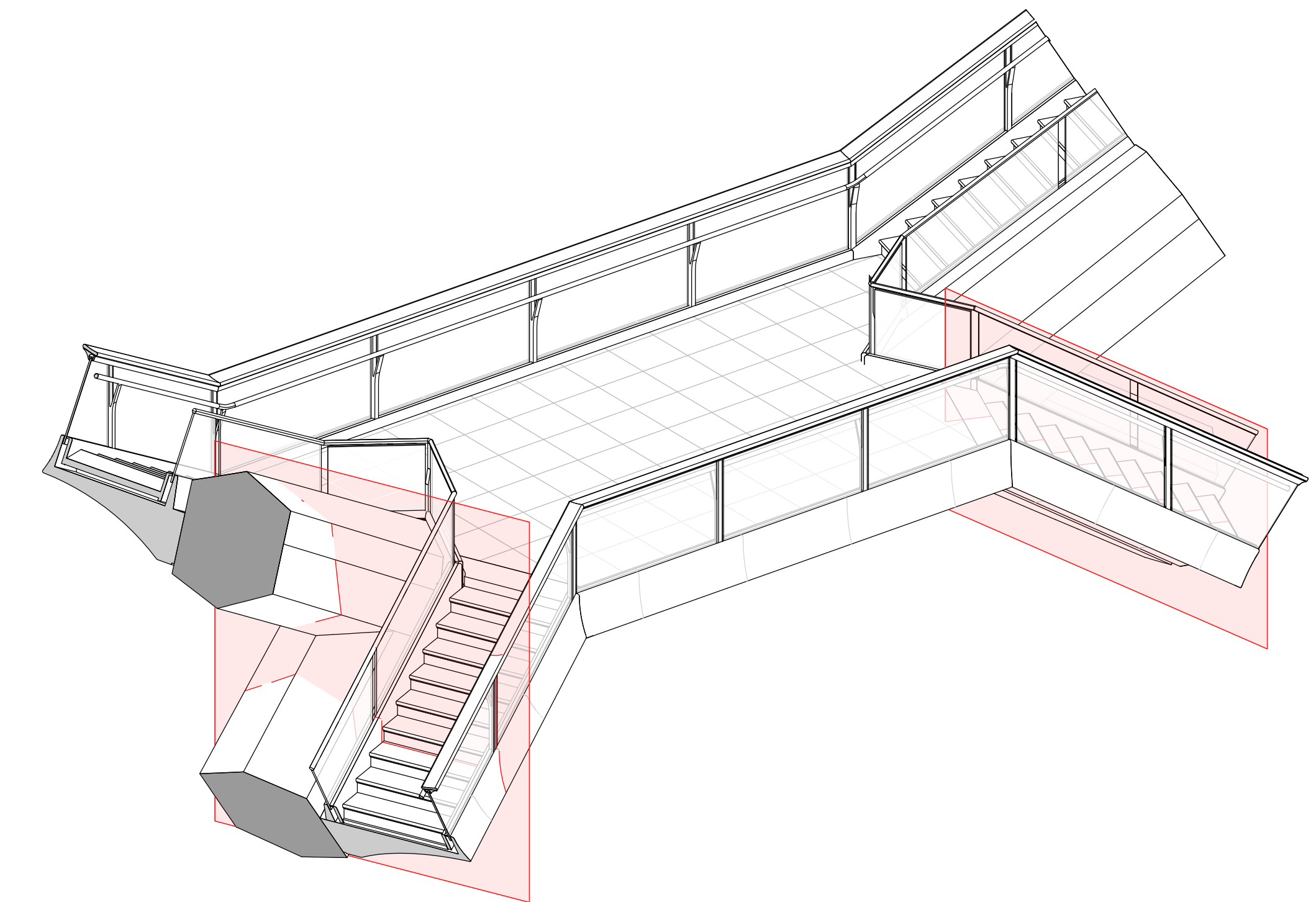
3 STAIR TOP DETAIL 1:2



4 STAIR TYPICAL DETAIL 1:2

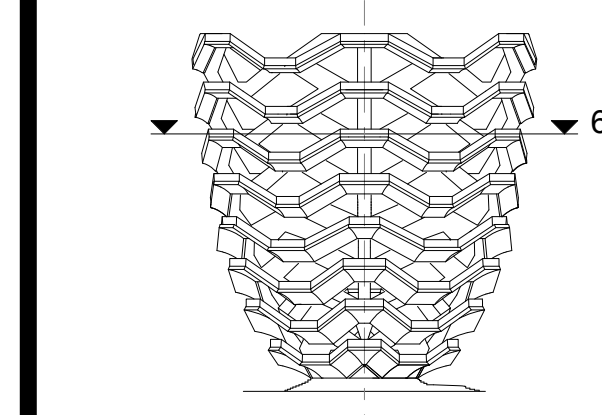


5 STAIR BASE DETAIL 1:2



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Key Plan

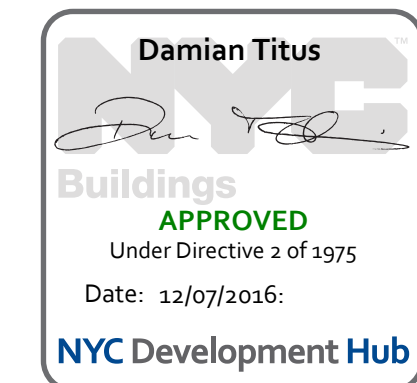


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 Sheet Number

HYE-VS-A-516

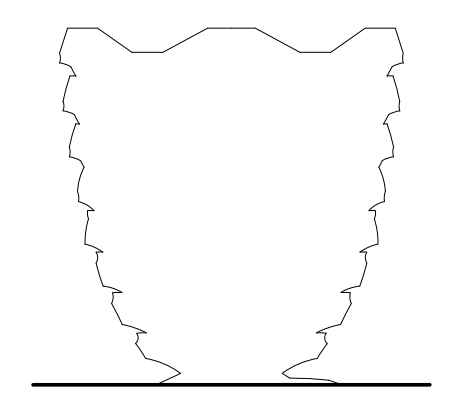
STAIR DETAILS (STAIR TYPE 6-TY)

Sheet Number
A-516.00



**HUDSON YARDS
 VESSEL**

530 WEST 33RD STREET
 NEW YORK, NY



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

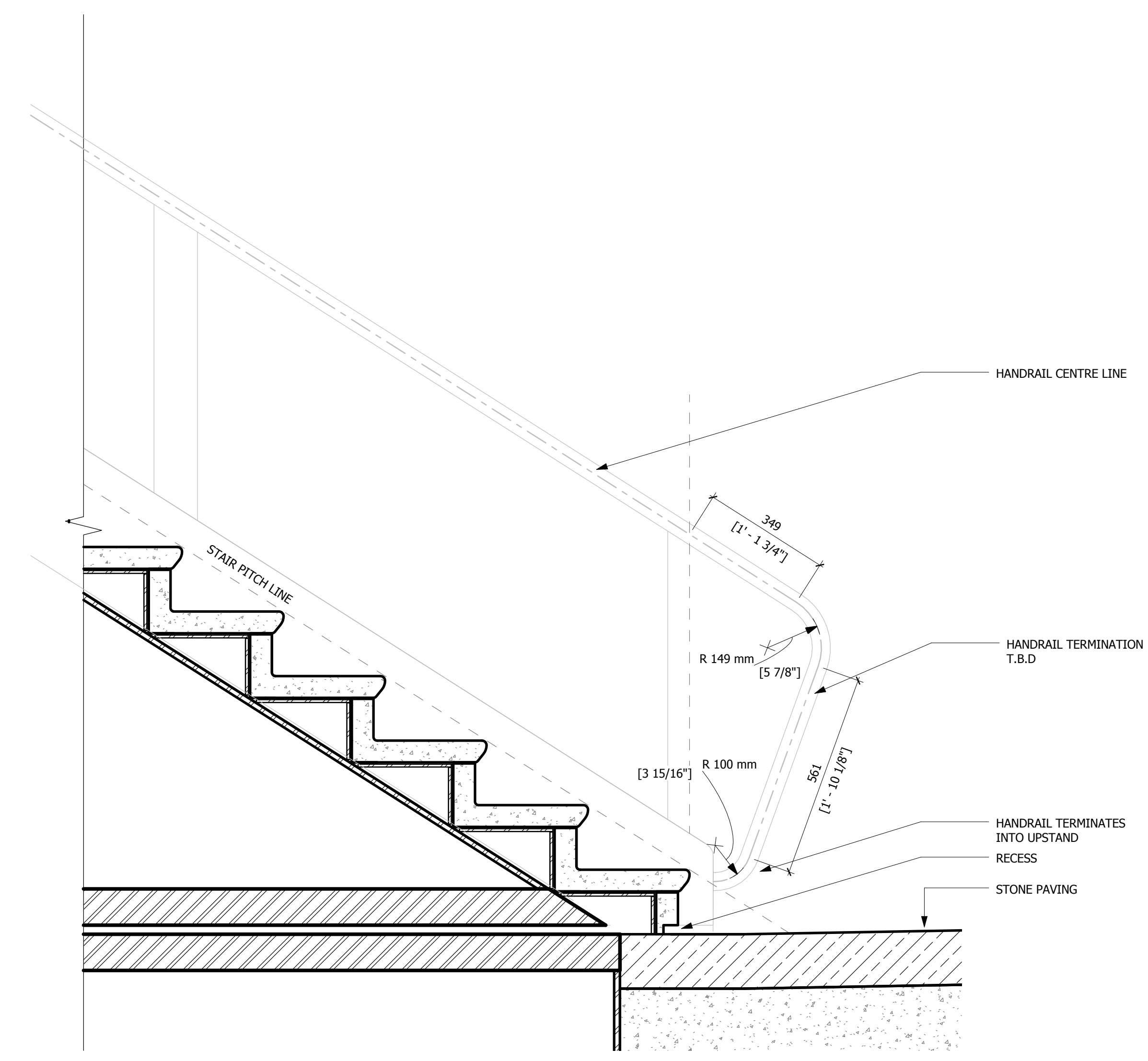
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

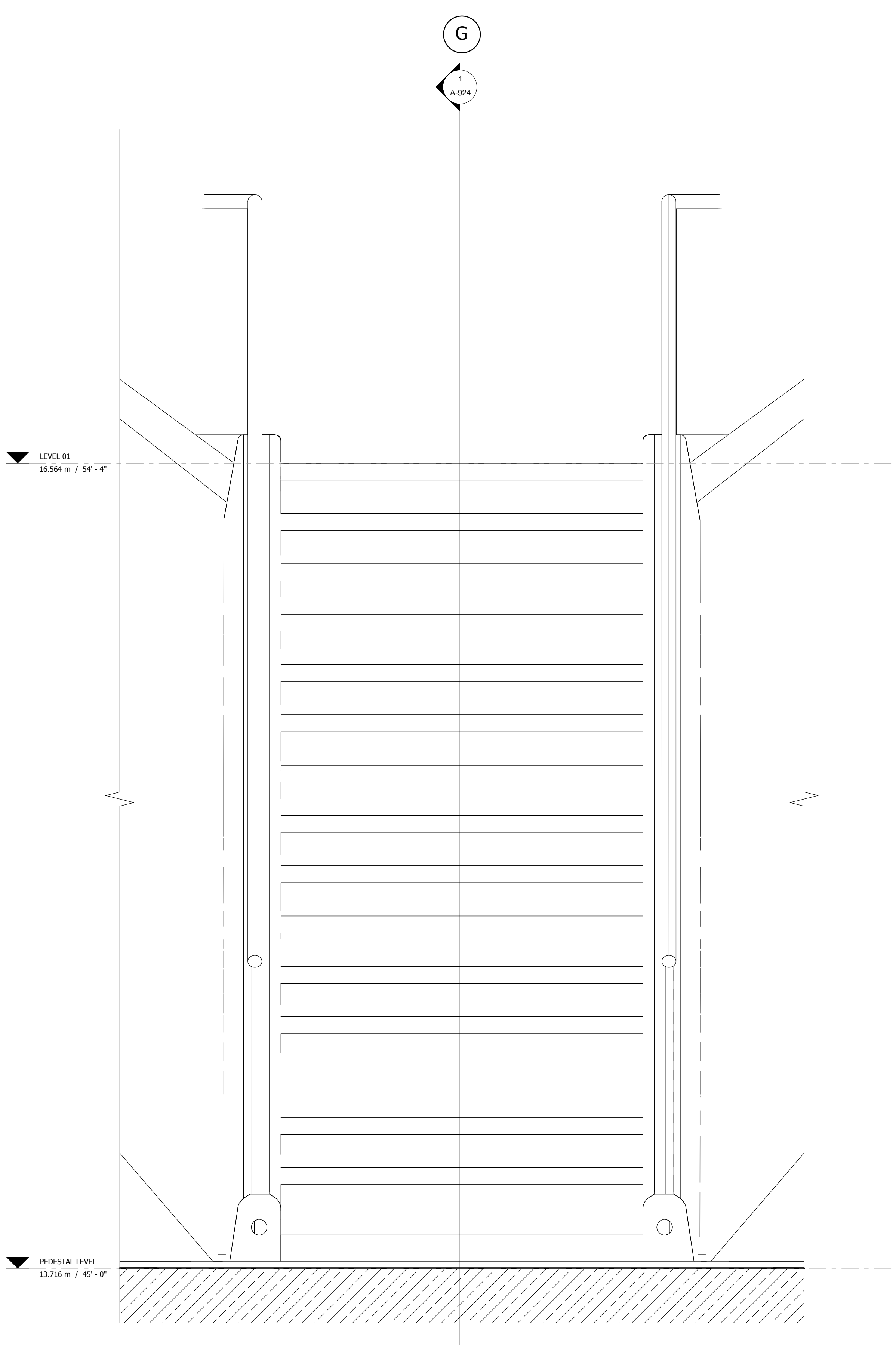
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

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 New York, NY 10005
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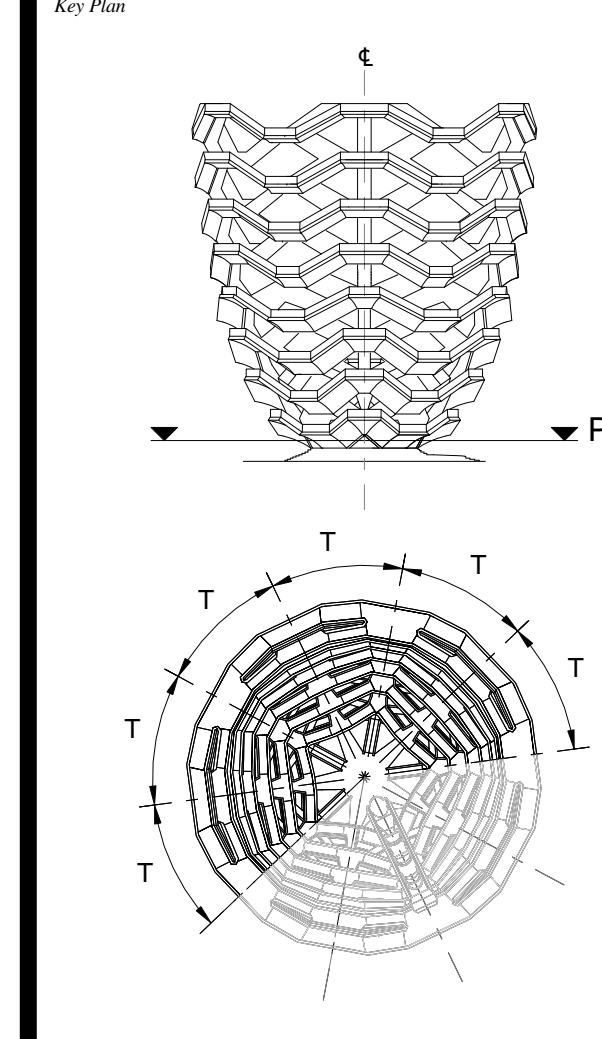


1 SECTION
 1:10



2 ELEVATION
 1:10

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 No. Inset Date

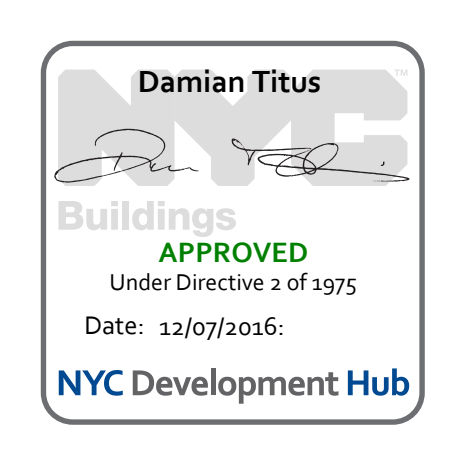


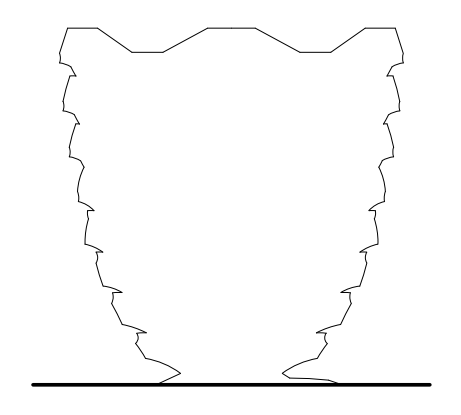
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 Project No: 2208002
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 Sheet Number: [Signature]

HYE-VS-A-517

**STAIR DETAILS (STAIR
 TYPE PEDESTAL)**

Sheet Number
A-517.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 330 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 New York, NY 10022
 Tel: 212.708.6800

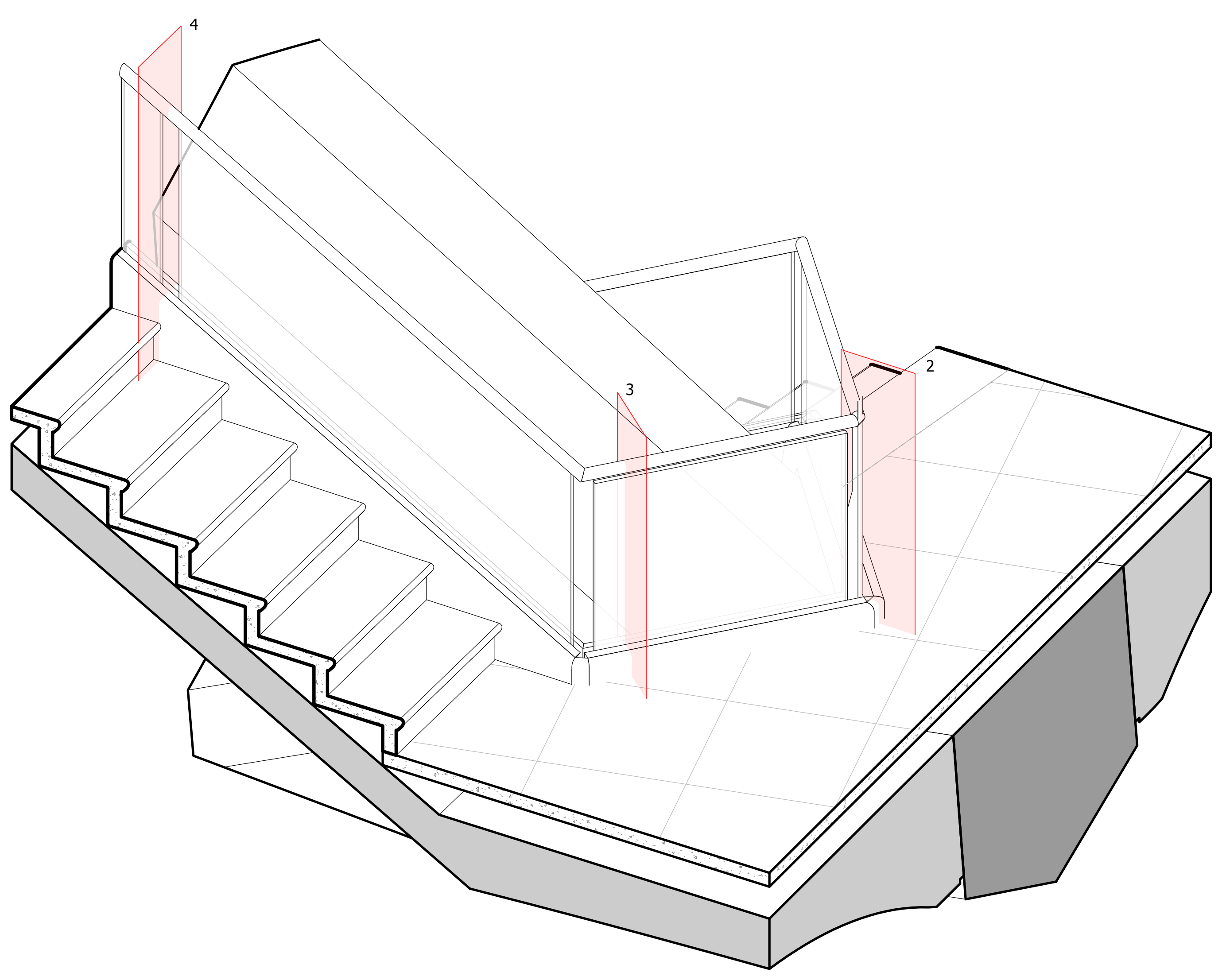
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10036
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

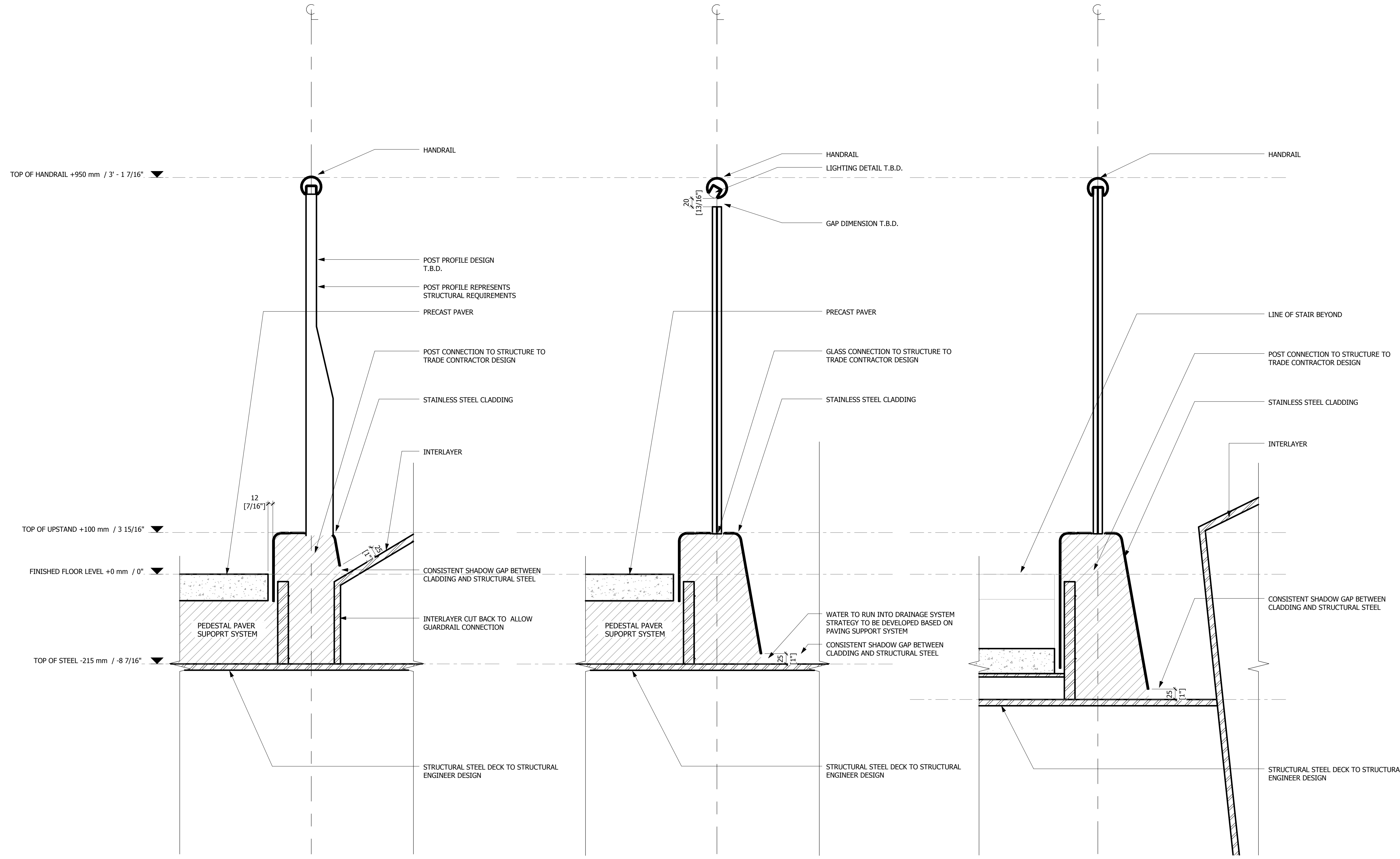
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

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 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 West Street
 New York, NY 10005
 Tel: 212.896.3000

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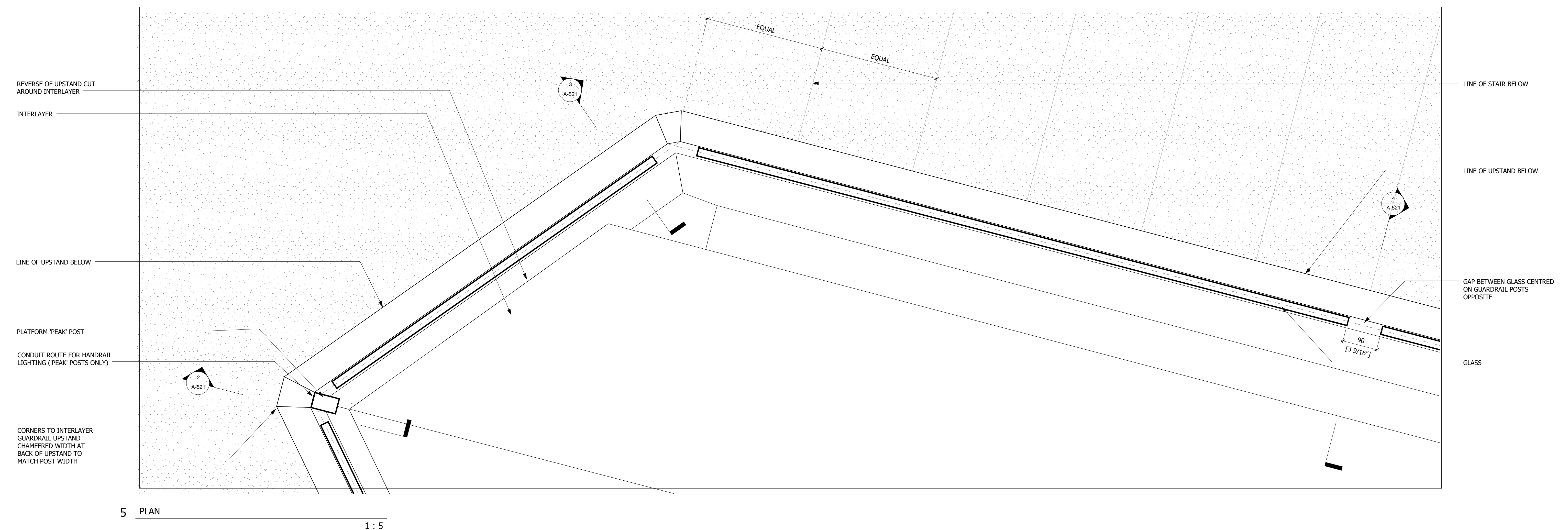
1 KEY DIAGRAM



2 INTERLAYER GUARDRAIL PLATFORM POST DETAIL SECTION
 1 : 5

3 INTERLAYER GUARDRAIL PLATFORM DETAIL SECTION
 1 : 5

4 INTERLAYER GUARDRAIL STAIR POST DETAIL SECTION
 1 : 5



5 PLAN
 1 : 5

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 No. Issue Date

Rev. Date

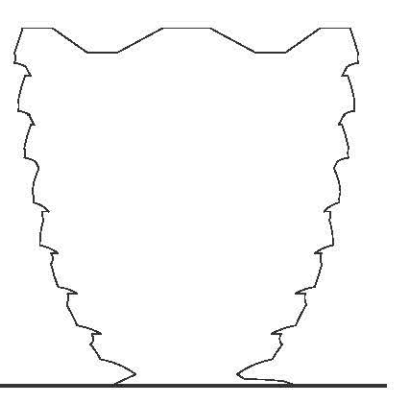
Date: 05/29/15
 Project No: 2298007
 Drawn By: [Signature]
 Sheet Number

HYE-VS-A-521

**INTERLAYER BARRIER
 DETAILS**

Project Number
A-521.00

Damian Titus
 Buildings
 APPROVED
 Under Directive 2 of 1975
 Date: 12/07/2015
 NYC Development Hub



Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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 100 Park Avenue
 Tel: 212.708.6800

Executive Architect
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 Architects & Planning Consultants
 11 West 42nd Street
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Design Architect
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 United Kingdom
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Structural Engineer
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 New York, NY 10017
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1	05/20/16	D.O.B. BUILDING PERMIT FILE NO. 0520/2016

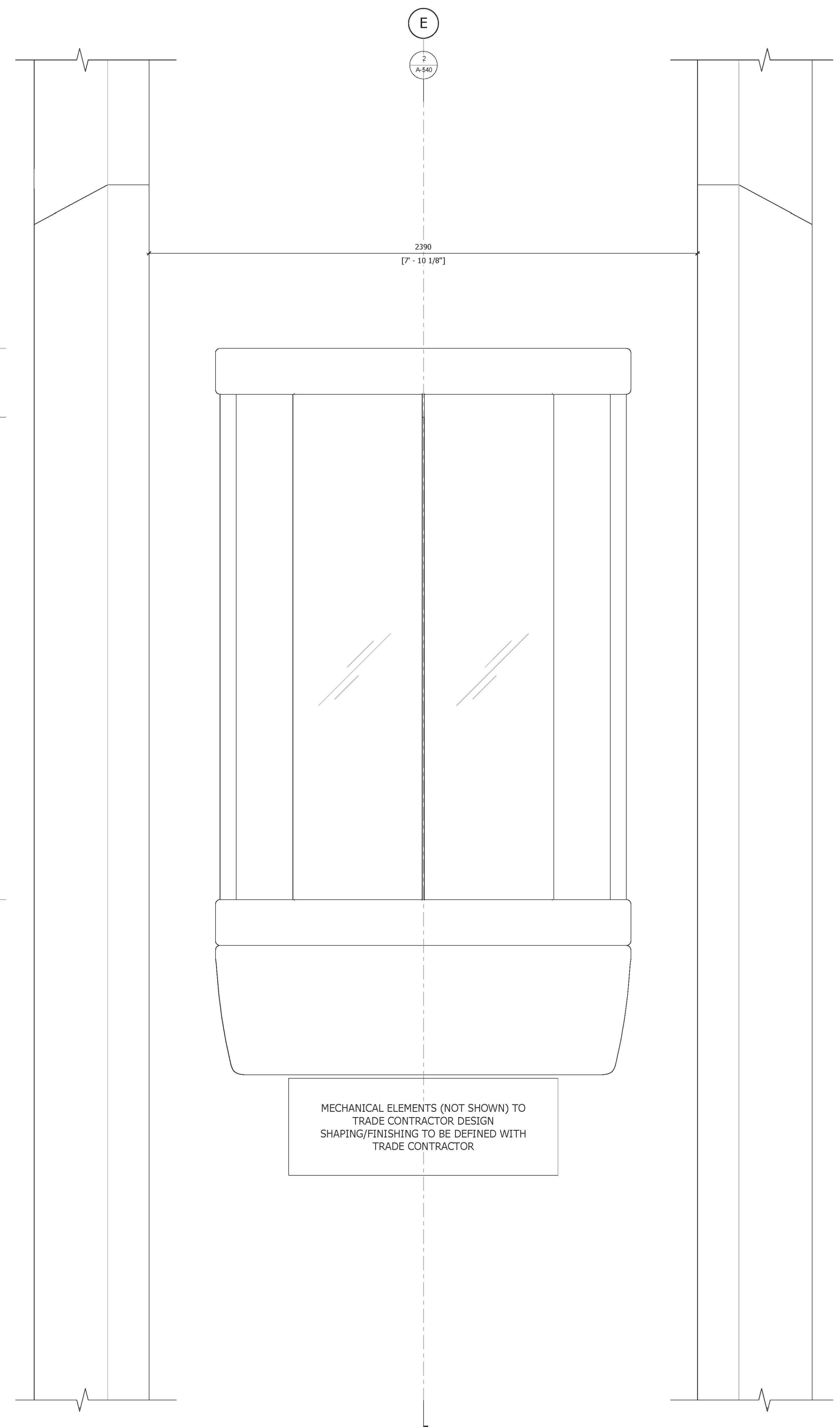
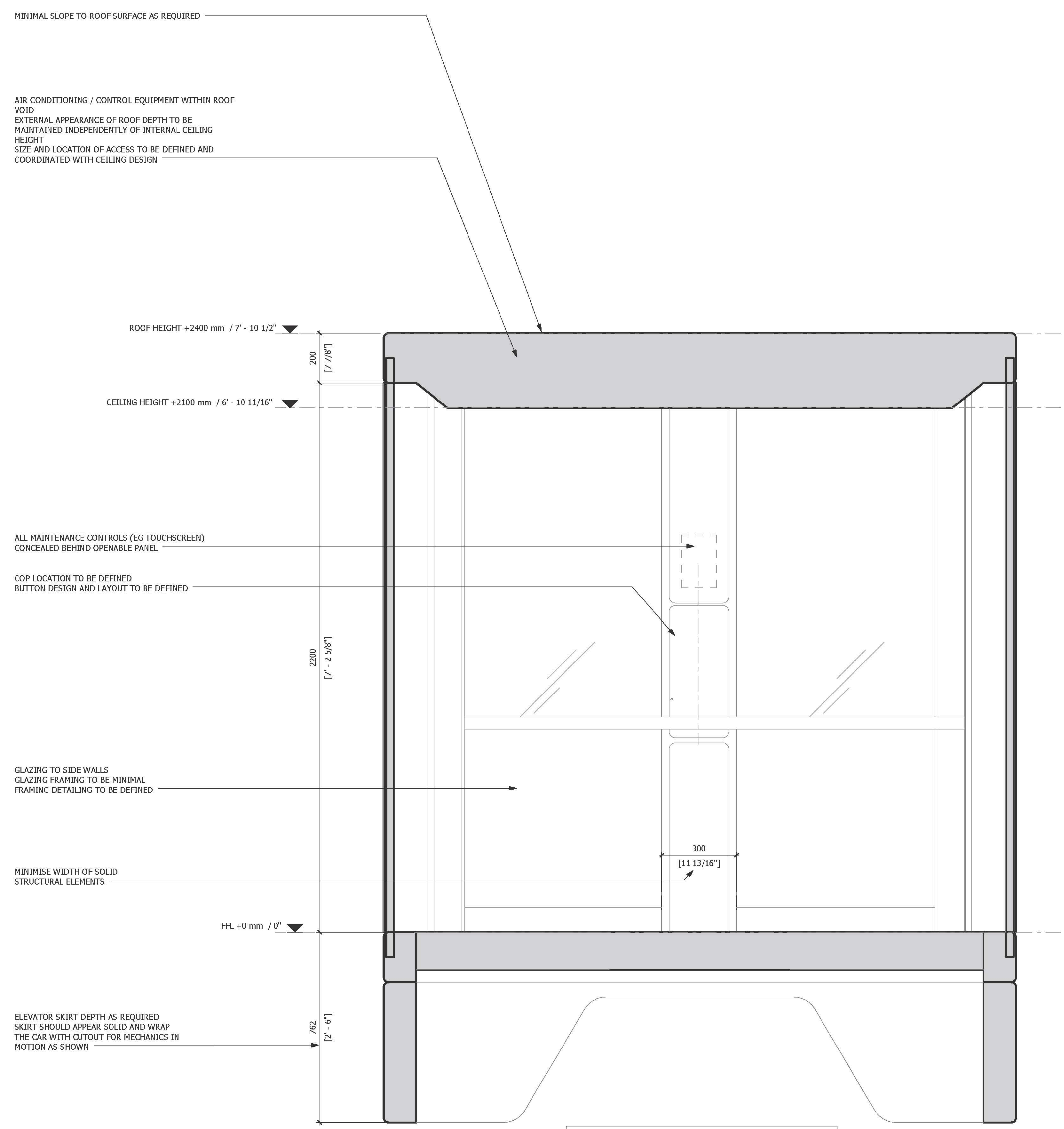
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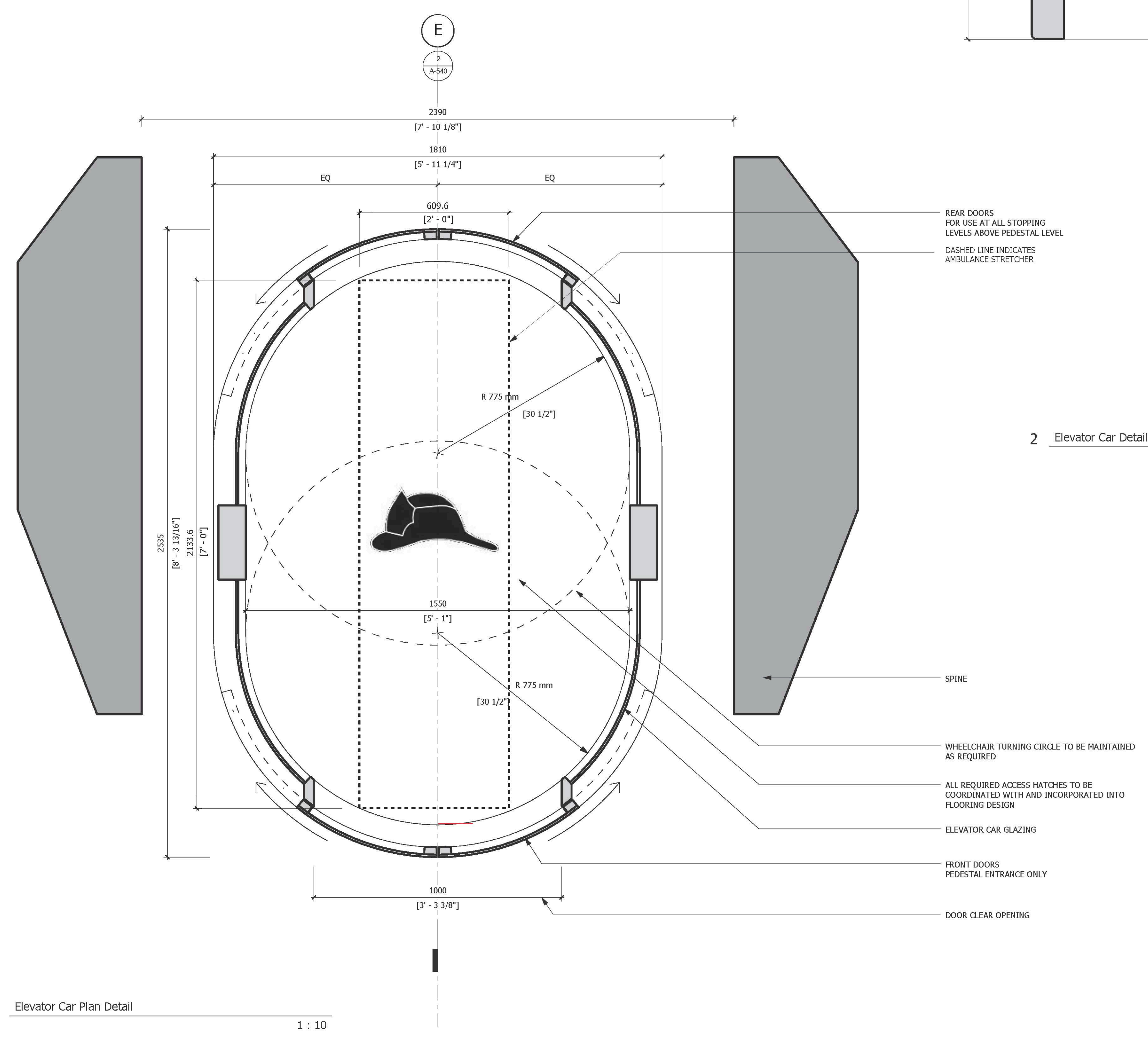
ELEVATOR CAR
 DETAILS

A-540.00

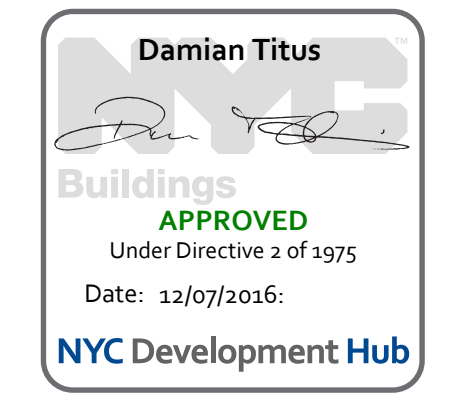


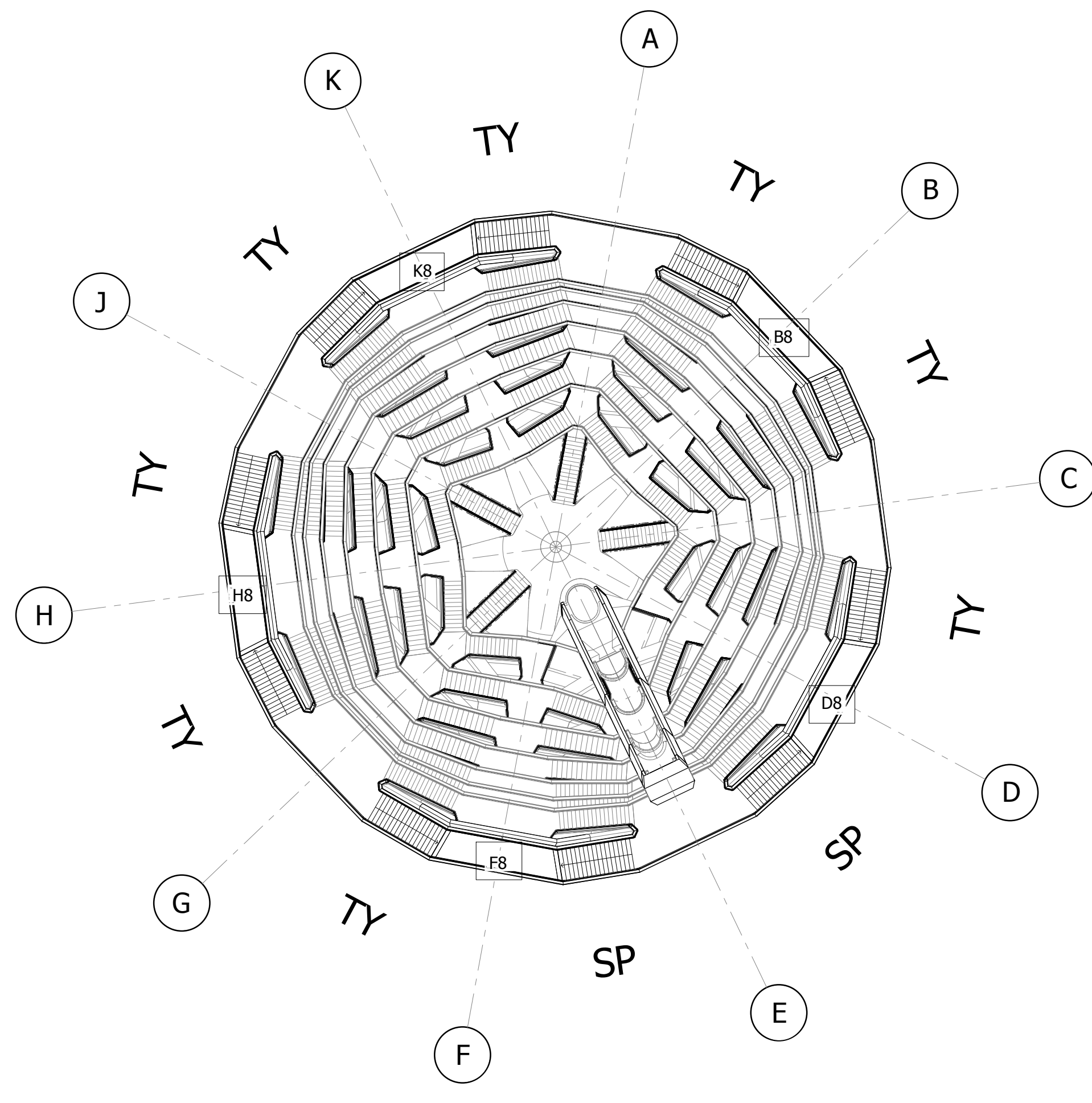
2 Elevator Car Detail Section 1:10

3 Elevator Car Elevation Detail 1:10



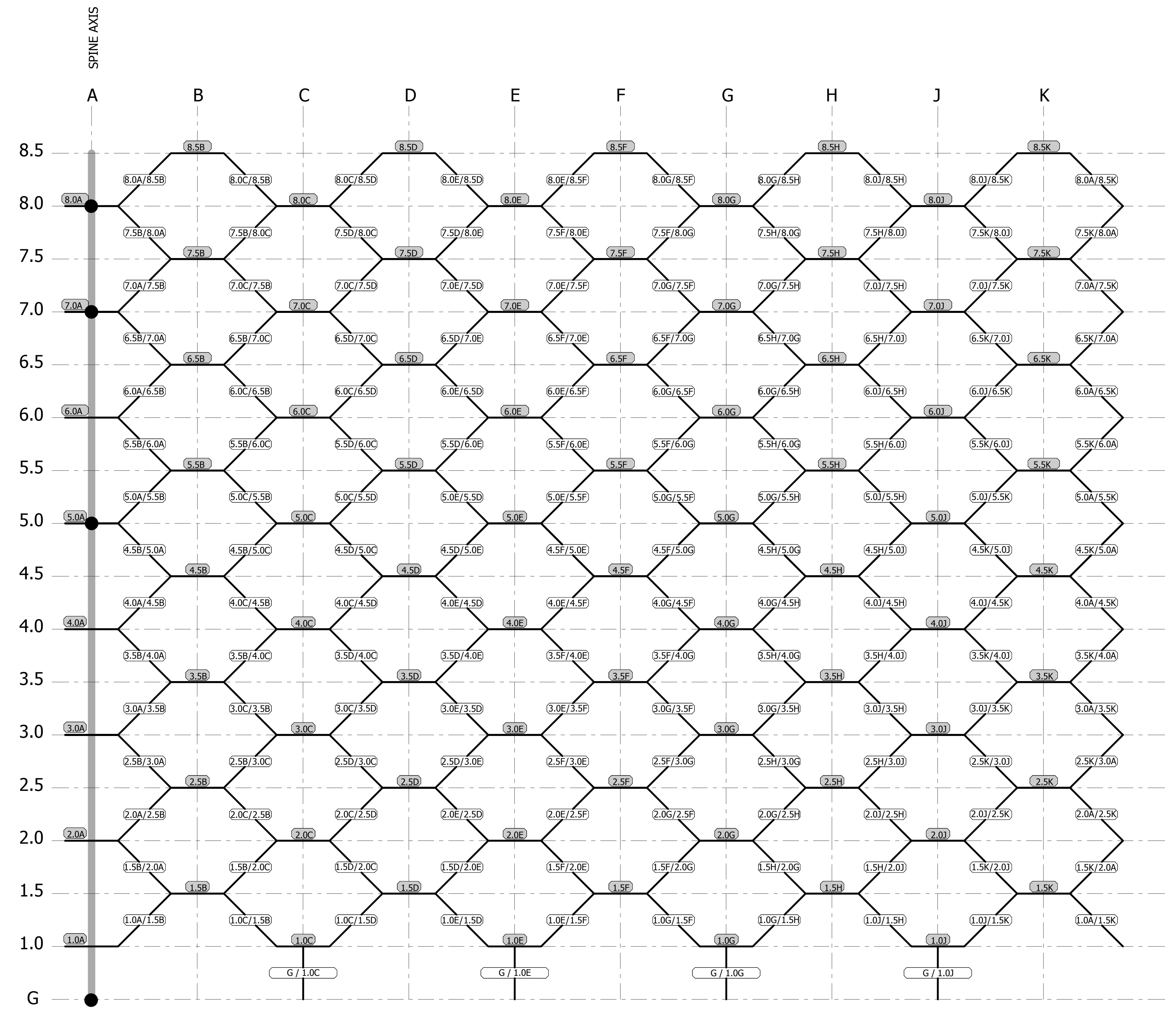
1 Elevator Car Plan Detail 1:10



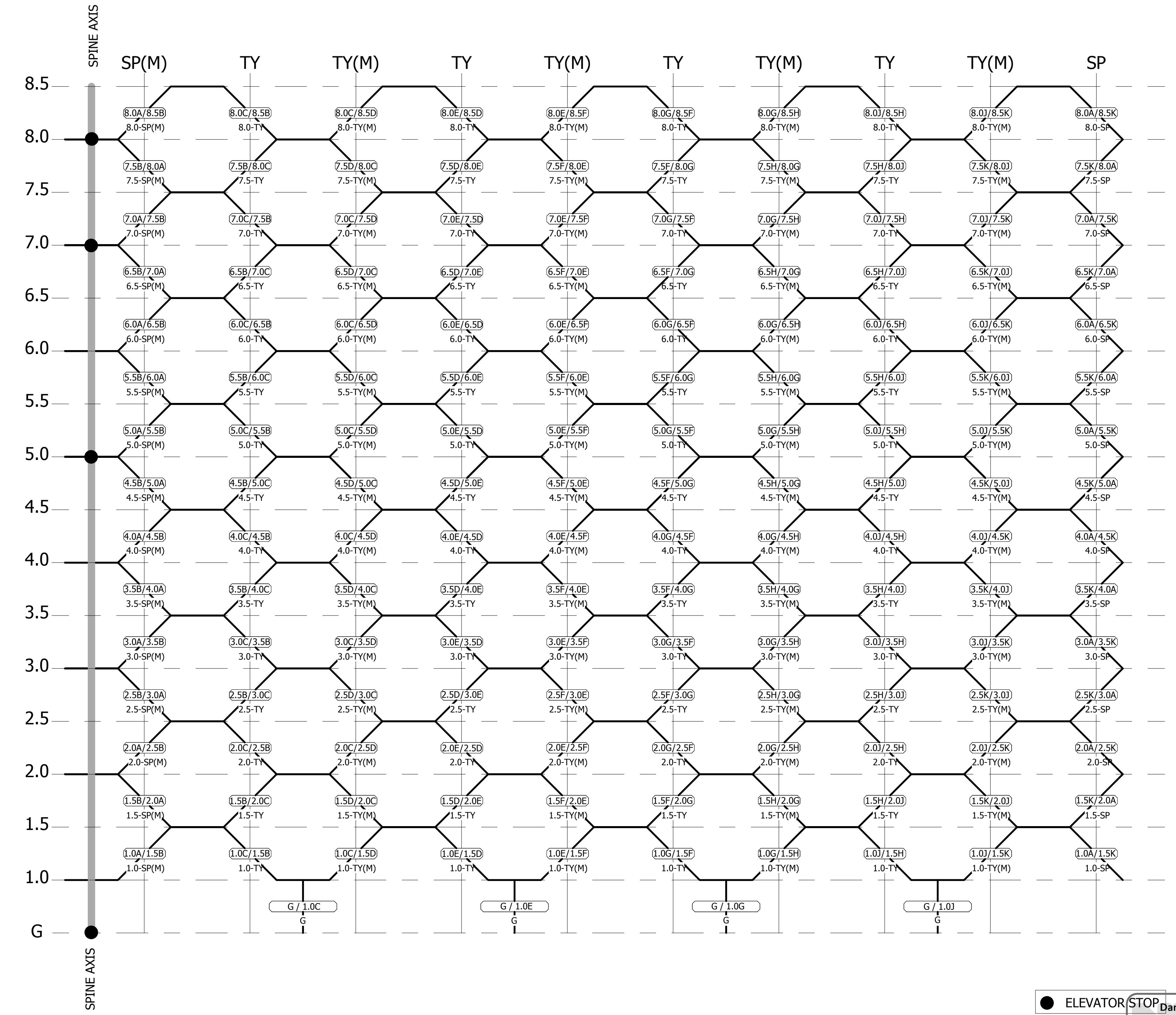


3 STAIR TYPE KEY PLAN

LEVEL / STAIR TYPE	NUMBER OF RISERS	NUMBER OF TREADS	RISER HEIGHT		WIDTH		STAIR OVERALL LENGTH (MEASURED FROM FIRST RISER TO LAST RISER)	
			(mm)	(feet/inches)	(mm)	(width in inches)		
LEVEL G	16	15	178	7"	1464	4'- 9 5/8"	4200	13'- 9 3/8"
LEVEL 1.0	13	12	178	7"	1543	5'- 0 3/4"	3370	11'- 0 11/16"
LEVEL 1.5	9	8	178	7"	1463	4'- 9 5/8"	2351	7'- 8 9/16"
LEVEL 2.0	16	15	178	7"	1525	5'- 0 1/16"	4230	13'- 10 9/16"
LEVEL 2.5	13	12	178	7"	1471	4'- 9 15/16"	3425	11'- 2 13/16"
LEVEL 3.0	17	16	178	7"	1538	5'- 0 9/16"	4524	14'- 10 1/8"
LEVEL 3.5	14	13	178	7"	1456	4'- 9 5/16"	4748	15'- 6 15/16"
LEVEL 4.0	17	16	178	7"	1554	5'- 1 3/16"	4783	15'- 8 5/16"
LEVEL 4.5	15	14	178	7"	1457	4'- 9 3/8"	4854	15'- 11 1/8"
LEVEL 5.0	17	16	178	7"	1571	5'- 1 7/8"	5045	16'- 6 5/8"
LEVEL 5.5	17	16	178	7"	1466	4'- 9 11/16"	4960	16'- 3 1/4"
LEVEL 6.0	17	16	178	7"	1468	4'- 9 13/16"	5264	17'- 3 1/4"
LEVEL 6.5	18	17	178	7"	1469	4'- 9 13/16"	4937	16'- 2 3/8"
LEVEL 7.0	18	17	178	7"	1450	4'- 9 1/16"	5201	17'- 0 3/4"
LEVEL 7.5	18	17	178	7"	1471	4'- 9 15/16"	4847	15'- 10 13/16"
LEVEL 8.0	18	17	178	7"	2443	8'- 0 3/16"	5082	16'- 8 1/16"



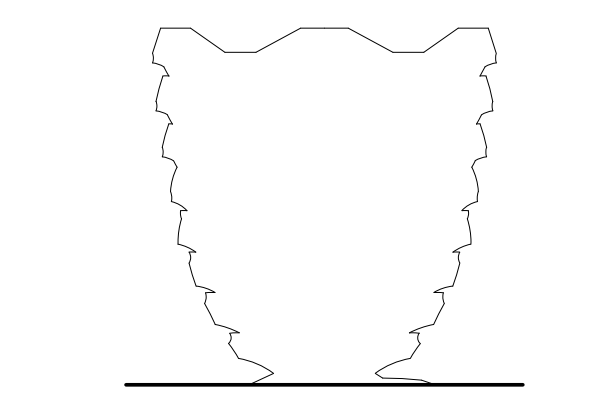
2 STAIR AND PLATFORM NAMING DIAGRAM



1 STAIR TYPES DIAGRAM

HUDSON YARDS
VESSEL

530 WEST 33RD STREET
NEW YORK, NY



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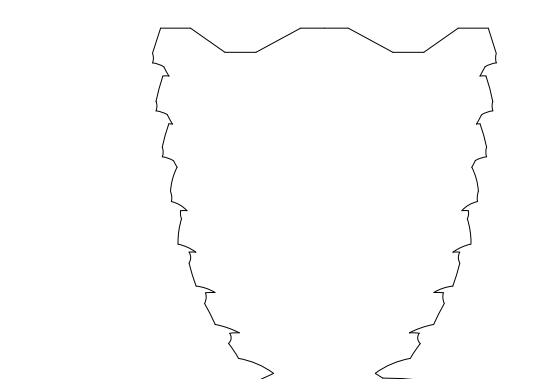
STAIR SCHEDULE

Approved by: [Signature]
Date: 12/27/2015
NYC Development Hub

A-601.00

SHEET 73 OF 86

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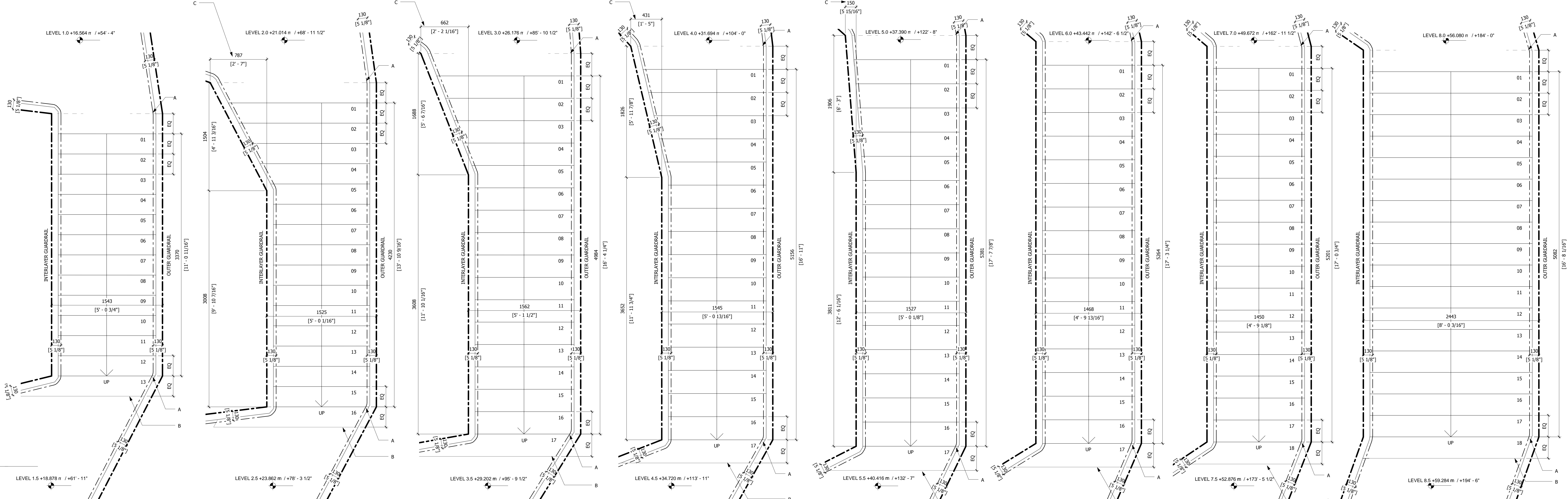
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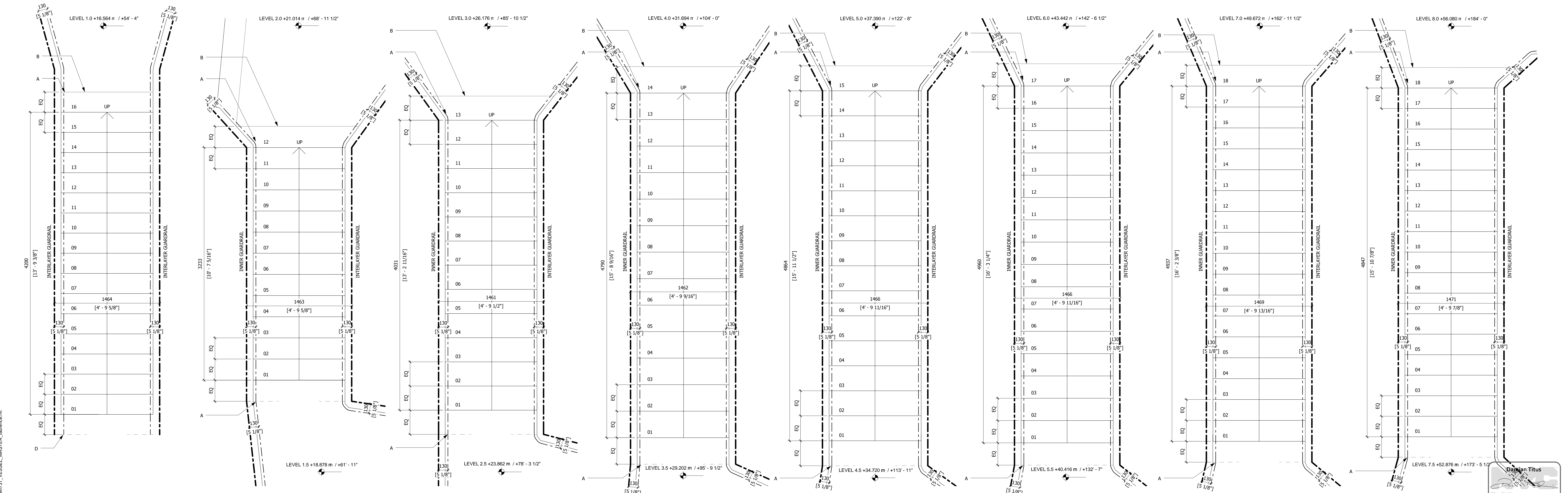
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NOTES:
A: CURVED HANDRAIL CORNER TO MAINTAIN CONSISTENT HANDRAIL PROJECTION INTO STAIR
B: JOINT BETWEEN FALSE TREAD AND PLATFORM PAVING
C: SETTING-OUT DIMENSIONS GIVEN TO CENTRELINE OF GUARDRAIL
D: HANDRAIL EXTENDS MINIMUM ONE TREAD DEPTH BEYOND THE FIRST STEP
E: SPINE
F: STAIR WIDTH DIMENSIONS GIVEN BETWEEN GUARDRAIL CENTRELINES



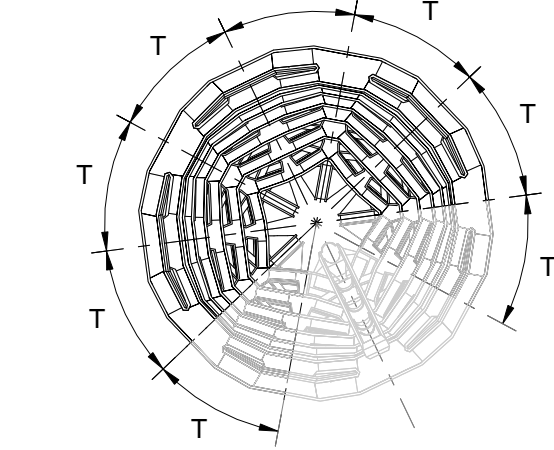
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0 STAIR TYPE LEVEL G 1:20 2 STAIR TYPE 1.5-TY 1:20 4 STAIR TYPE 2.5-TY 1:20 6 STAIR TYPE 3.5-TY 1:20 8 STAIR TYPE 4.5-TY 1:20 10 STAIR TYPE 5.5-TY 1:20 12 STAIR TYPE 6.5-TY 1:20 14 STAIR TYPE 7.5-TY 1:20

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STAIR SCHEDULE -
TYPICAL STAIR PLANS

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A-602.00

SHEET 74 OF 86

STAIR SCHEDULE - TYPICAL STAIR PLANS
HUDSON YARDS VESSEL MASTER LAYOUT

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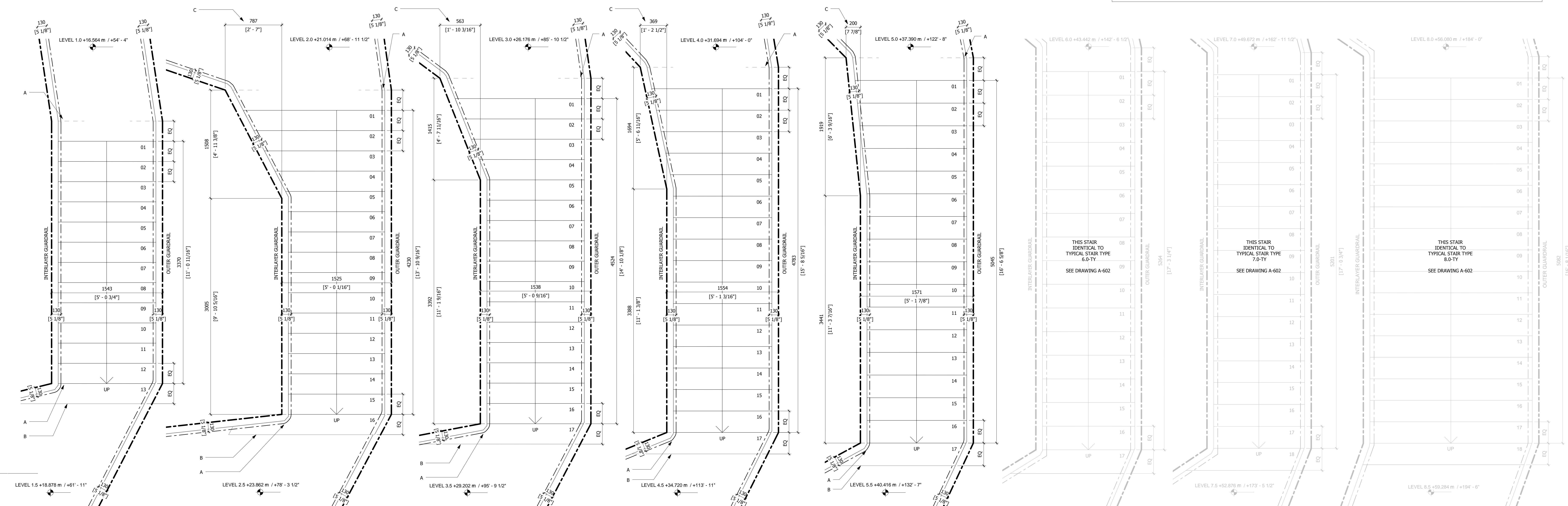
Design Architect
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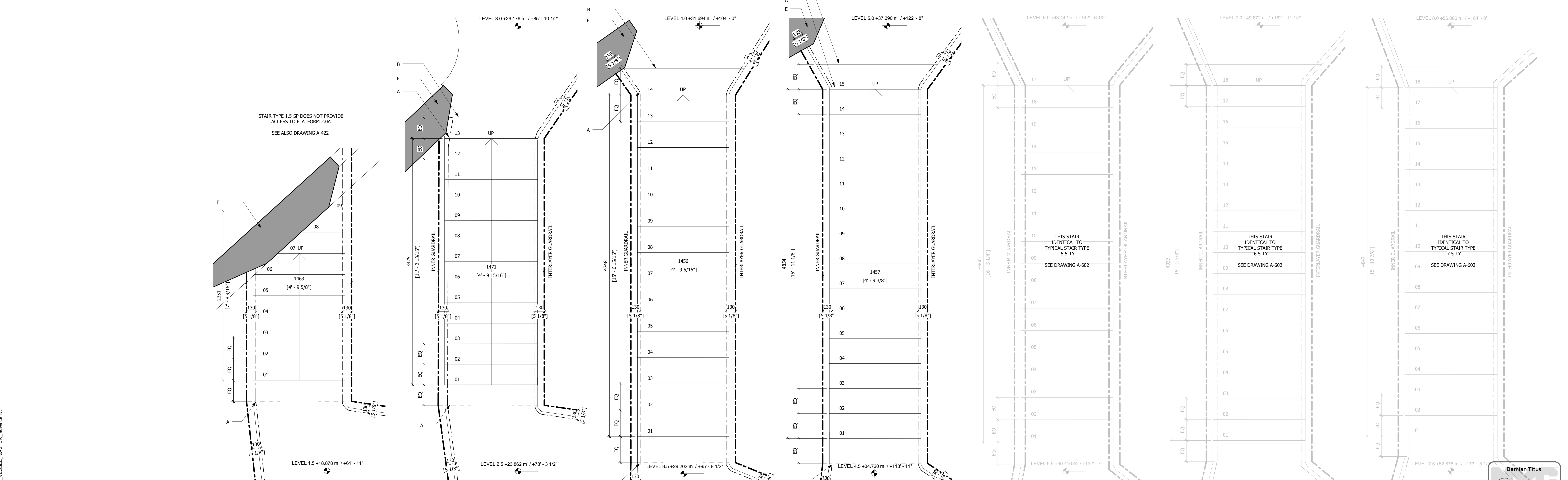
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- NOTES:**
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 - B: JOINT BETWEEN FALSE TREAD AND PLATFORM PAVING
 - C: SETTING-OUT DIMENSIONS GIVEN TO CENTRELINE OF GUARDRAIL
 - D: HANDRAIL EXTENDS MINIMUM ONE TREAD DEPTH BEYOND THE FIRST STEP
 - E: STAIR WIDTH DIMENSIONS GIVEN BETWEEN GUARDRAIL CENTRELINES



1 STAIR TYPE 1.0-SP 1: 20 3 STAIR TYPE 2.0-SP 1: 20 5 STAIR TYPE 3.0-SP 1: 20 7 STAIR TYPE 4.0-SP 1: 20 9 STAIR TYPE 5.0-SP 1: 20 11 STAIR TYPE 6.0-SP 1: 20 13 STAIR TYPE 7.0-SP 1: 20 15 STAIR TYPE 8.0-SP 1: 20



2 STAIR TYPE 1.5-SP 1: 20 4 STAIR TYPE 2.5-SP 1: 20 6 STAIR TYPE 3.5-SP 1: 20 8 STAIR TYPE 4.5-SP 1: 20 10 STAIR TYPE 5.5-SP 1: 20 12 STAIR TYPE 6.5-SP 1: 20 14 STAIR TYPE 7.5-SP 1: 20

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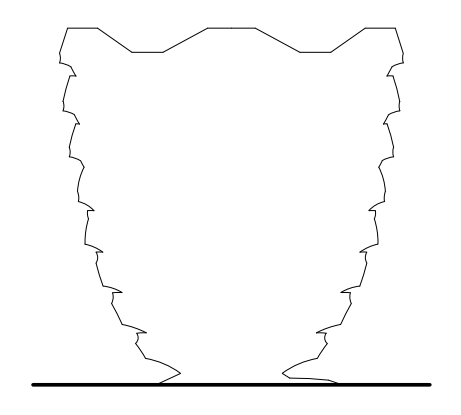
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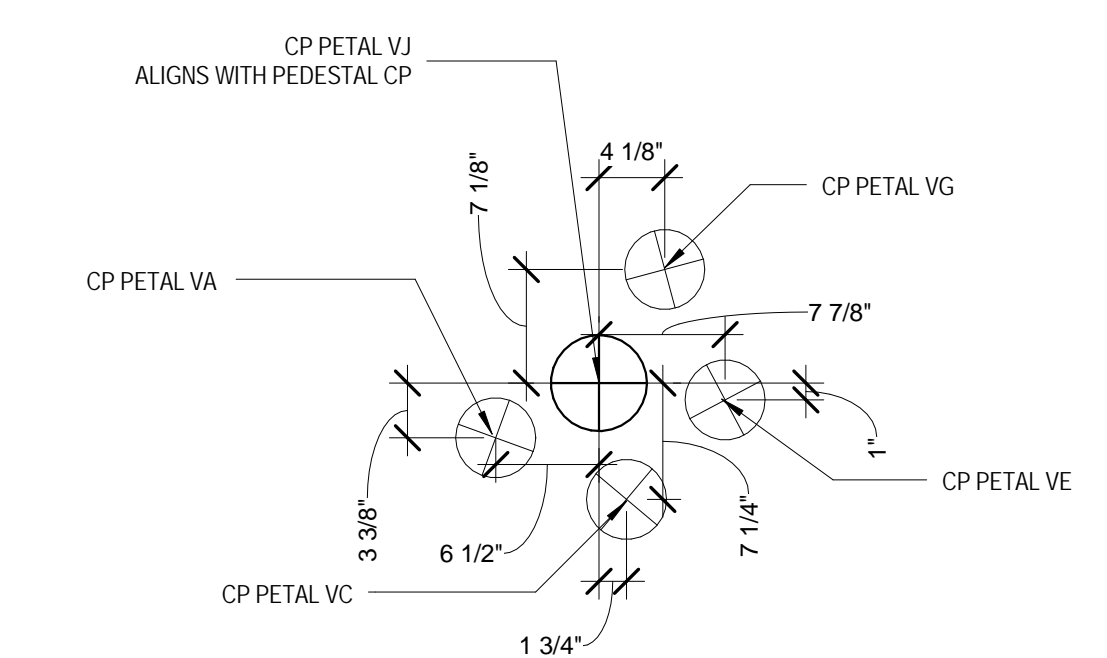
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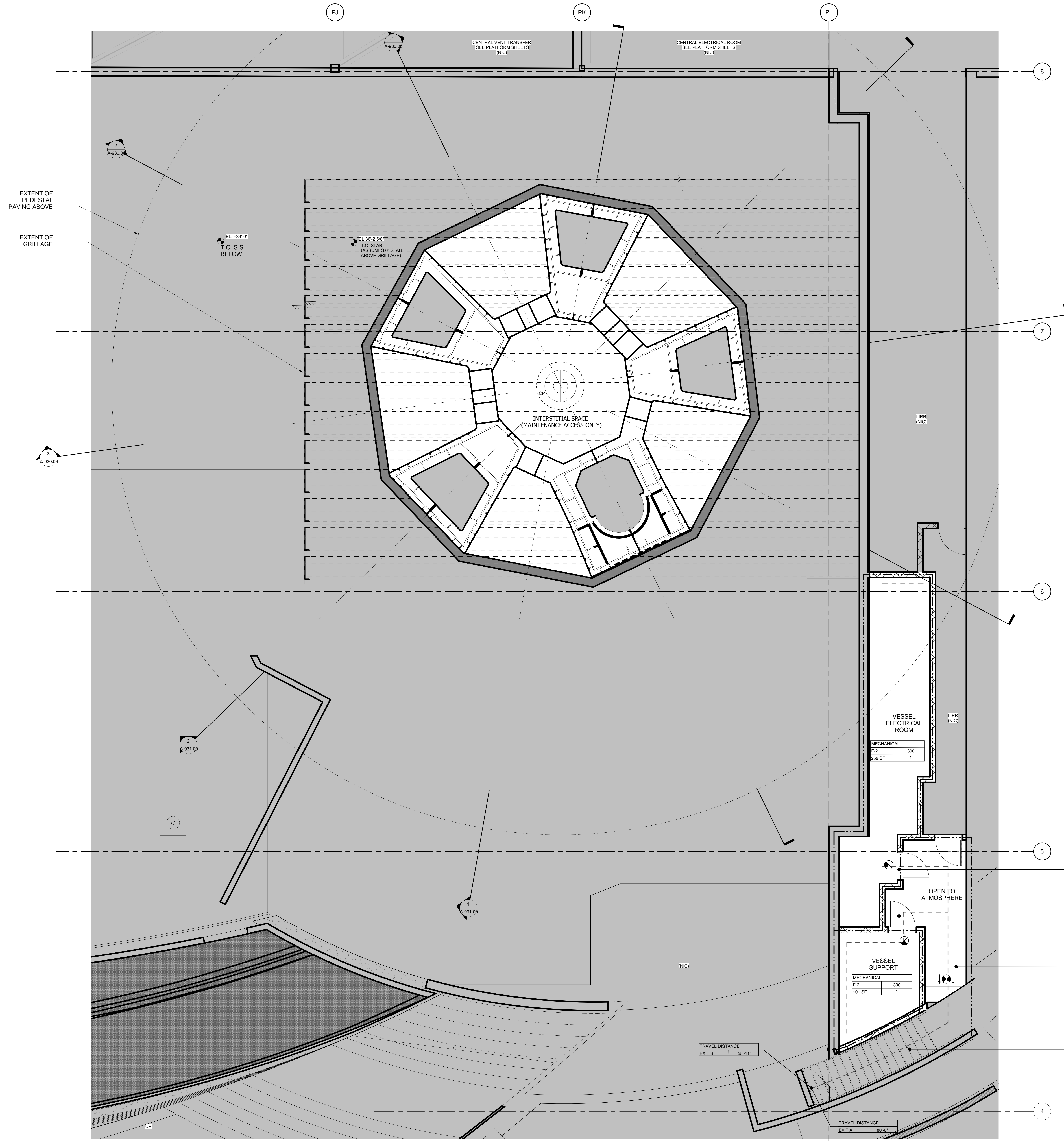
Design Architect
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2 ENLARGED PLAN AT VESSEL CENTER POINT
 SCALE: 1" = 1'-0"



EXIT A

	WIDTH	CAPACITY
STAIR	--	--
DOOR	34"	170

EXIT B

	WIDTH	CAPACITY
STAIR	--	--
DOOR	34"	170

CIRCULATION

F-2	300
121 SF	1

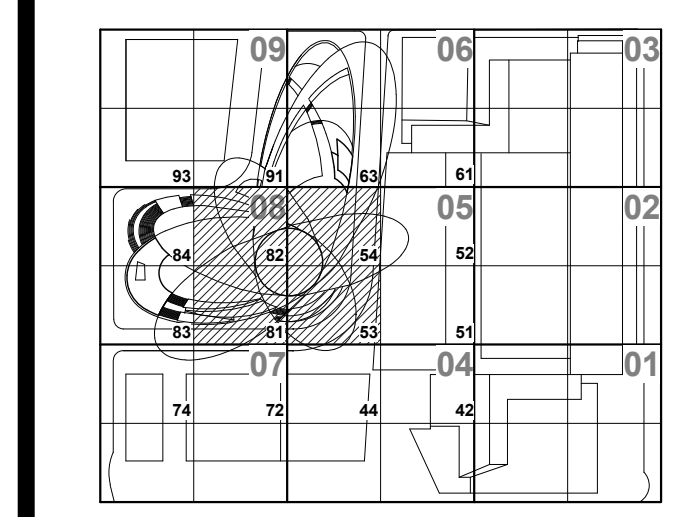
STAIR

	WIDTH	CAPACITY
STAIR	58"	193
DOOR	--	--

1 VESSEL SUB-SURFACE LEVEL PLAN
 SCALE: 1/4" = 1'-0"

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Rev. Plan

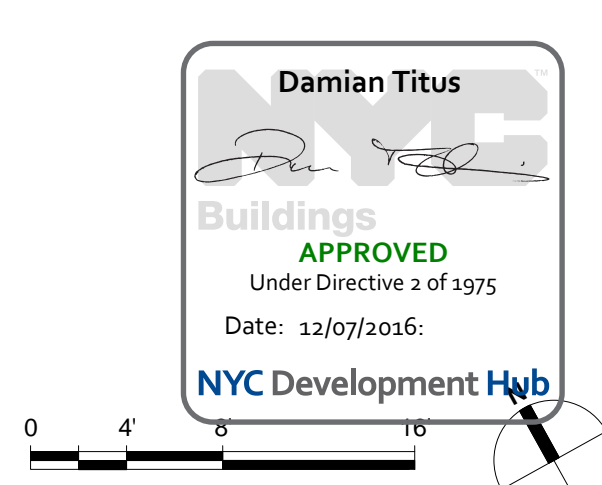


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VESEL SUB SURFACE
 LEVEL

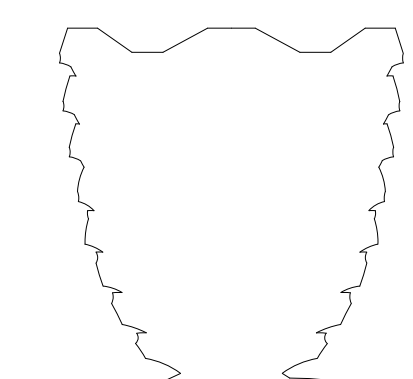
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HUDSON YARDS
VESSEL

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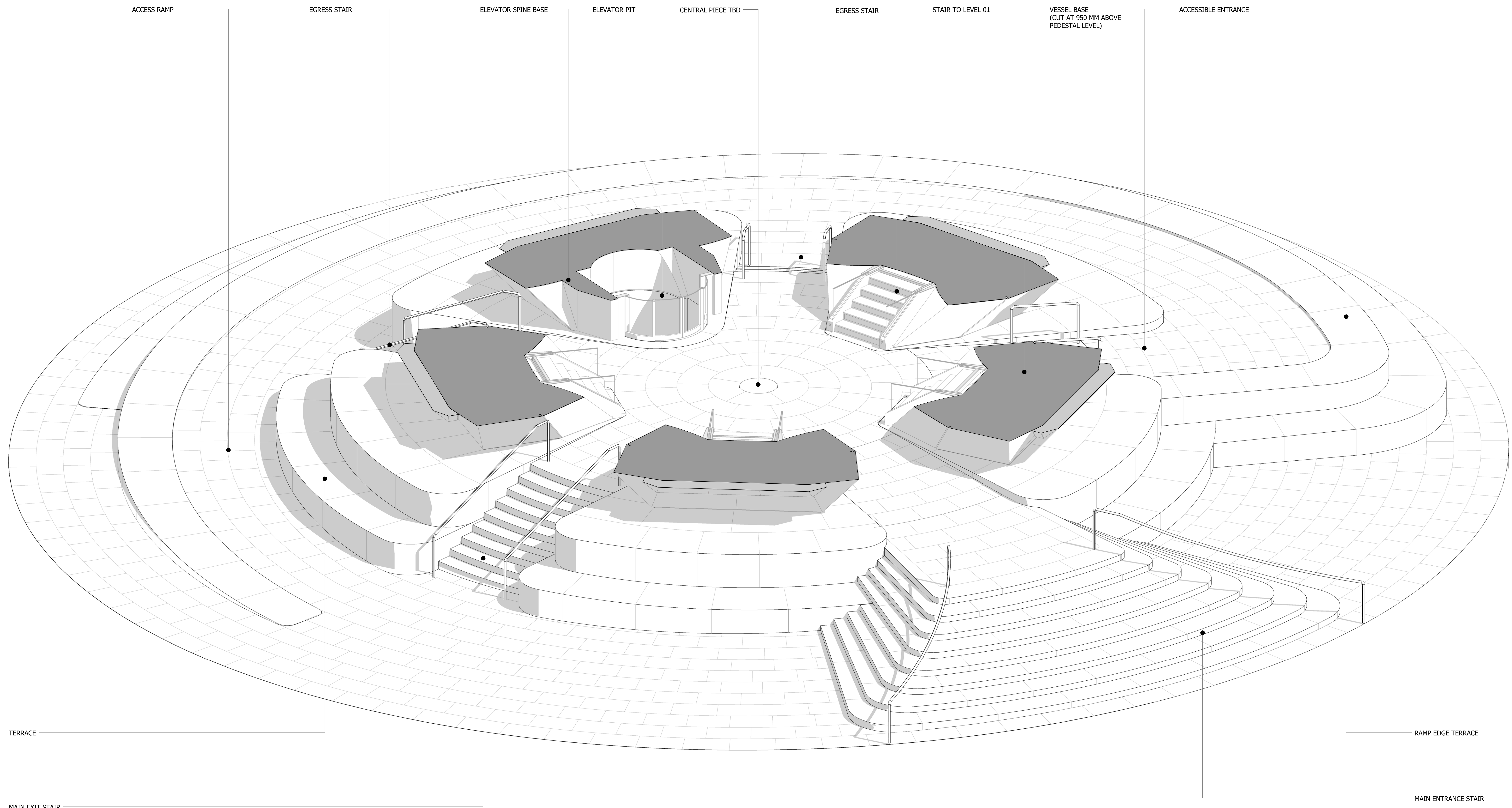
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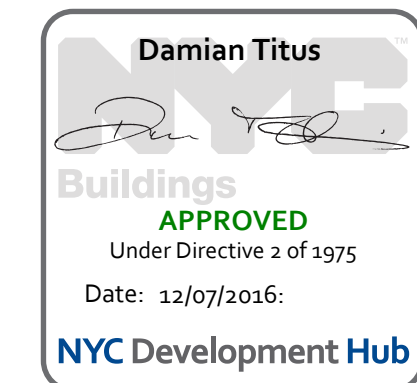
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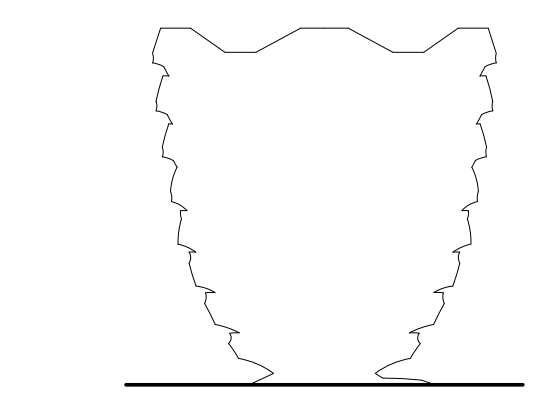
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PEDESTAL 3D DIAGRAM

Sheet Number
A-910.00





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Architects & Planning Consultants
11 West 42nd Street
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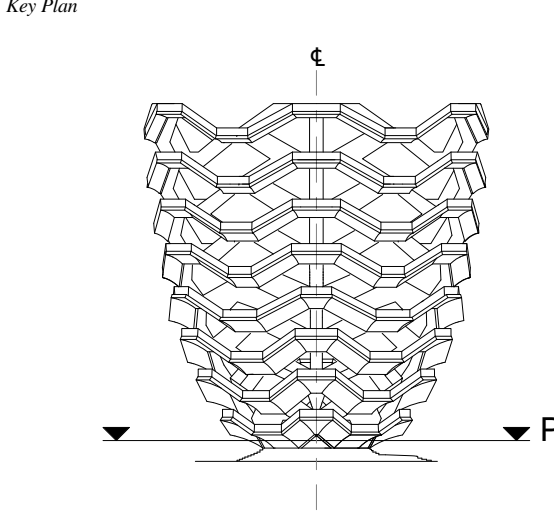
Design Architect
Heatherwick Studio
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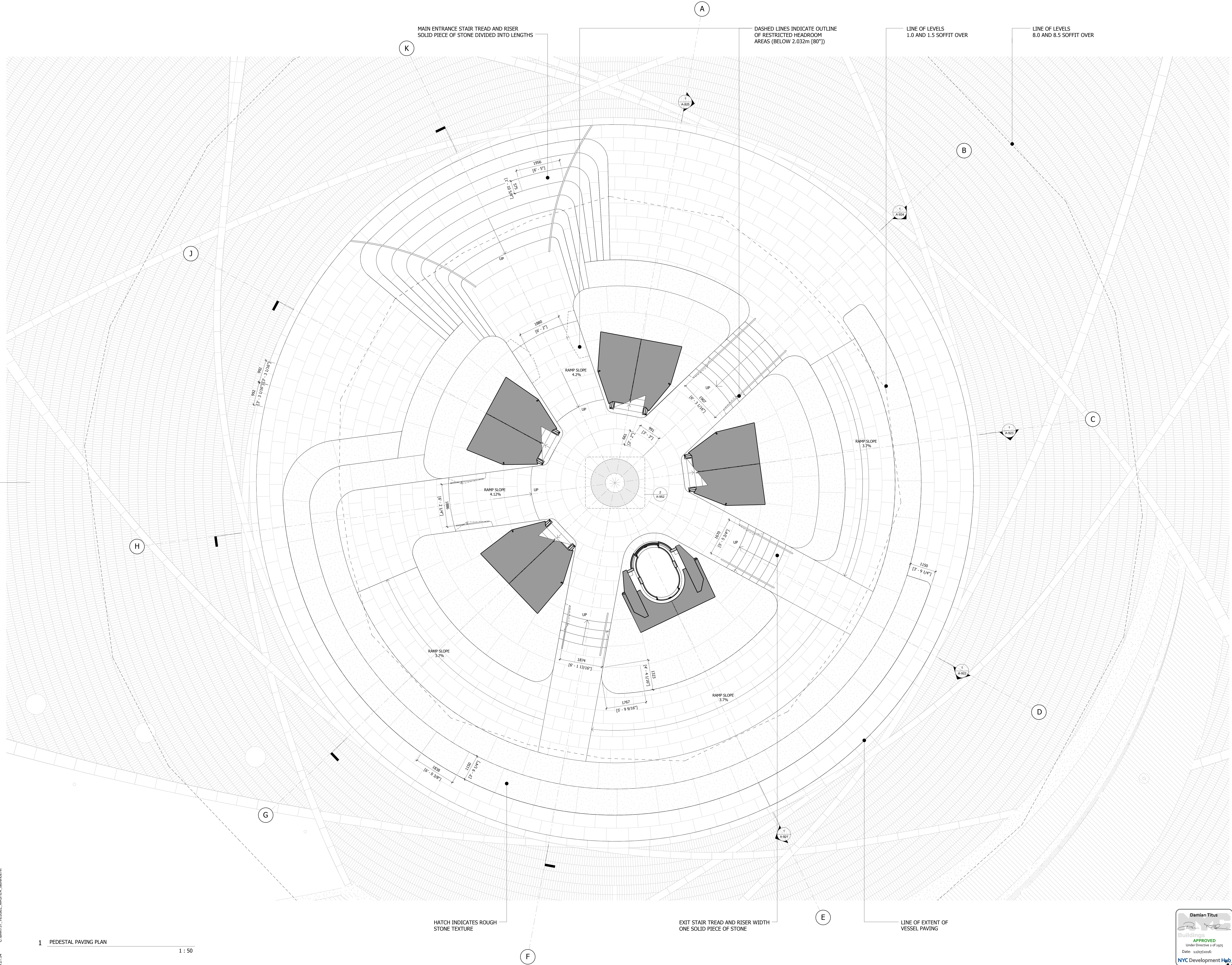


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HYE-VS-A-911

PEDESTAL PAVING
PLAN

Sheet Number
A-911.00



MAIN ENTRANCE STAIR TREAD AND RISER
SOLID PIECE OF STONE DIVIDED INTO LENGTHS

DASHED LINES INDICATE OUTLINE
OF RESTRICTED HEADROOM
AREAS (BELOW 2.032m [8'0"])

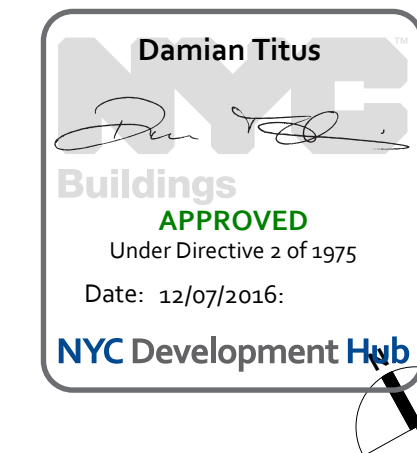
LINE OF LEVELS
1.0 AND 1.5 SOFFIT OVER

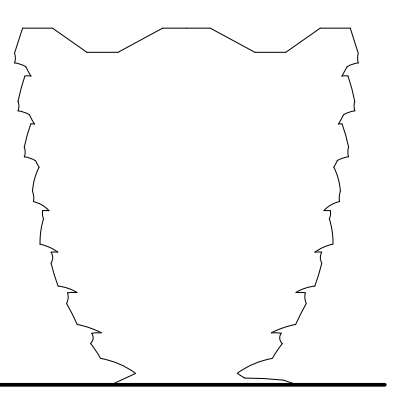
LINE OF LEVELS
8.0 AND 8.5 SOFFIT OVER

HATCH INDICATES ROUGH
STONE TEXTURE

EXIT STAIR TREAD AND RISER WIDTH
ONE SOLID PIECE OF STONE

LINE OF EXTENT OF
VESSEL PAVING





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 New York, NY 10022
 Tel: 212.708.6800

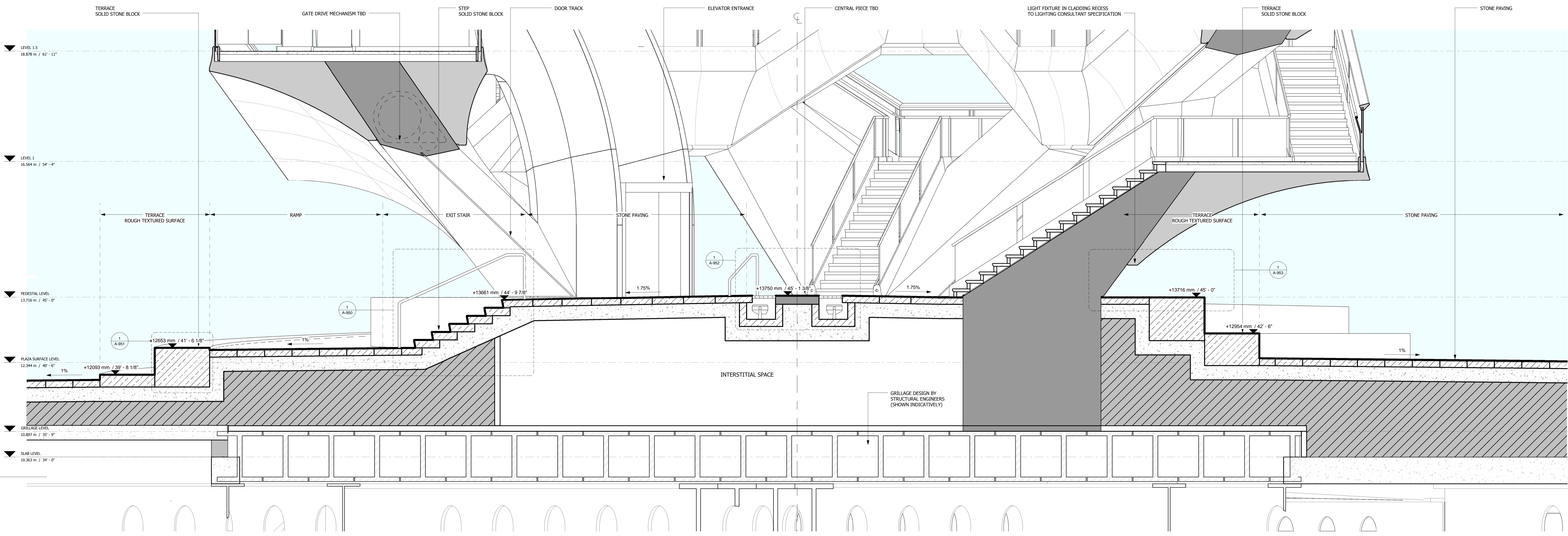
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10018
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

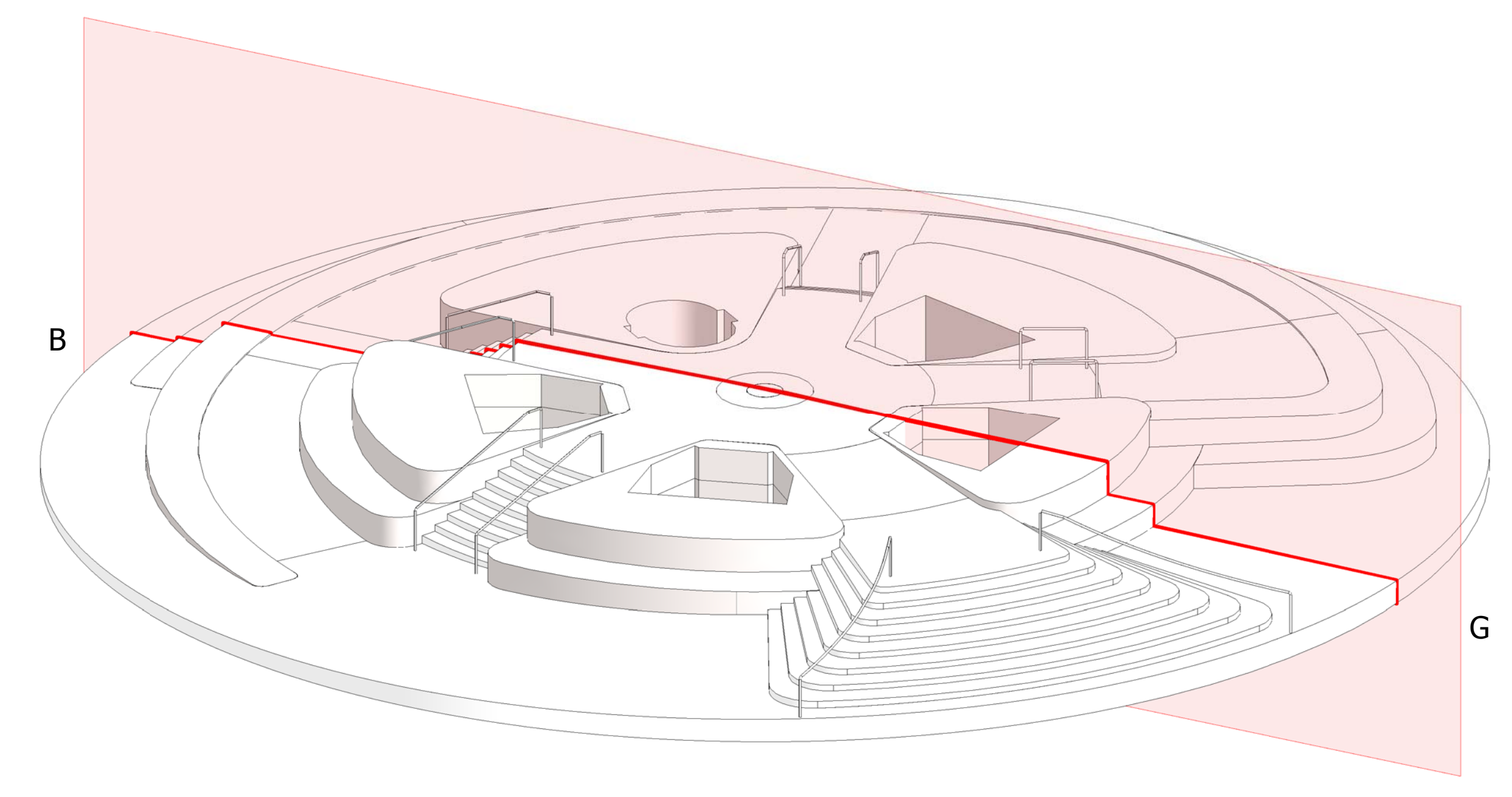
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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REPRODUCE**



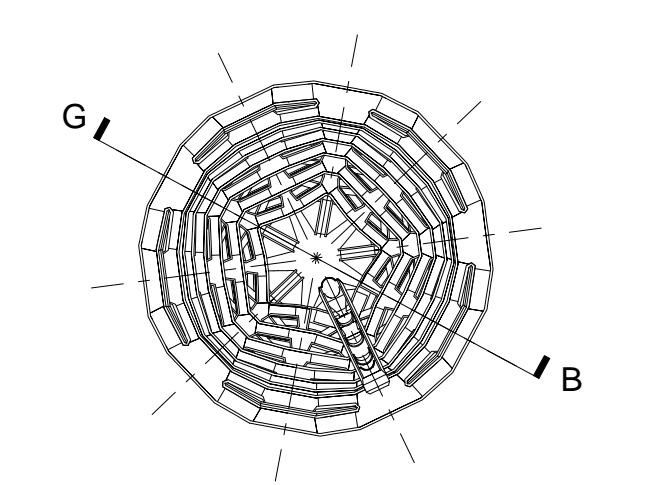
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2 KEY DIAGRAM

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 No. Inset Date

Key Plan

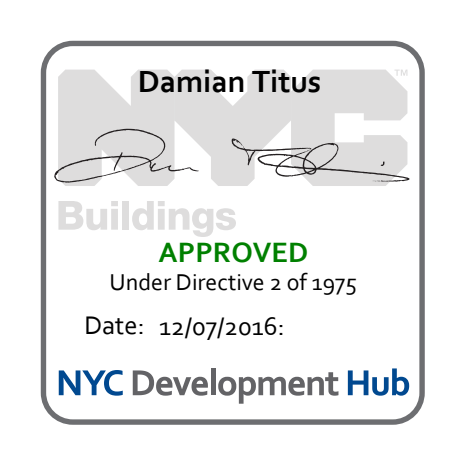


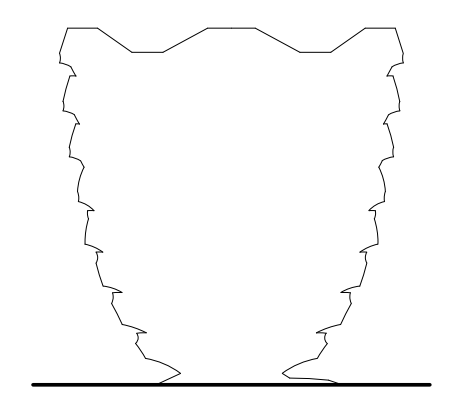
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 Project No: 2208002
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 Sheet Number: [Signature]

HYE-VS-A-922

PEDESTAL SECTION B-G

Sheet Number
A-922.00





Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.966.7514 Fax: 212.966.7510

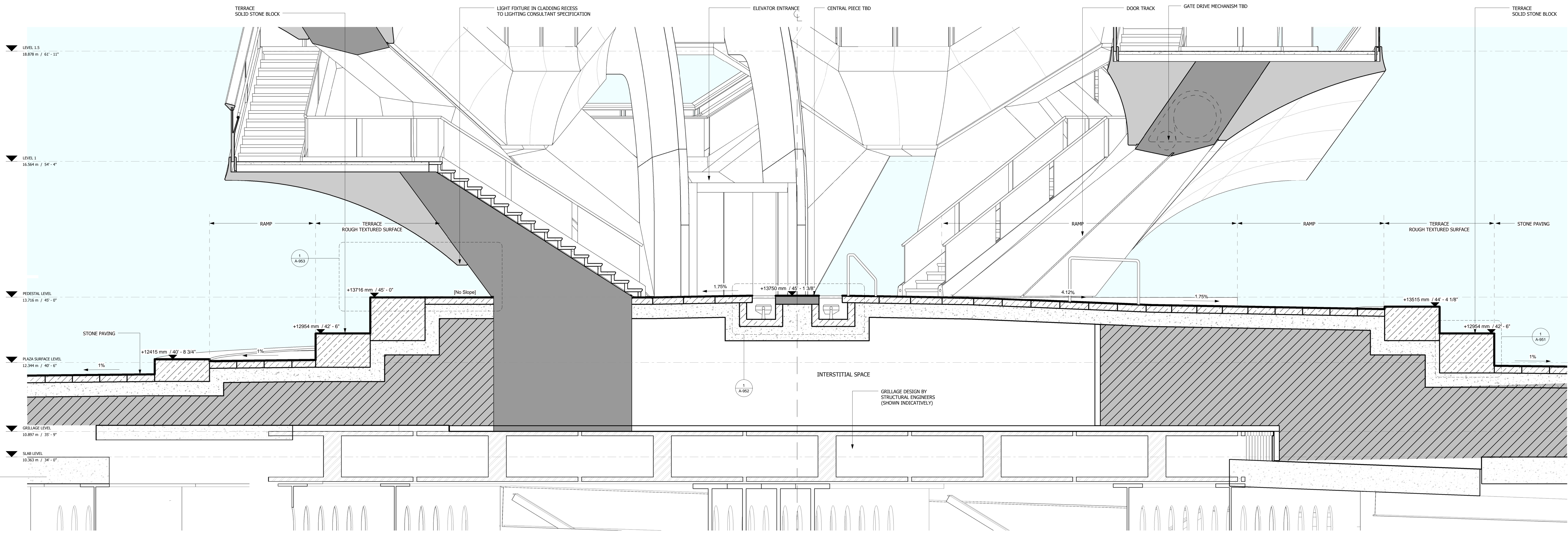
Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
Tel: 212.977.6500 Fax: 212.956.2526

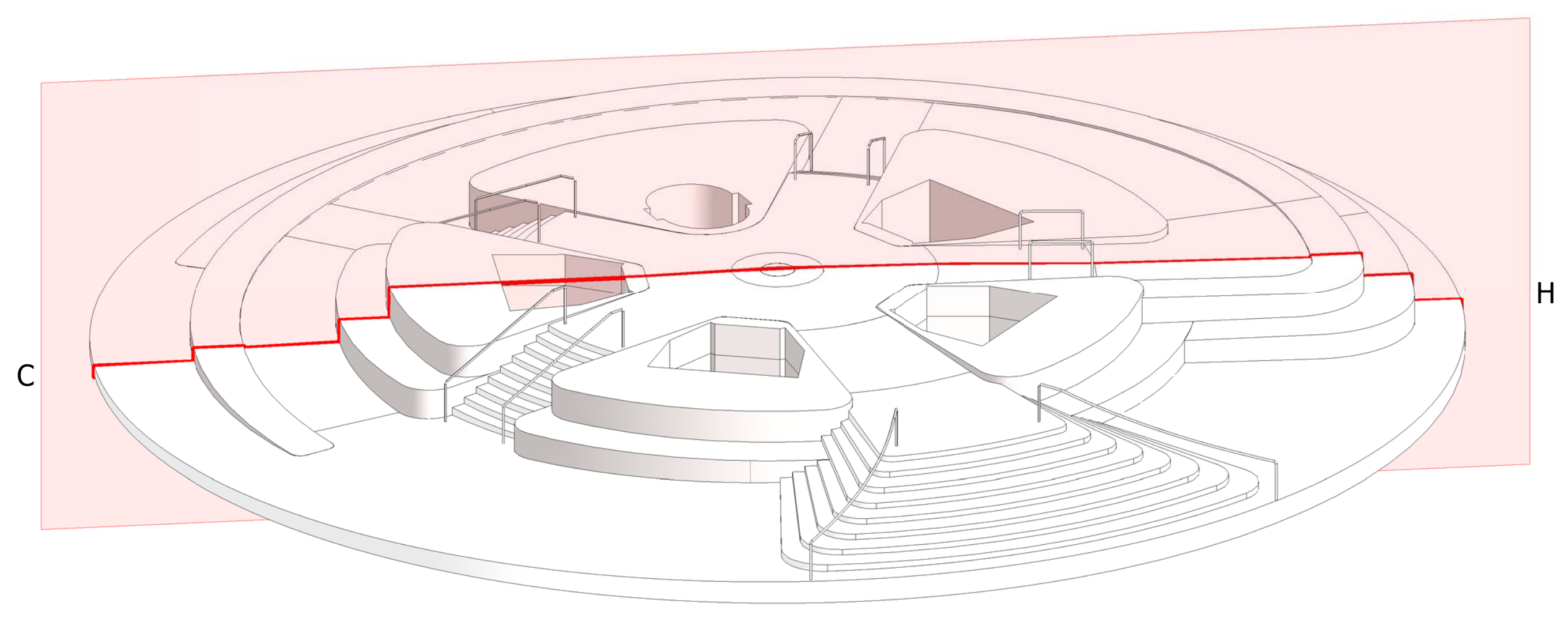
Design Architect
Heatherwick Studio
356-364 Grays Inn Road
London WC1X 8BH
United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10017
Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 West Street
New York, NY 10005
Tel: 212.896.3000



1 PEDESTAL SECTION C-H
1 : 30

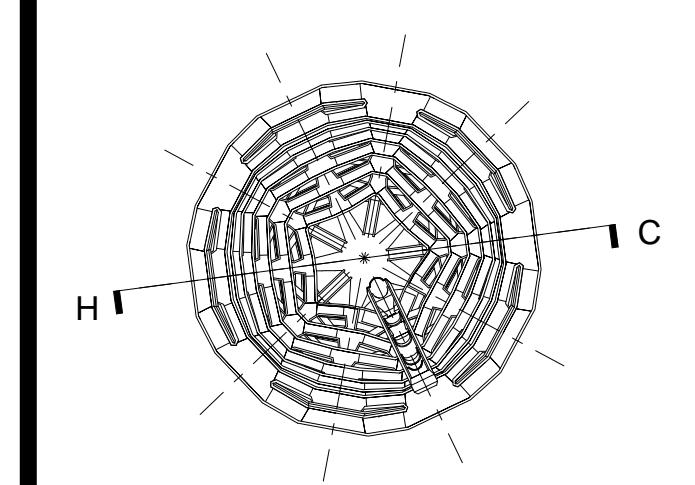


2 KEY DIAGRAM

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No. _____ Date _____

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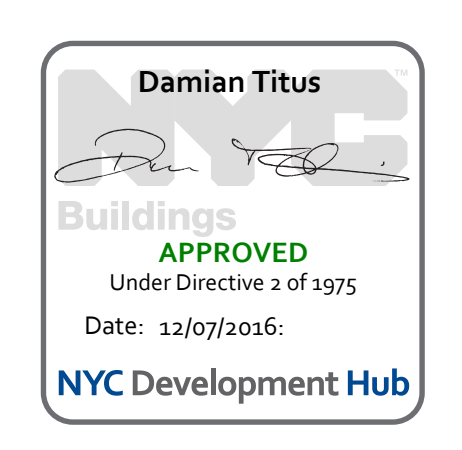


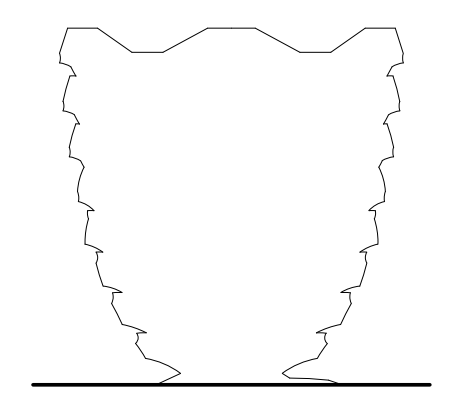
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HYE-VS-A-923

PEDESTAL SECTION C-H

Sheet Number
A-923.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

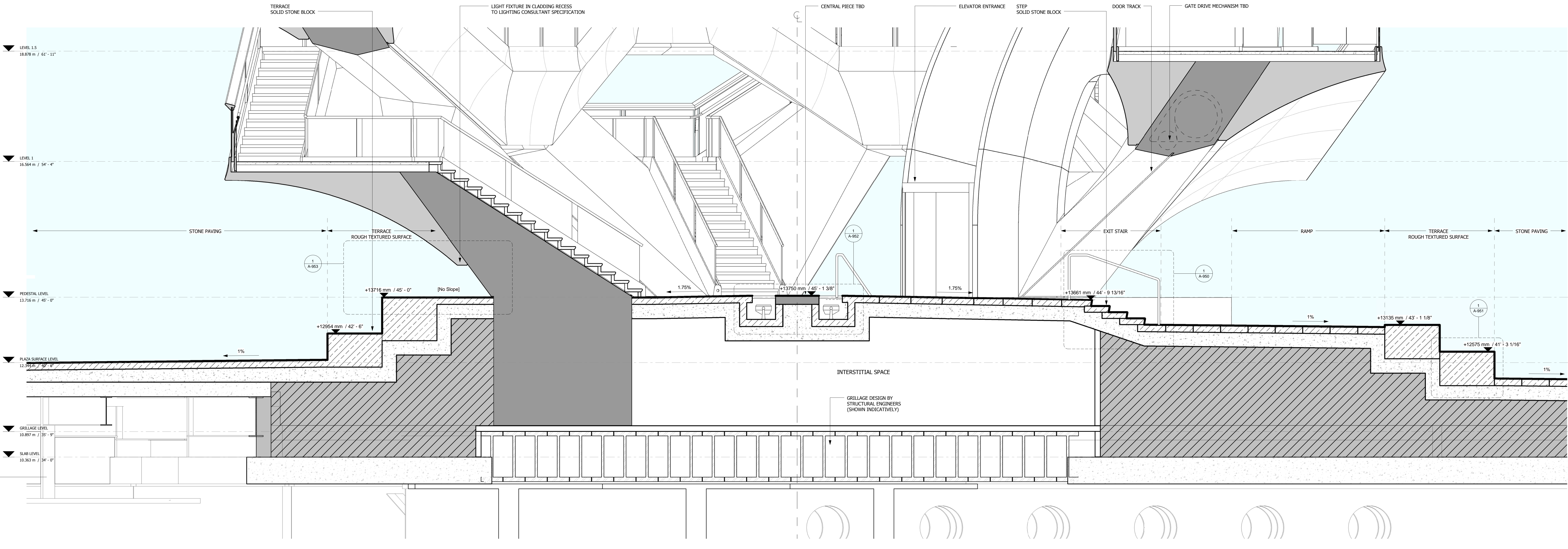
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

**Civil, Mechanical, Electrical, Plumbing,
 Fire Alarm, Fire Protection, Security**
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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LEVEL 1.5
 18.878 m / 61'-11"

LEVEL 1
 18.564 m / 60'-9"

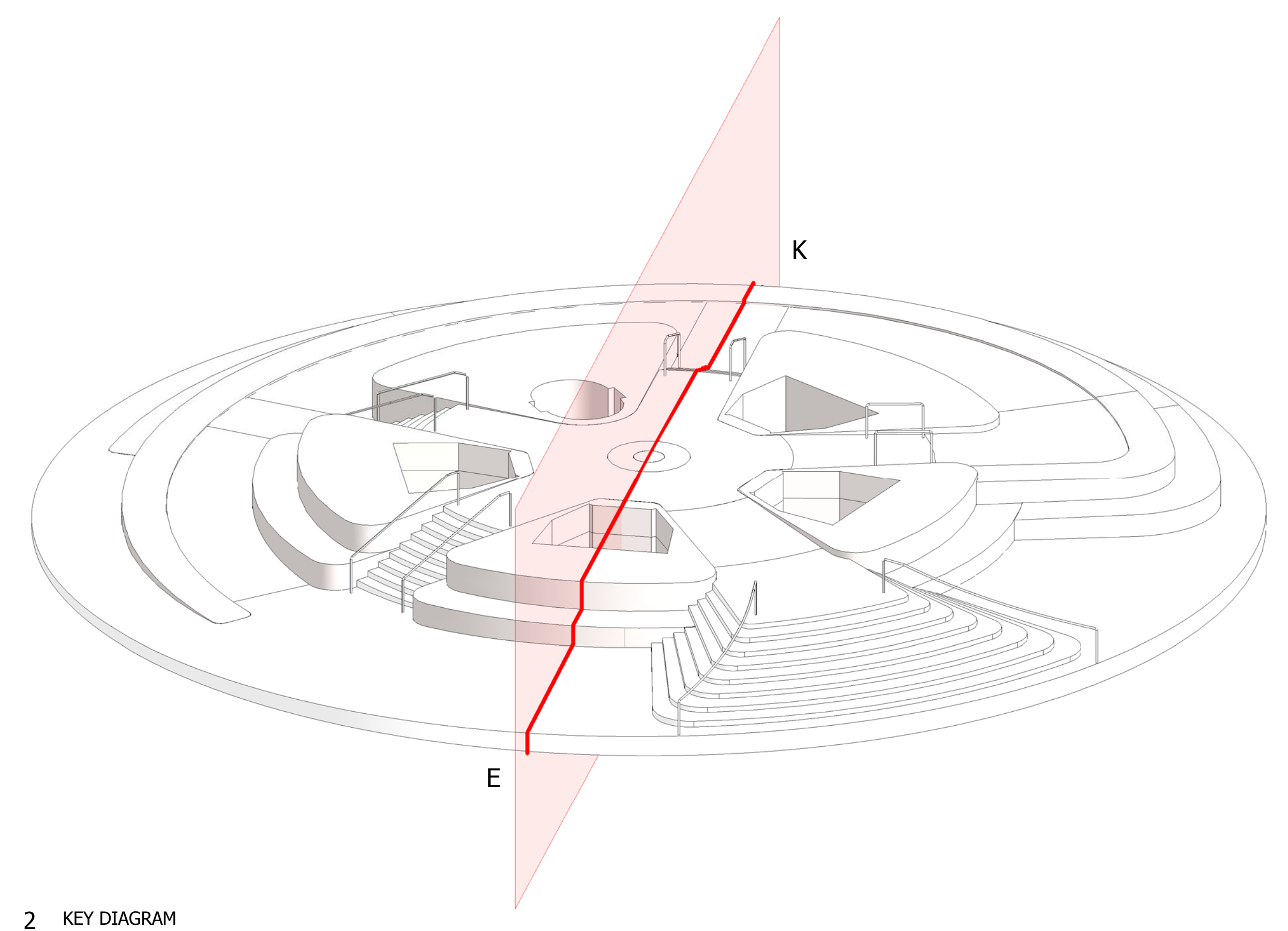
PIEDestal LEVEL
 13.756 m / 45'-0"

PLAZA SURFACE LEVEL
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GRILLAGE LEVEL
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SLAB LEVEL
 10.363 m / 34'-0"

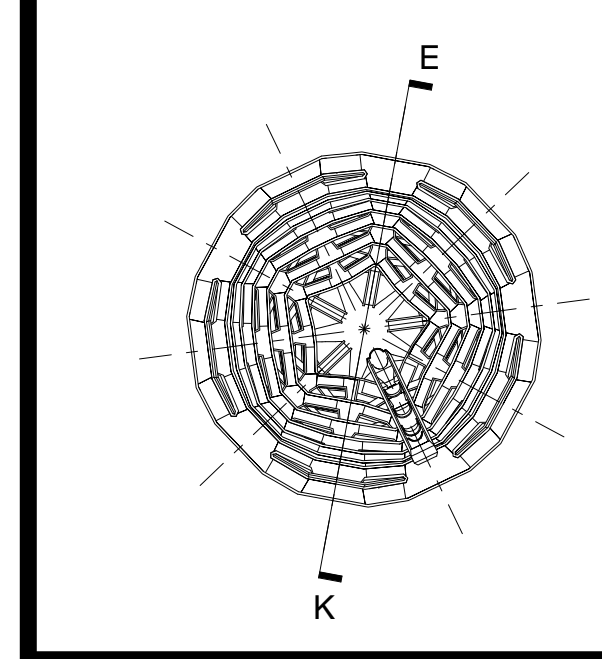
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2 KEY DIAGRAM

D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Issue Date

Key Plan

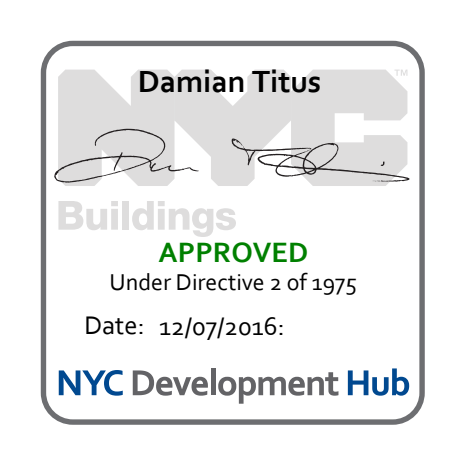


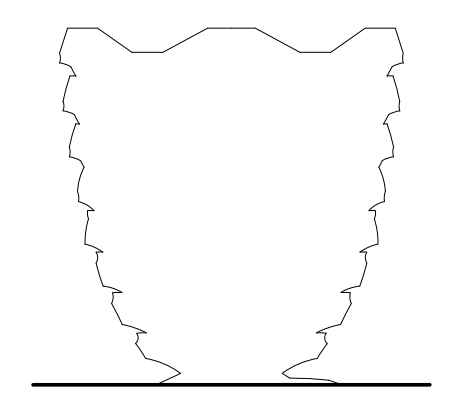
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 Drawn By: [Signature]
 Sheet Number: [Signature]

HYE-VS-A-925

PEDESTAL SECTION E-K

Sheet Number
A-925.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.966.7514 Fax: 212.966.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

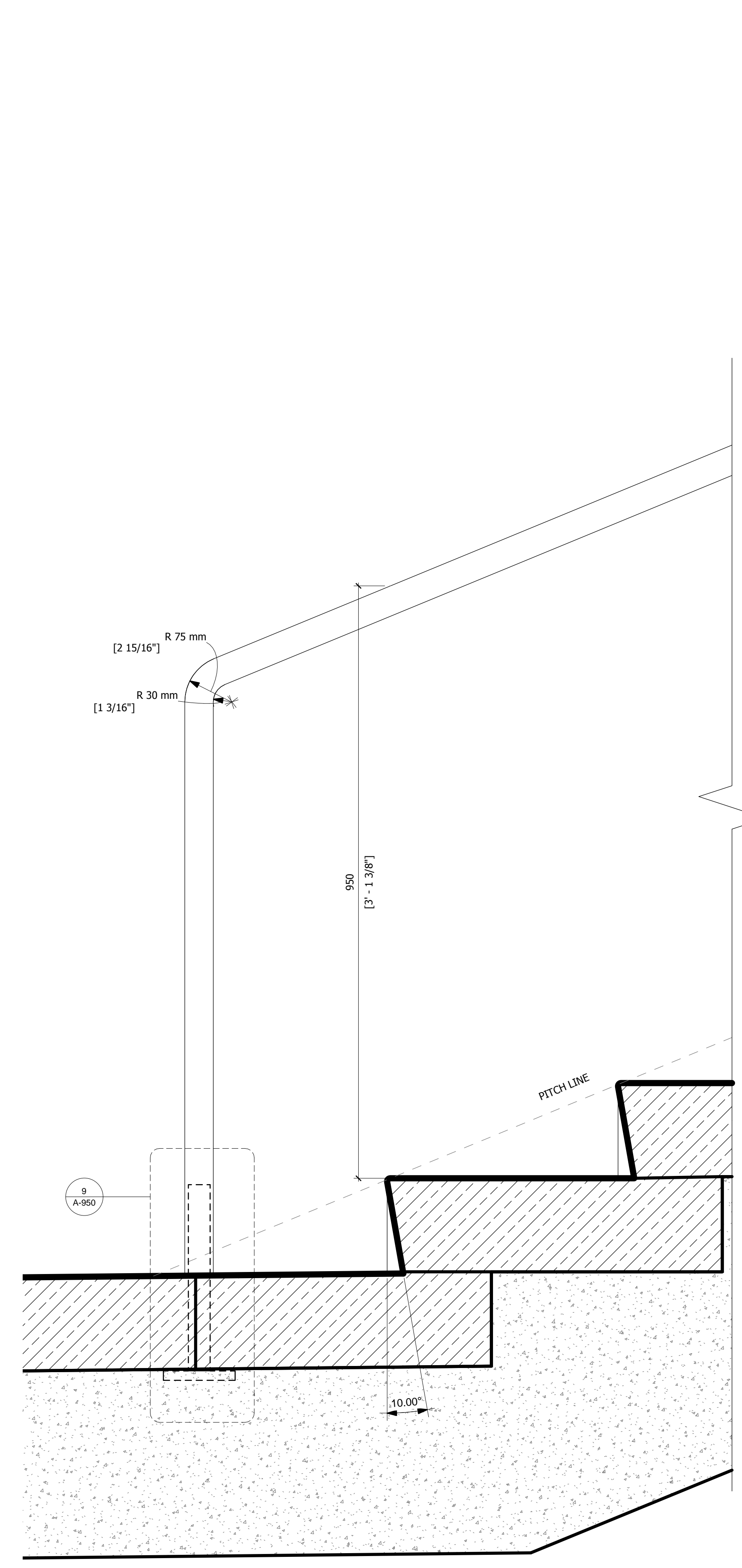
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
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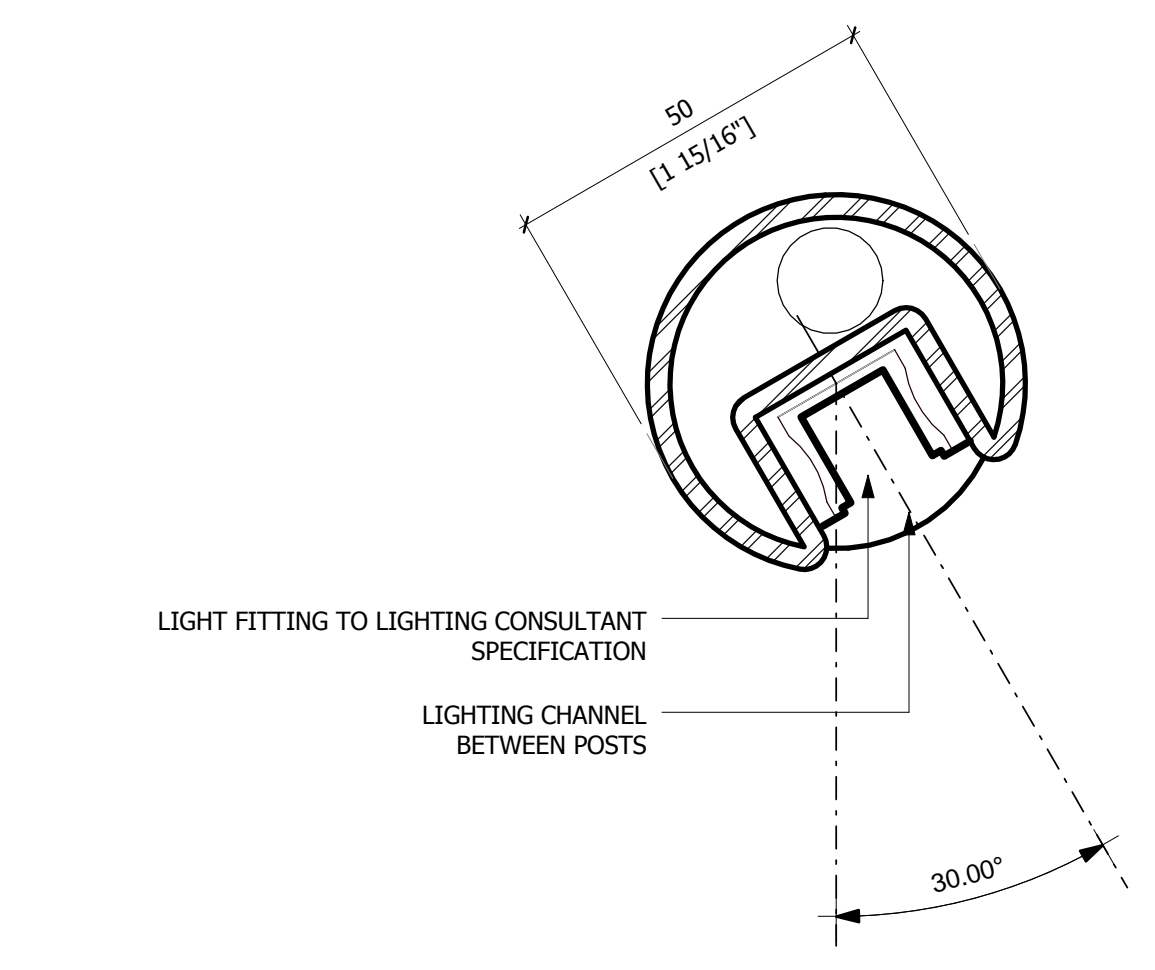
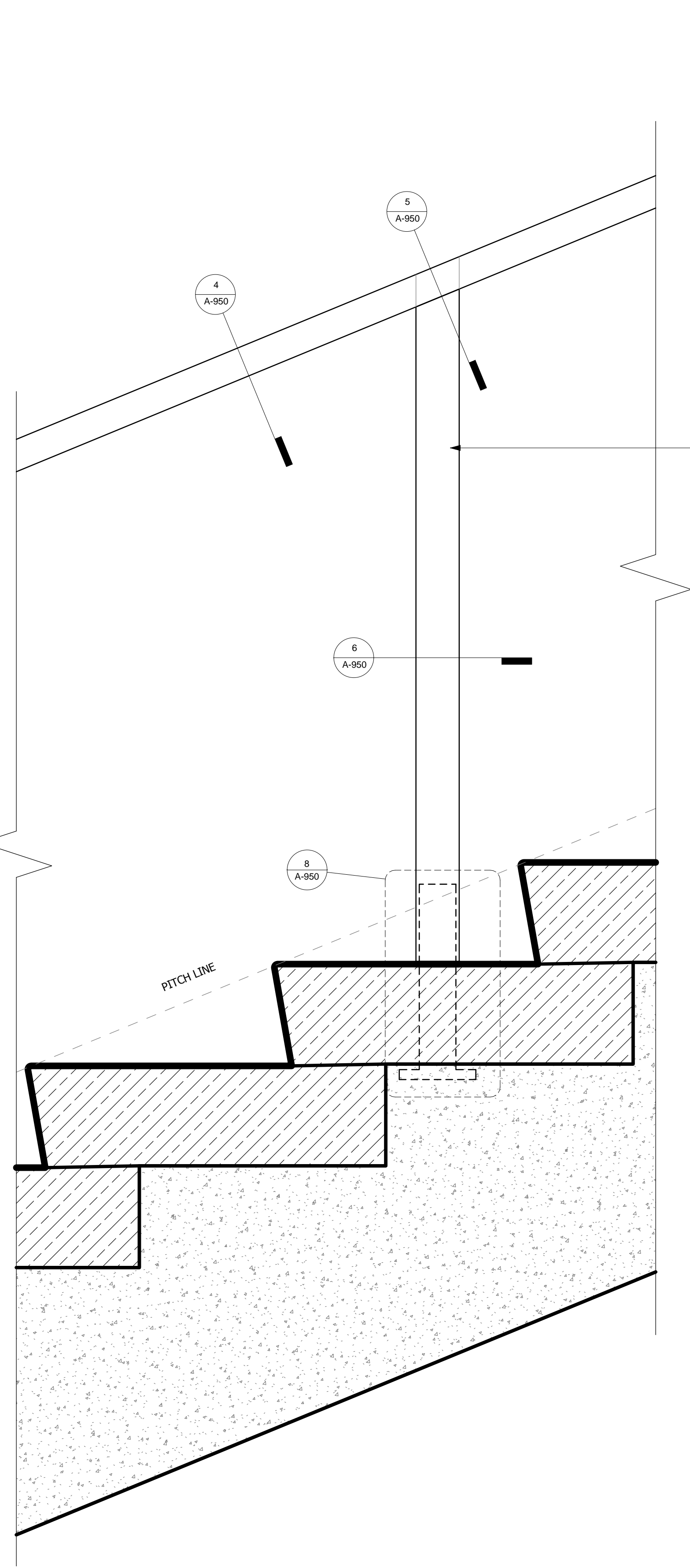
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

Civil, Mechanical, Electrical, Plumbing
 Fire Alarm, Fire Protection, Security
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

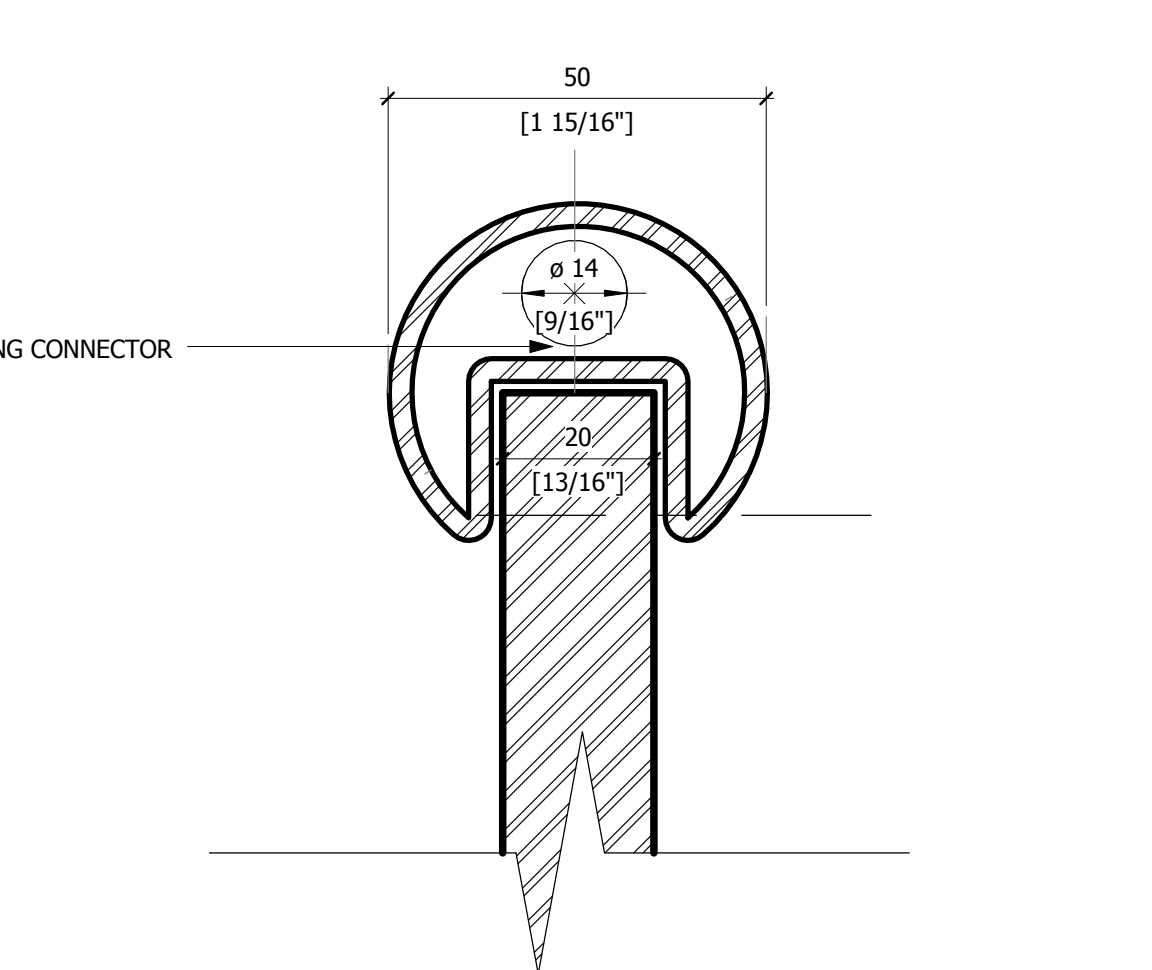
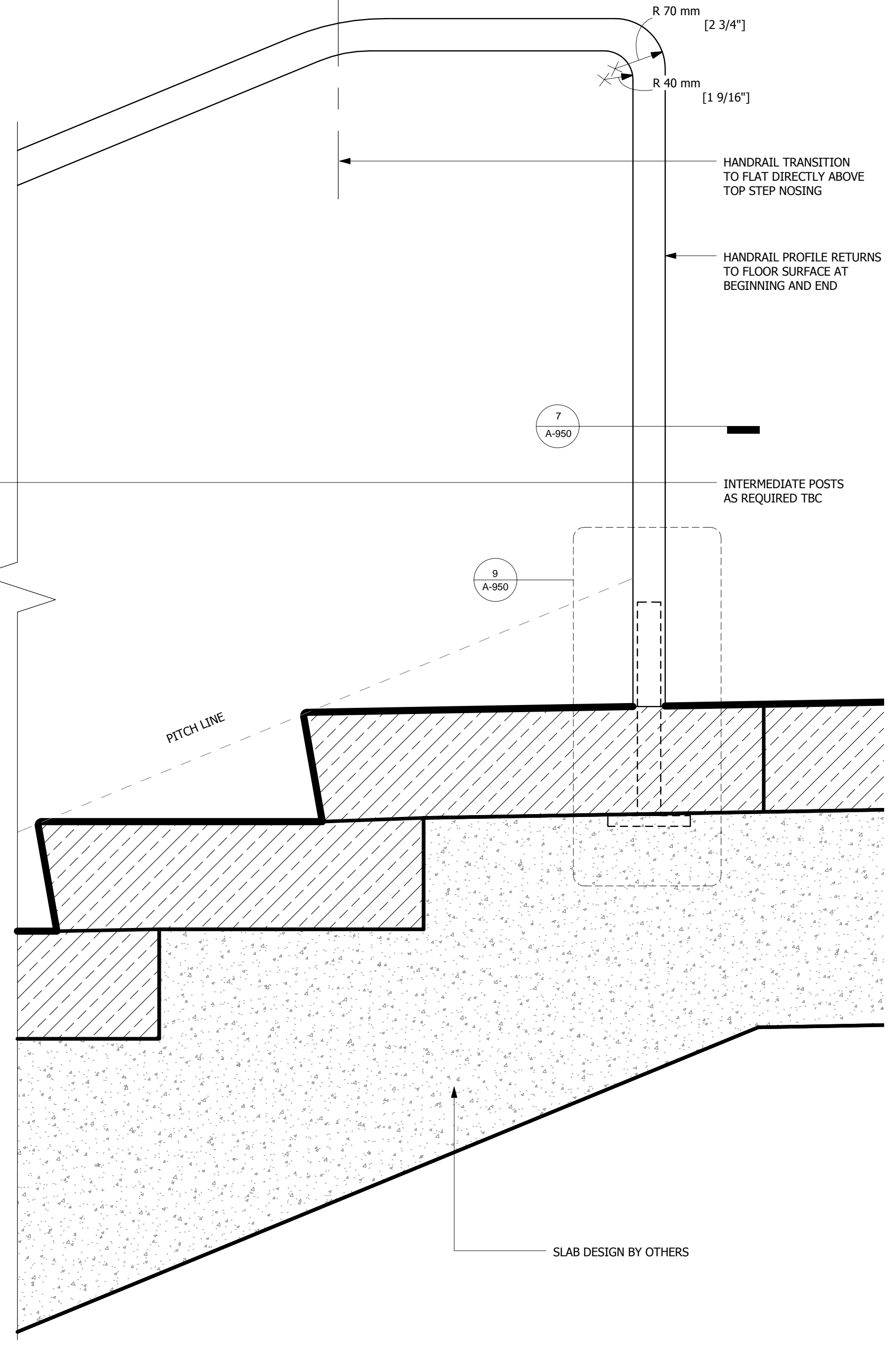
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REPRODUCE



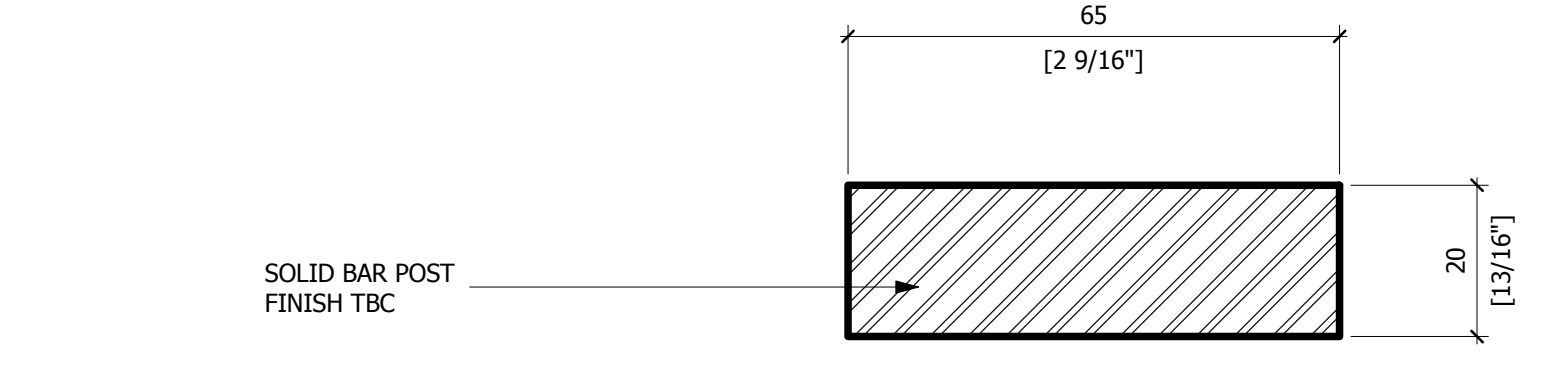
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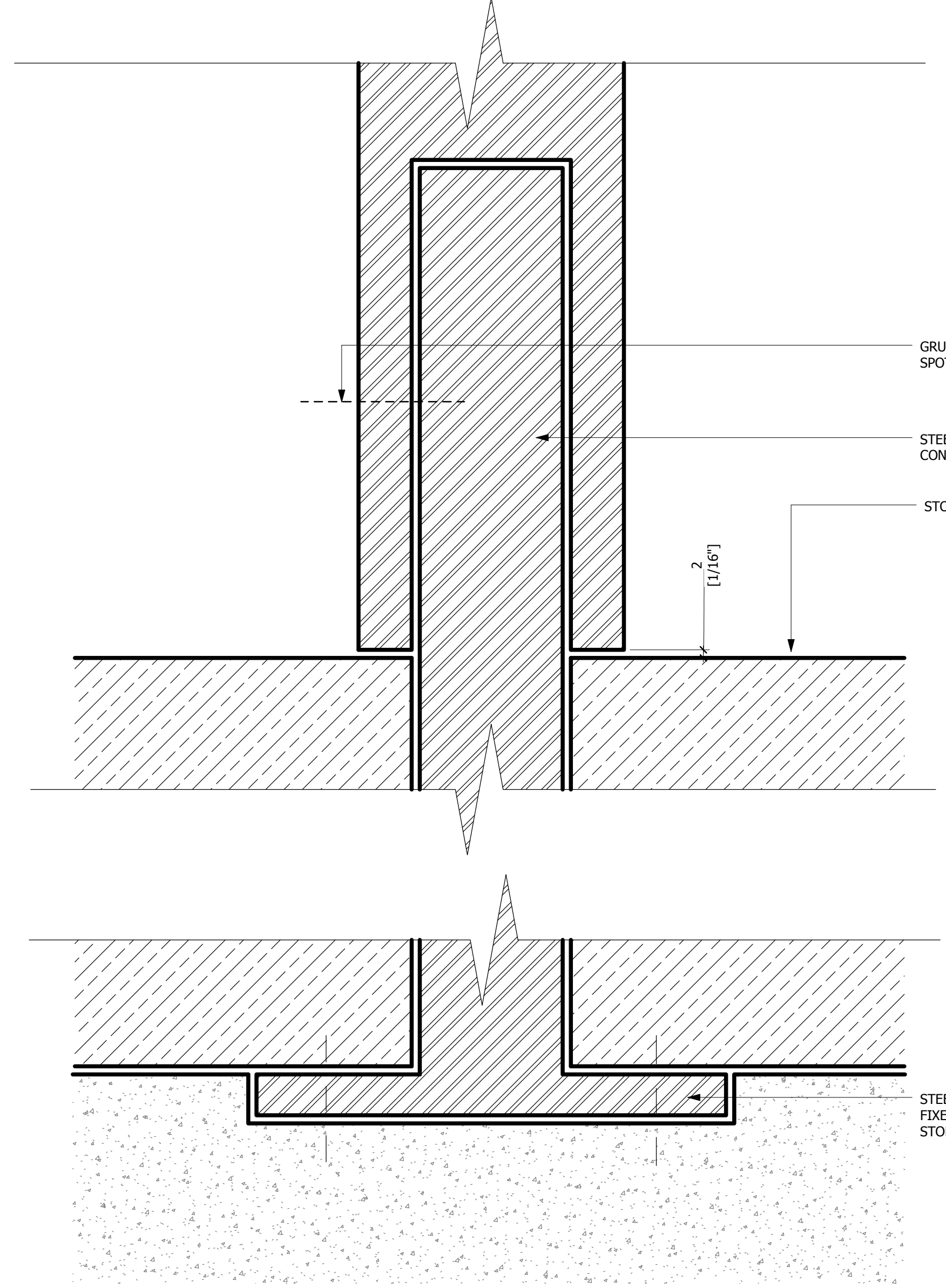
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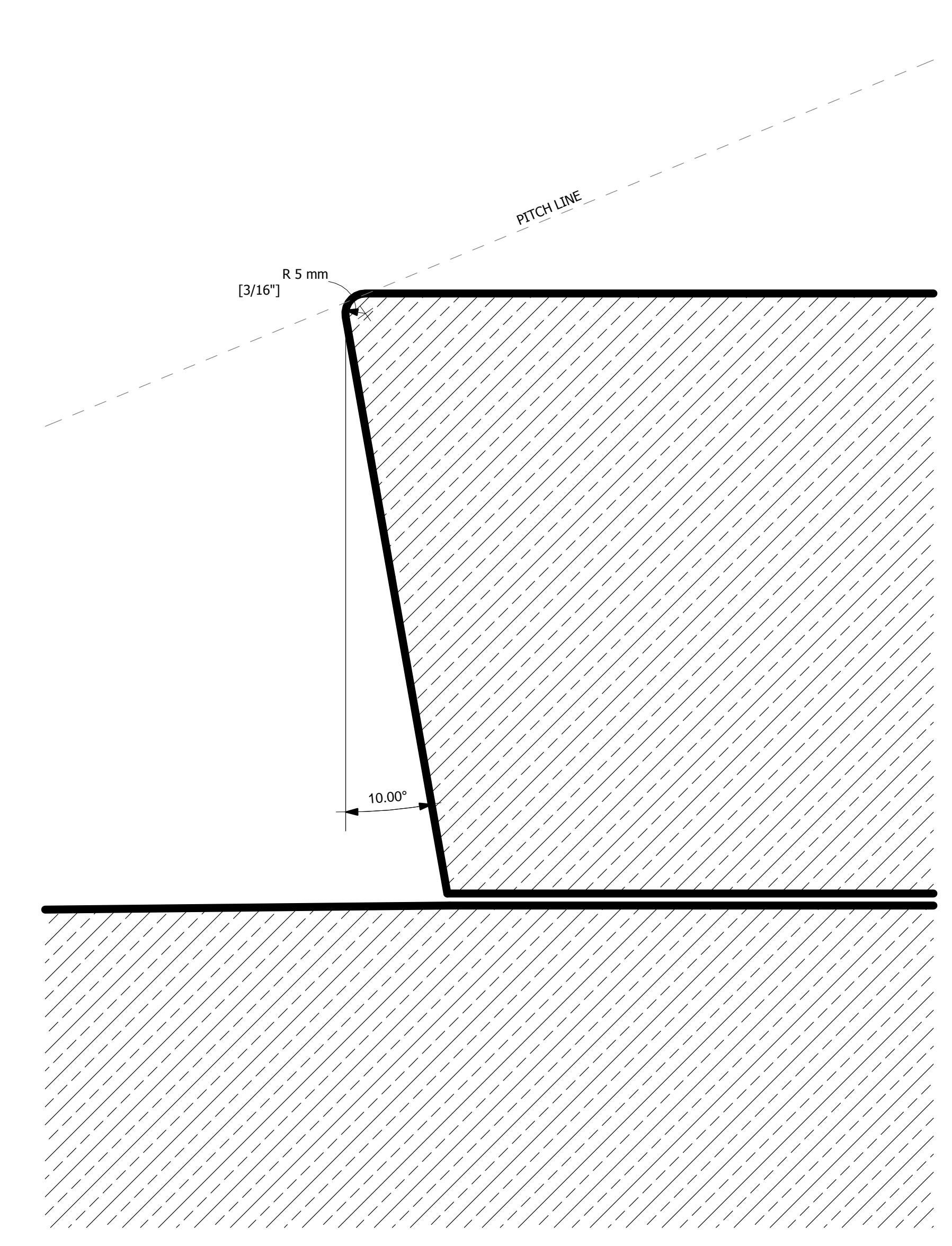
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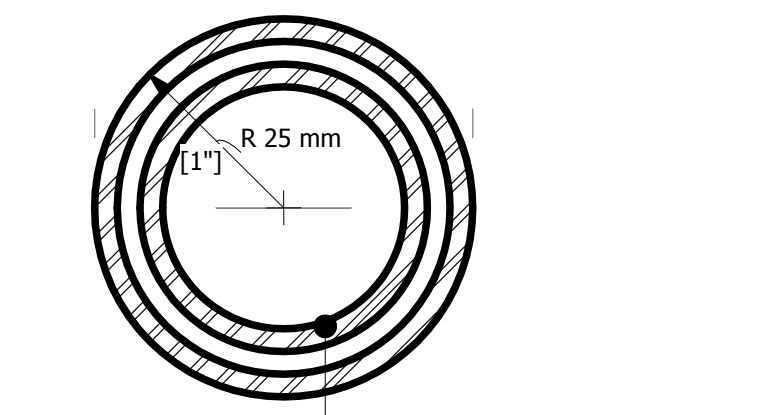
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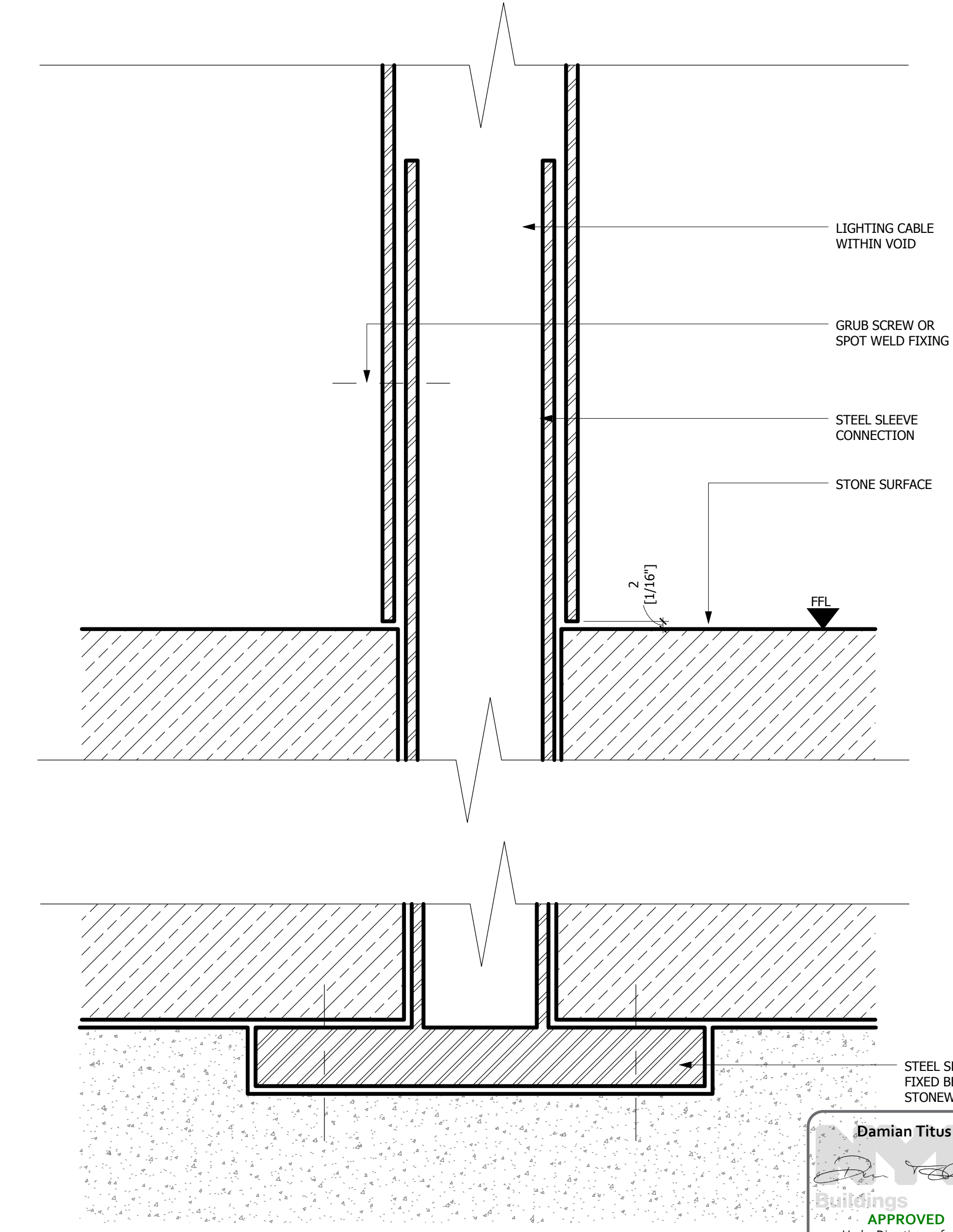
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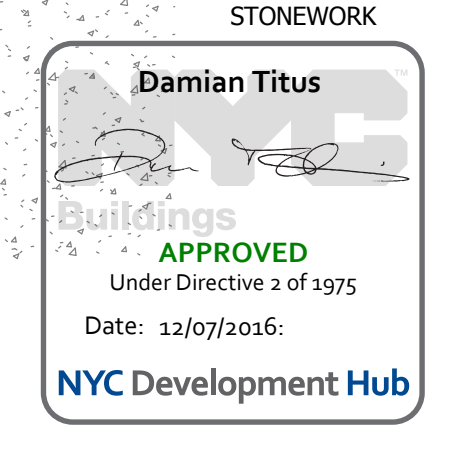
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7 HANDRAIL PROFILE DETAIL SECTION 2 1:1



9 HANDRAIL PROFILE BASE SECTION 1:1



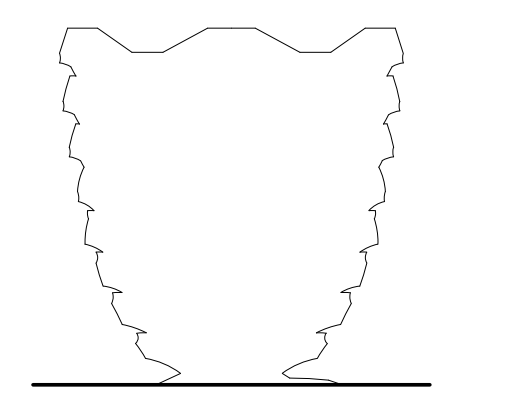
HYE-VS-A-950

PEDESTAL DETAILS

A-950.00

HUDSON YARDS
VESSEL

530 WEST 33RD STREET
NEW YORK, NY



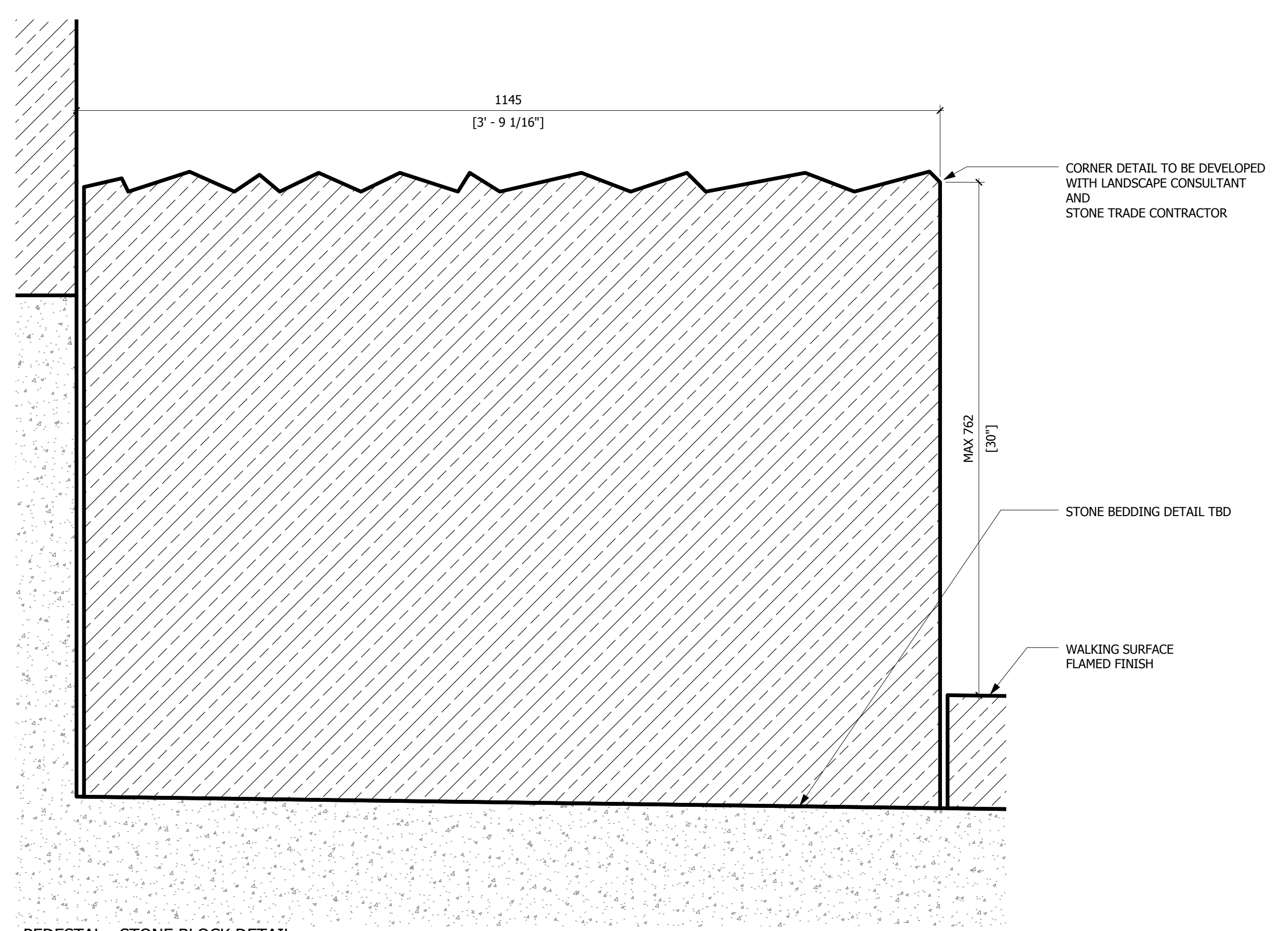
Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048
Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.866.7514 Fax: 212.9863.7510
Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Executive Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
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Design Architect
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United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

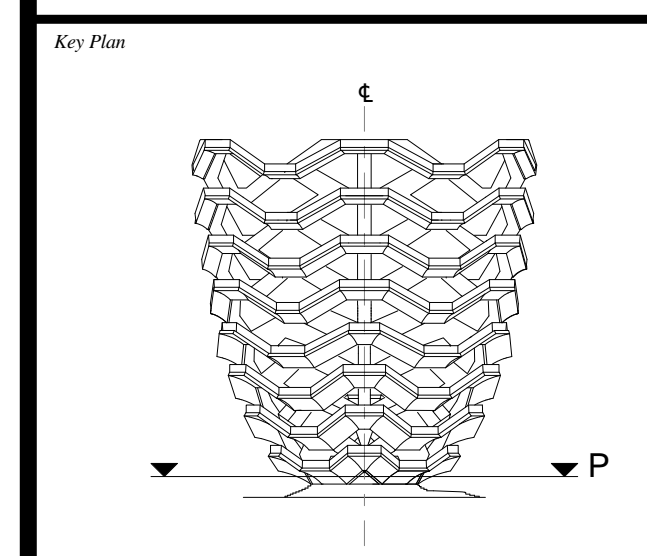
**Civil, Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000



1 PEDESTAL - STONE BLOCK DETAIL
1 : 5

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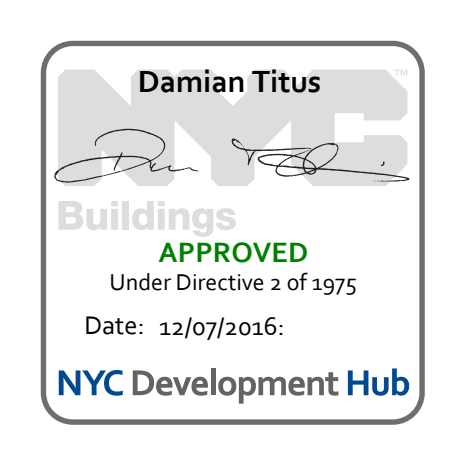
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No. Issue Date

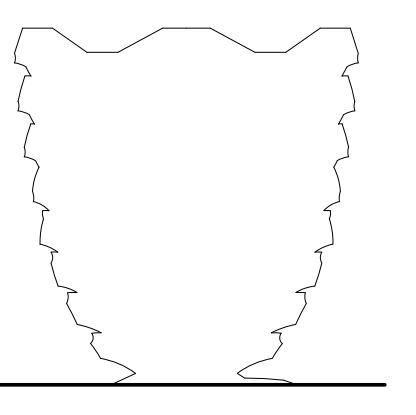


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PEDESTAL DETAILS

Sheet Number
A-951.00





Client
 Related Companies
 60 Columbus Circle
 New York, NY 10023
 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
 320 Park Avenue, 17th Floor
 New York, NY 10022
 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
 Tel: 212.708.6800

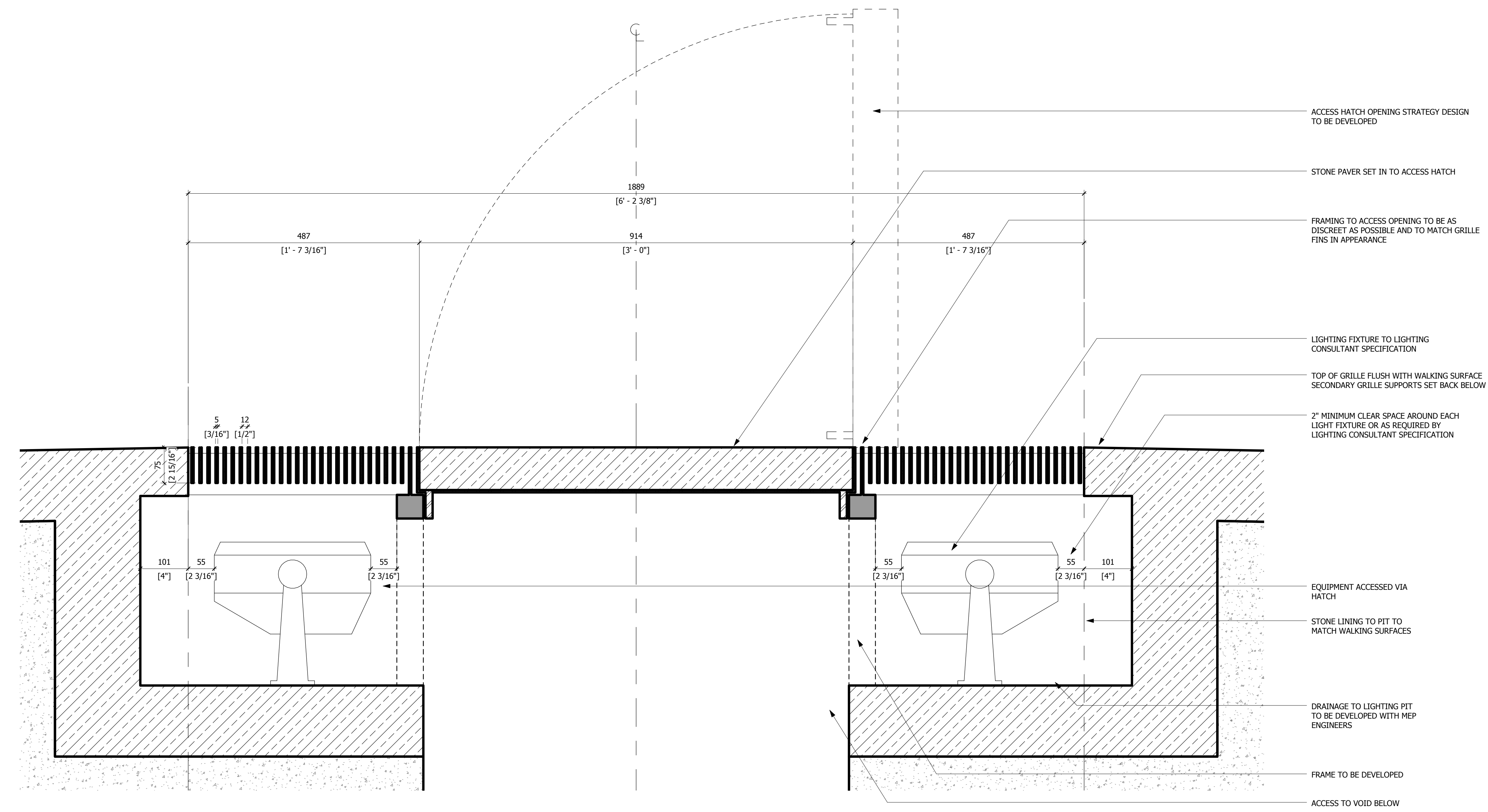
Executive Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
 Heatherwick Studio
 356-364 Grays Inn Road
 London WC1X 8BH
 United Kingdom
 Tel: 44(0)20 7833 8800

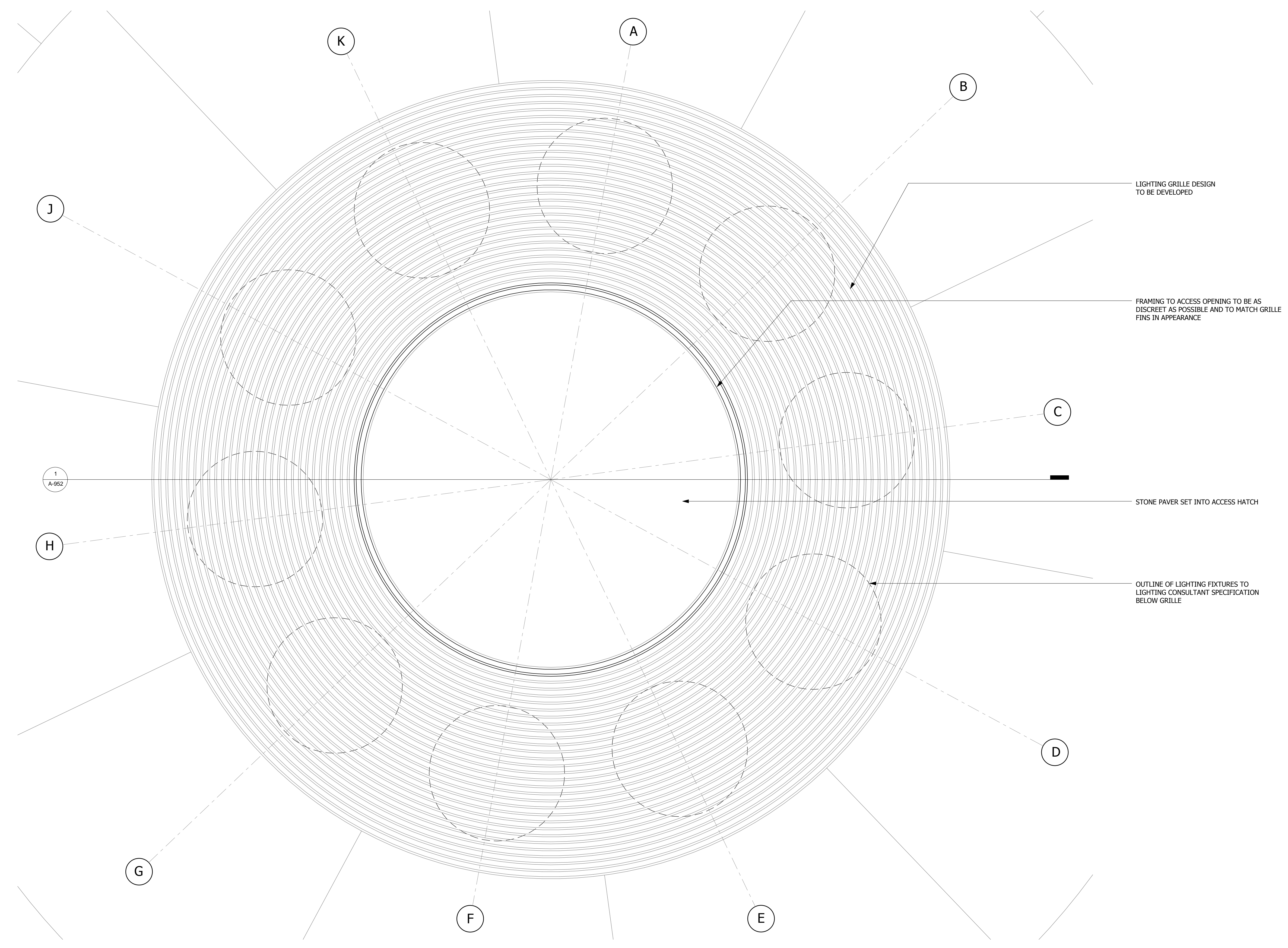
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10010
 Tel: 917.661.7800 Fax: 917.661.7801

Civil, Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

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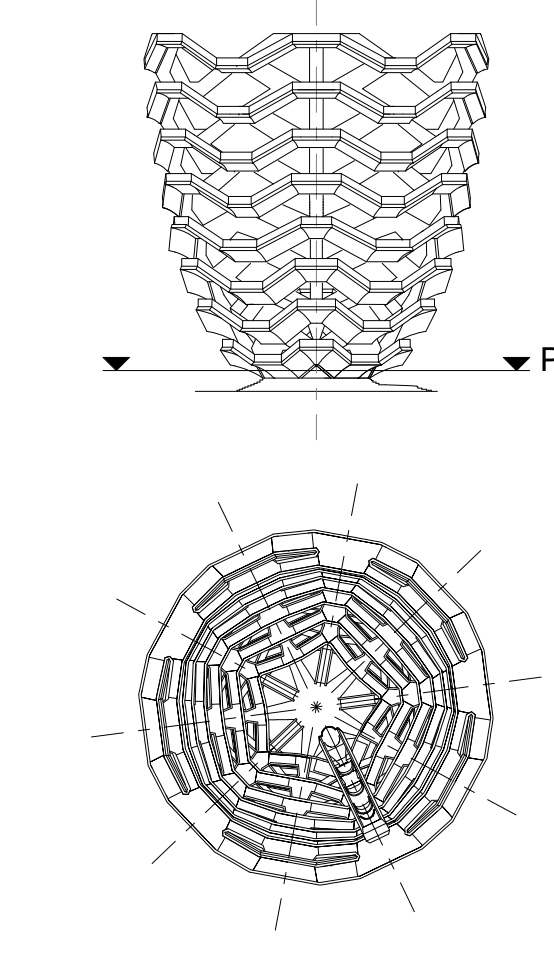
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2 PEDESTAL CENTRAL LIGHT PLAN
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D.O.B. BUILDING PERMIT FILING 05/20/2016
 No. Issue Date

Key Plan

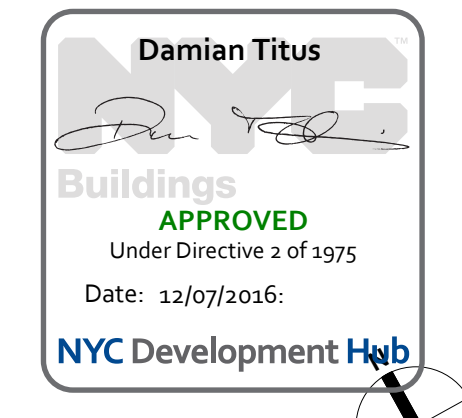


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 Sheet Number

HYE-VS-A-952

**PEDESTAL LIGHTING
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Sheet Number
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HUDSON YARDS VESSEL

DOCUMENT ISSUE 08

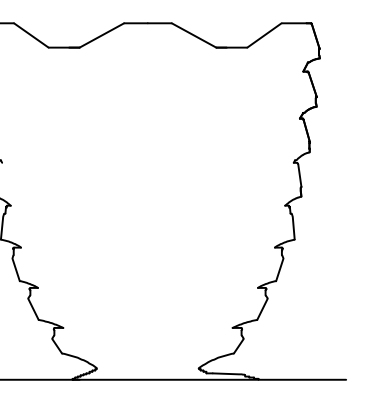
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STRUCTURAL DRAWING LIST

SHEET NO	SHEET NAME	SHEET NO	SHEET NAME
S-001.00	COVER SHEET & DRAWING LIST		
S-002.00	STRUCTURAL GENERAL NOTES		
S-003.00	TOLERANCES		
S-050.00	GENERAL ARRANGEMENT - SHEET I		
S-051.00	GENERAL ARRANGEMENT - SHEET II		
S-052.00	GENERAL ARRANGEMENT - SHEET III		
S-060.00	GENERAL ARRANGEMENT - SPINE		
S-070.00	DAMPER SYSTEM		
S-261.00	DOGBONE LEVEL 11		
S-262.00	DOGBONE LEVEL 11 - SPINE		
S-271.00	DOGBONE LEVELS 1-3		
S-272.00	DOGBONE LEVELS 1-3 - DETAILS		
S-500.00	TYPICAL SECTION - DETAILS I		
S-501.00	TYPICAL SECTION - DETAILS II		
S-502.00	TYPICAL SECTION - DETAILS III		
S-503.00	TYPICAL SECTION - DAMPERS		
S-510.00	TYPICAL DETAILS - PLATE THICKNESS		
S-540.00	SPLICE DETAILS		
S-545.00	NODE DETAILS		
S-560.00	SPINE DETAILS - SHEET I		
S-561.00	SPINE DETAILS - SHEET II		
S-700.00	BASE STRUCTURE - GENERAL ARRANGEMENT		
S-710.00	STANDARD BASE - GENERAL ARRANGEMENT		
S-711.00	STANDARD BASE - DETAILS		
S-720.00	SPINE BASE - GENERAL ARRANGEMENT		
S-721.00	SPINE BASE - DETAILS		
S-800.00	TONNAGE BREAKDOWN		
S-850.00	MOVEMENTS		
S-860.00	CONNECTION FORCES - DOGBONES I		
S-861.00	CONNECTION FORCES - DOGBONES II		
S-862.00	CONNECTION FORCES - DOGBONES III		
S-863.00	CONNECTION FORCES - SPINE I		
S-864.00	CONNECTION FORCES - SPINE II		
S-865.00	BASE REACTIONS		

HUDSON YARDS VESSEL

TBD
XXX
NEW YORK, NY



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.586.7514 Fax: 212.586.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
Heatherwick Studio
356-364 Gray's Inn Road
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United Kingdom
Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.561.7800 Fax: 917.661.7801

**Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security**
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

Rev	Description	Date
01	DOCUMENT ISSUE 08	23 MAR 2015
02	DOCUMENT ISSUE 02	29 AUG 2014
03	DOCUMENT ISSUE 01	13 MAY 2014
04	Issue	Issue

Key Plan

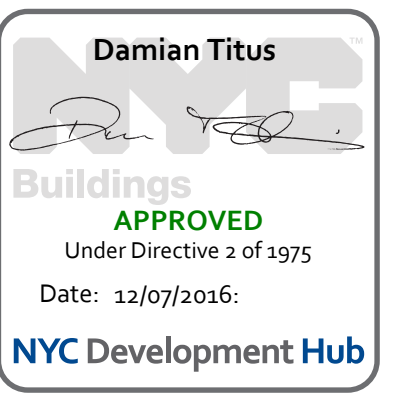
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Project No.	731
Sheet No.	
Sheet Number	

HYE-VS-S-001

Drawing Title

COVER SHEET & DRAWING LIST

Project Number: 05-0001 Drawing Number
S-001.00



GR GENERAL REQUIREMENTS

- GR-1 AS USED IN THESE GENERAL NOTES: "DRAWINGS" MEANS THE LATEST STRUCTURAL DESIGN DRAWINGS, UON. "SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON. "CONTRACT DOCUMENTS" IS DEFINED AS THE DESIGN DRAWINGS AND THE SPECIFICATIONS...

CD CODES AND DESIGN CRITERIA

- CD-1 PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE PROJECT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, UON: 2014 NYC BUILDING CODE...

SS STRUCTURAL STEEL

- SS-1 STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS: ROLLED SHAPES AND CHANNELS: ASTM A572 OR A992, MIN. YIELD STRENGTH 50 KSI...

SC STRUCTURAL STEEL CONNECTIONS

- SC-1 ALL STEEL DETAILS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", AISI-LRFD AND RESISTANCE FACTOR DESIGN U.O..

- SC-17 SPLICES WILL BE PERMITTED ONLY WHERE INDICATED ON THE CONTRACT DRAWINGS OR THE REVIEWED SHOP DRAWINGS. FASTEN SPLICES OF COMPRESSION MEMBERS ONLY AFTER SURFACES ARE CLEANED AND ABUTTING SURFACES HAVE BEEN BROUGHT COMPLETELY INTO CONTACT...

ST STRUCTURAL STEEL TESTING

- ST-1 THE FOLLOWING SHOP AND FIELD INSPECTIONS, IN ADDITION TO ANY OTHER INSPECTIONS SPECIFIED ON THE CONTRACT DOCUMENTS WILL BE CARRIED OUT BY AN OWNER APPROVED TESTING AGENCY, WHO IS TO HAVE ACCESS TO ALL PARTS OF THE WORKSHOP WHERE STEELWORK IS BEING FABRICATED AND IS TO BE PROVIDED WITH REASONABLE INSPECTION FACILITIES...

CI CONTROLLED INSPECTIONS

- CI-1 THE FOLLOWING CONTROLLED INSPECTIONS ARE REQUIRED TO BE PERFORMED IN ACCORDANCE WITH THE BUILDING CODE OF THE CITY OF NEW YORK

Table with 2 columns: ITEM, NYC CODE REF SECTION. Row 1: STRUCTURAL STEEL - WELDING, BC 1704.3.1. Row 2: STRUCTURAL STEEL - ERECTION AND BOLTING, BC 1704.3.3

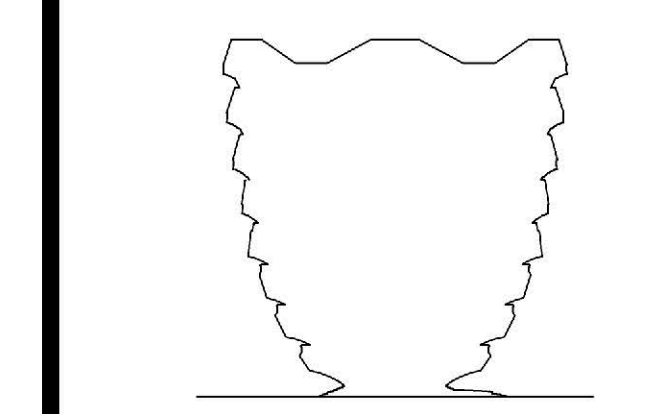
COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL FOR VESSEL COMPONENTS THIS DRAWING SET IS TO BE CONSIDERED INTEGRAL WITH THE PROVIDED 3D MODELS AND MAY NOT BE CONSIDERED INDEPENDENTLY FROM THE CONTRACTOR IS TO BASE THEIR BID UPON INFORMATION PROVIDED IN BOTH THE DRAWINGS AND 3D MODELS...

ABBREVIATION & SYMBOLS

Table with 4 columns: ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION. Lists various abbreviations like ADDL, ADJ, BLDG, etc. and their corresponding descriptions.

HUDSON YARDS VESSEL

TBD XXX NEW YORK, NY



Client Related Companies 60 Columbus Circle New York, NY 10023 Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group 320 Park Avenue, 17th Floor New York, NY 10022 Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager Tishman Construction Corporation 100 Park Avenue New York, NY 10022 Tel: 212.708.6800

Architect Kohn Pedersen Fox Associates PC Architects & Planning Consultants 11 West 42nd Street New York, NY 10036 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect Heerterwick Studio 356-364 Greys Inn Road London WC1X 9SH United Kingdom Tel: 44(0)20 7833 8800

Structural Engineer Thornton Tomasetti, Inc. 51 Madison Avenue New York, NY 10010 Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing Fire Alarm, Fire Protection, Security One Arup & Partners P.C. 77 Water Street New York, NY 10005 Tel: 212.896.3000

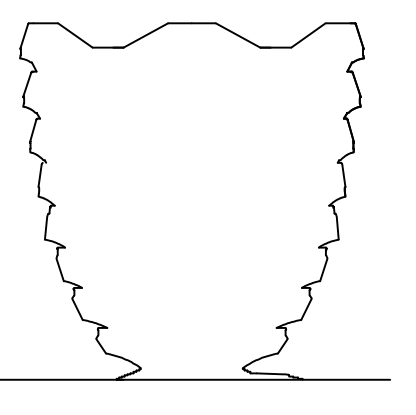
Revision table with columns: No., Description, Date. Shows revisions 01 through 05.

Key Plan

Project information form with fields for Date (05/20/16), Project No. (731), and Drawing Title (HYE-VS-S-002).

Structural General Notes

NYC Development Hub logo and drawing information including drawing number HYE-VS-S-002 and sheet number SHEET 2 OF 34.



Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue
Tel: 212.708.6800

Architect
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Architects & Planning Consultants
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New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

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United Kingdom
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Structural Engineer
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Fire Alarm, Fire Protection, Security
Ove Arup & Partners P.C.
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New York, NY 10005
Tel: 212.896.3000

01	DOCUMENT ISSUE 01	13 MAY 2014
02	DOCUMENT ISSUE 02	29 AUG 2014
03	DOCUMENT ISSUE 03	13 MAY 2014
04	DOCUMENT ISSUE 04	13 MAY 2014
05	DOCUMENT ISSUE 05	13 MAY 2014

Rev. No.

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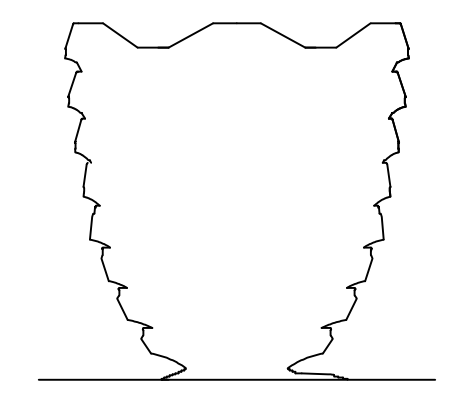
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Client
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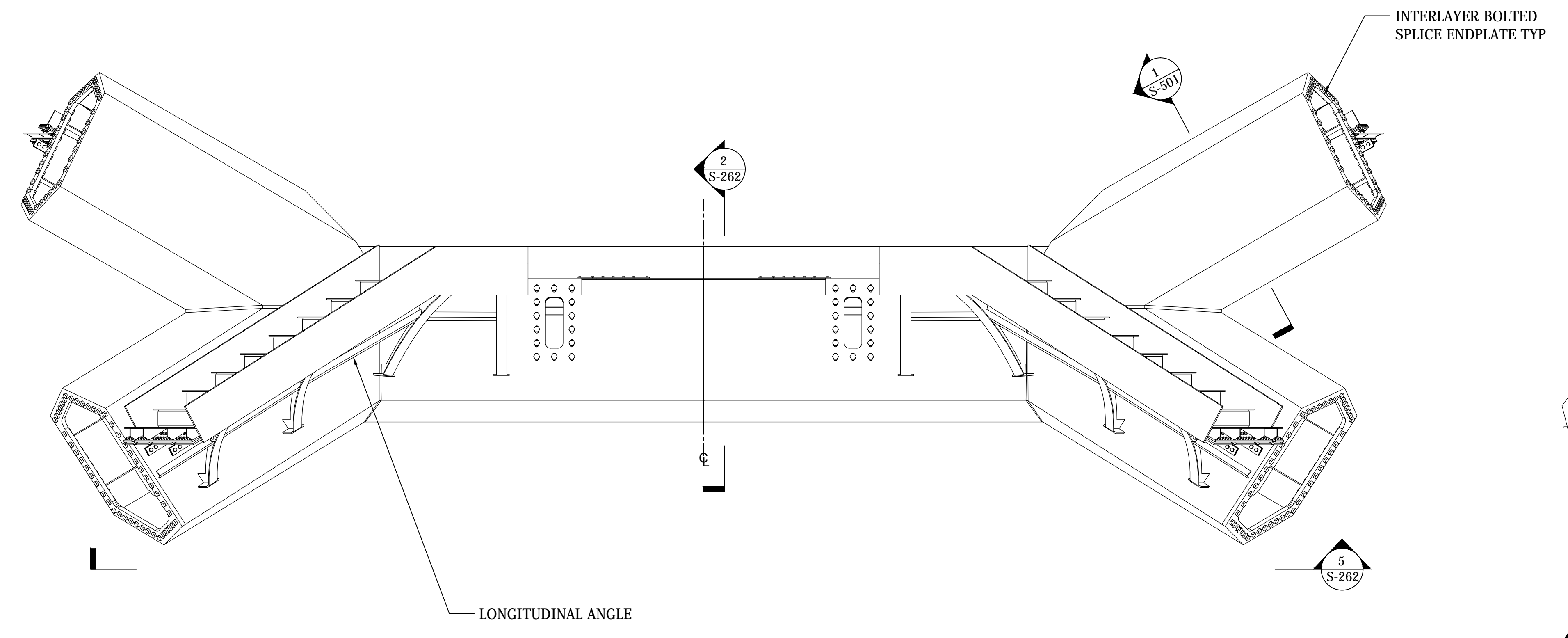
Construction Manager
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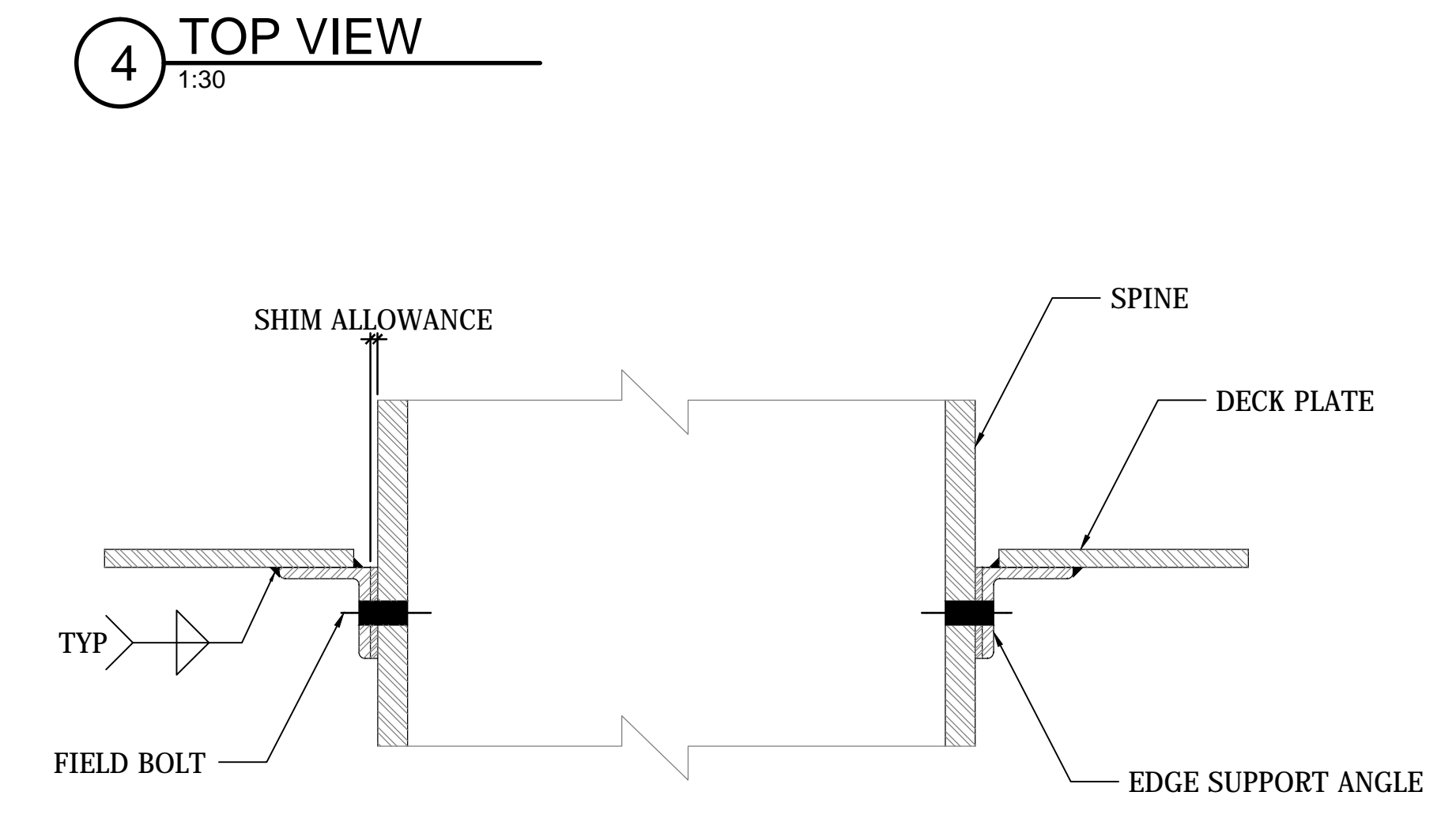
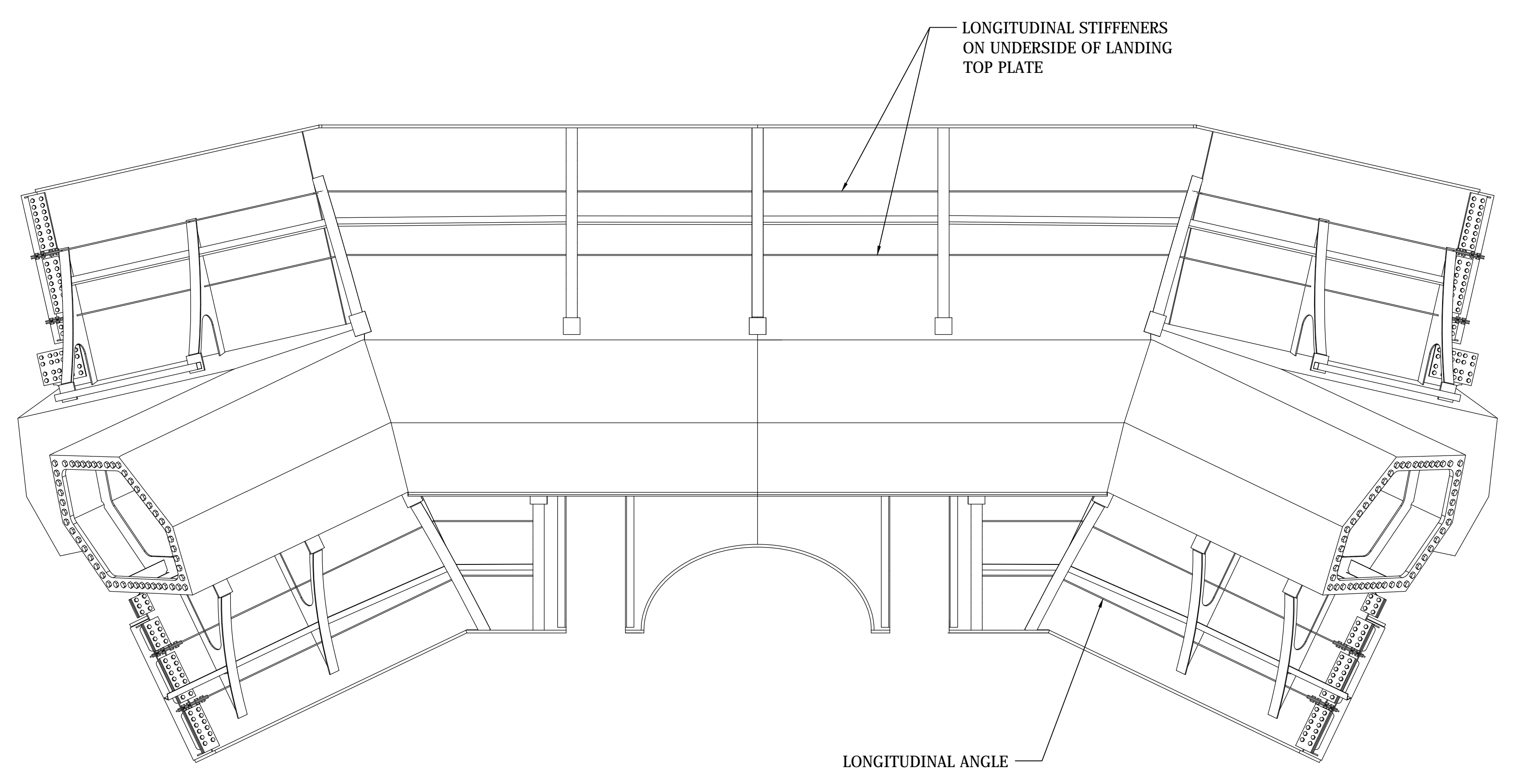
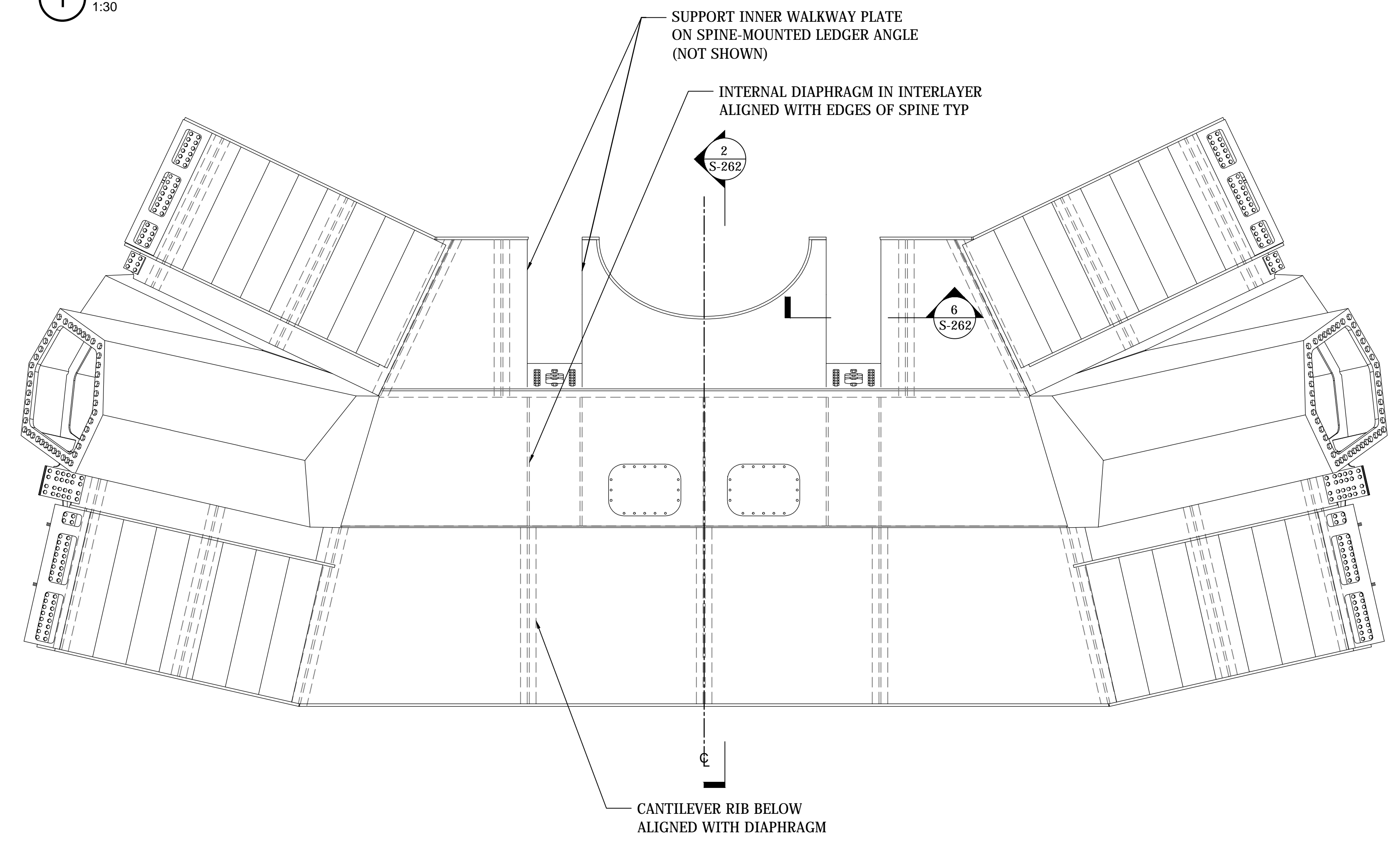
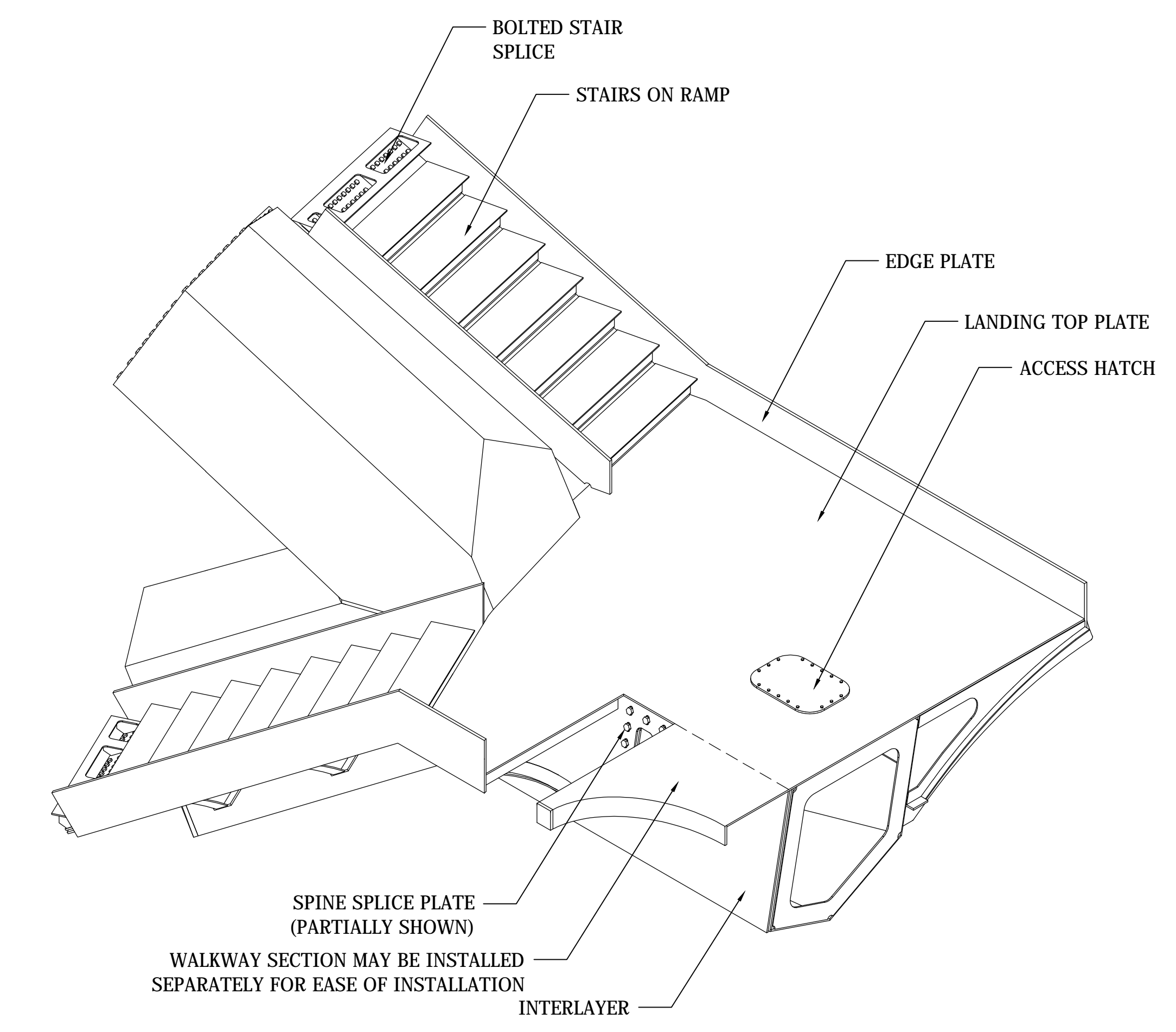
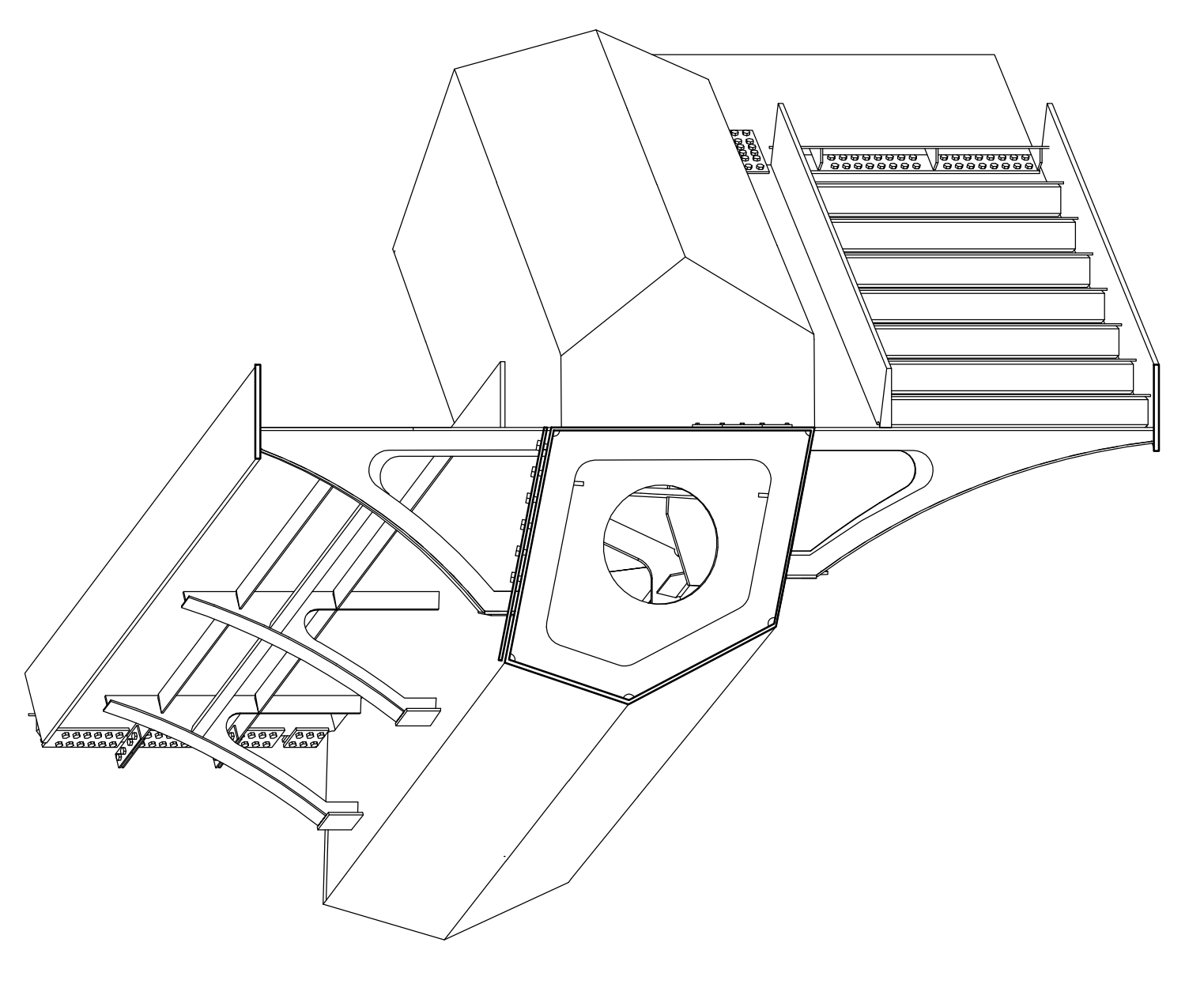
Design Architect
Heathcote Studio
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1 ELEVATION
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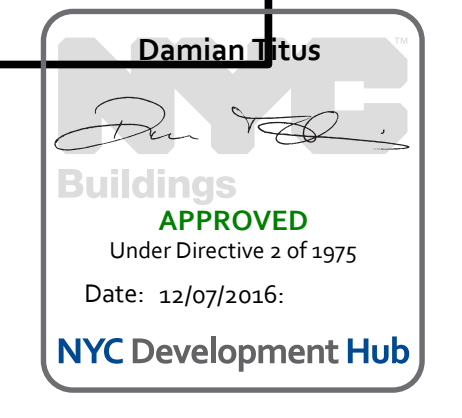


COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

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REFER TO ARCHITECTURAL DRAWINGS FOR SOFFIT DETAILS.



01	DOCUMENT ISSUE 01	21 MAR 2015
02	DOCUMENT ISSUE 02	29 APR 2014
03	DOCUMENT ISSUE 03	13 MAY 2014
04	Issue	Date

Key Plan

Title: 03/23/15

Project No: 731

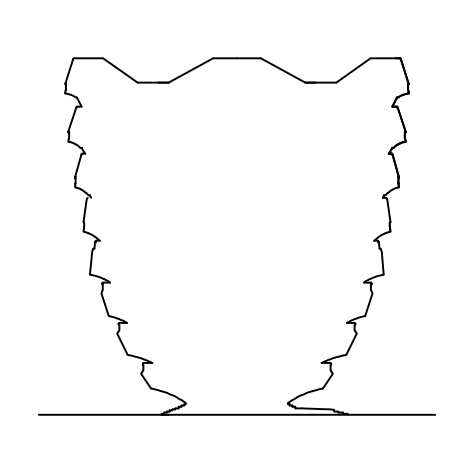
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Sheet Number: HYE-VS-S-262

Drawing Title: DOGBONE LEVEL 11 SPINE

DOG BONE LEVEL 11
SPINE

Project Number / B-DCM Drawing Number
S-262.00



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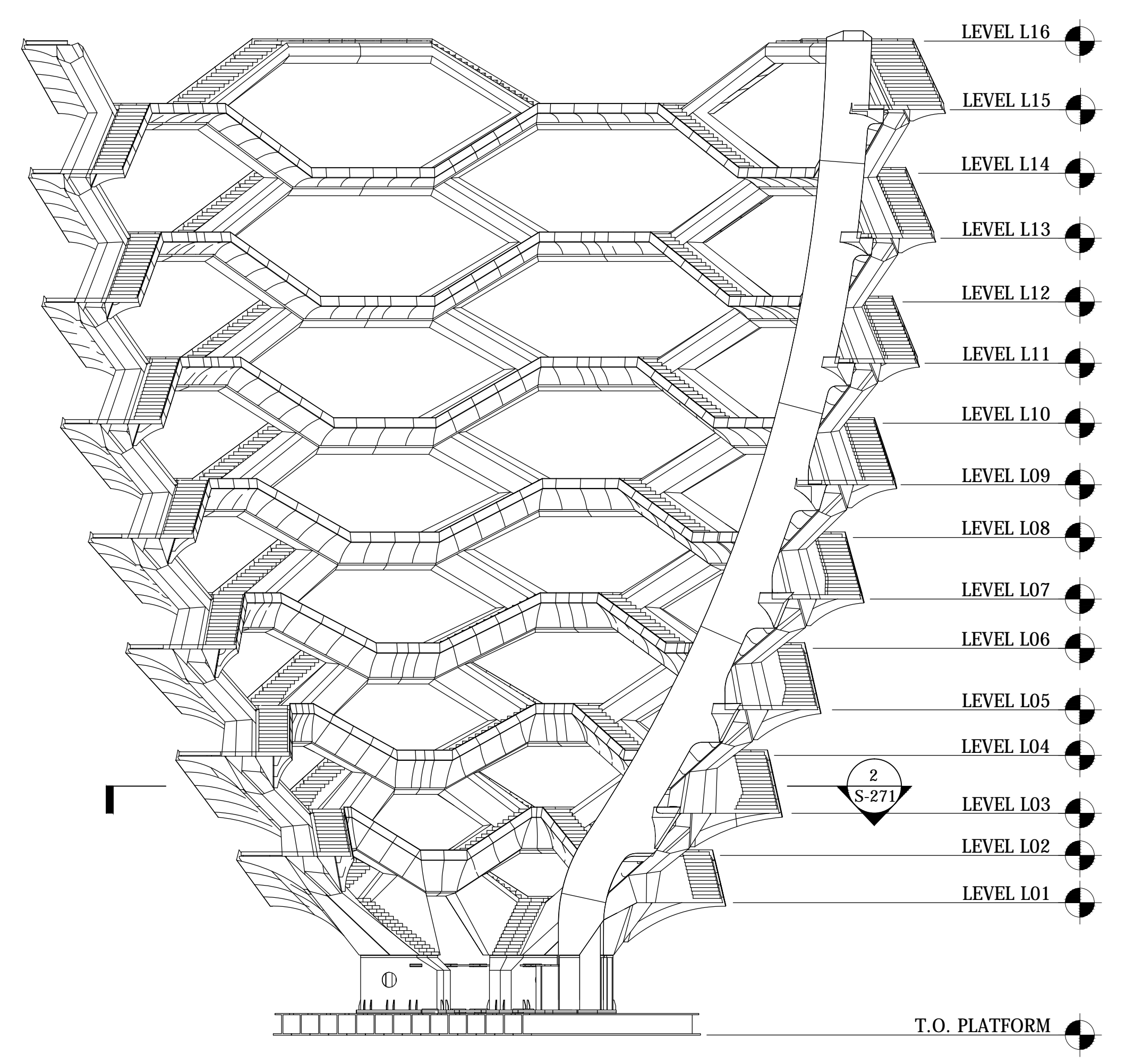
Construction Manager
 Tishman Construction Corporation
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 Kohn Pedersen Fox Associates PC
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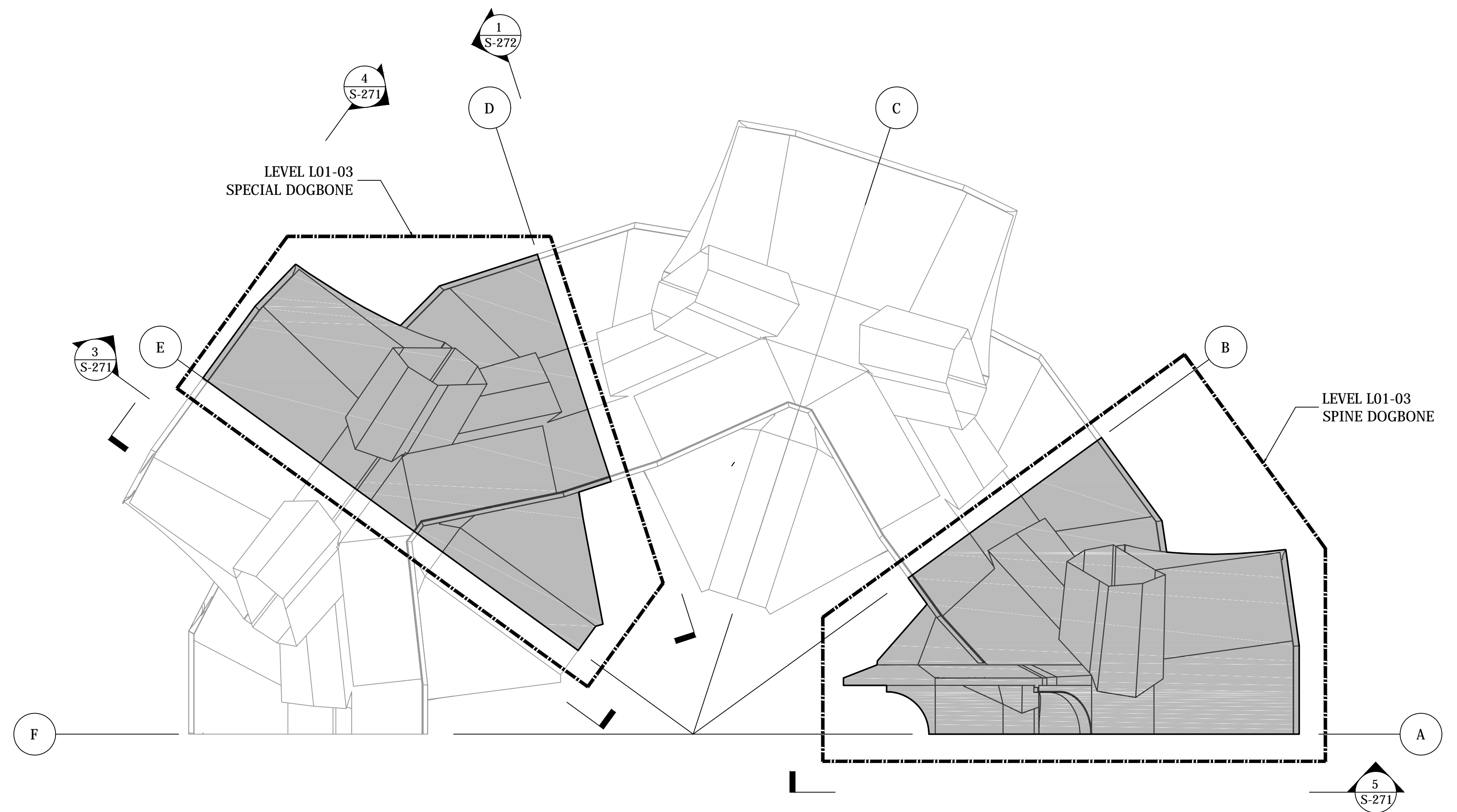
Design Architect
 Heatherwick Studio
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 Thornton Tomasetti, Inc.
 51 Madison Avenue
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 Tel: 917.661.7800 Fax: 917.661.7801

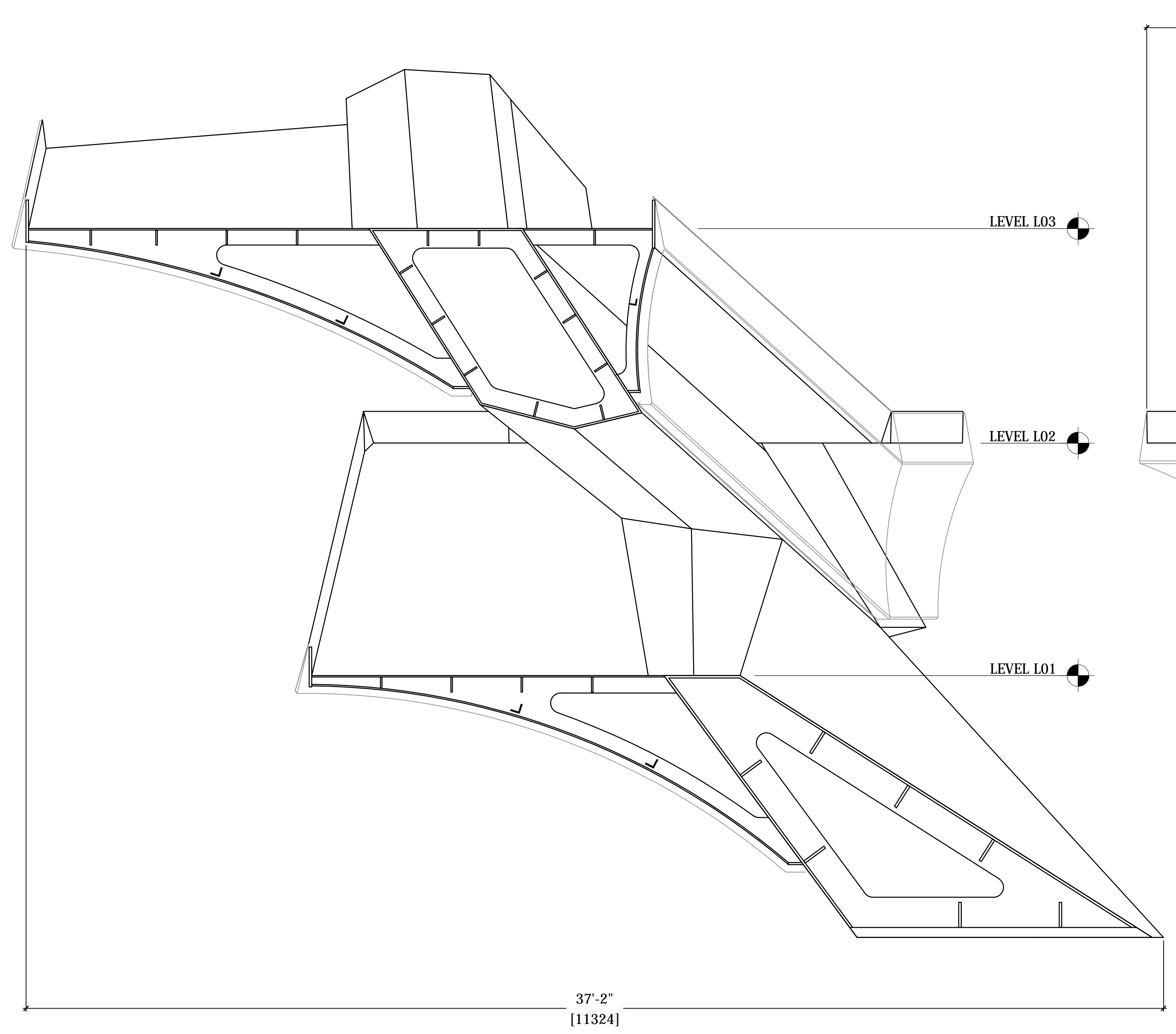
*Mechanical, Electrical, Plumbing,
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 Ove Arup & Partners P.C.
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 New York, NY 10005
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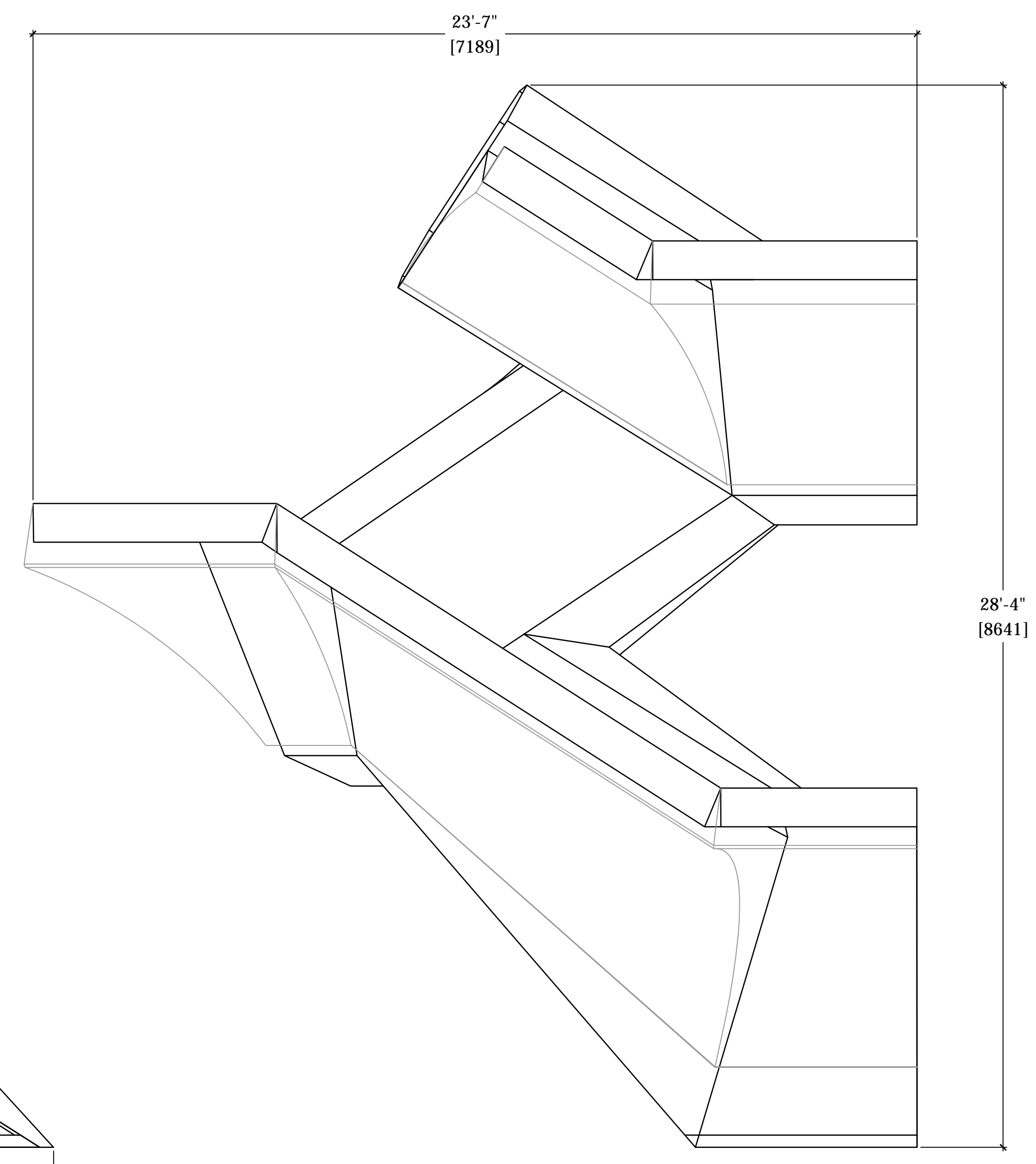
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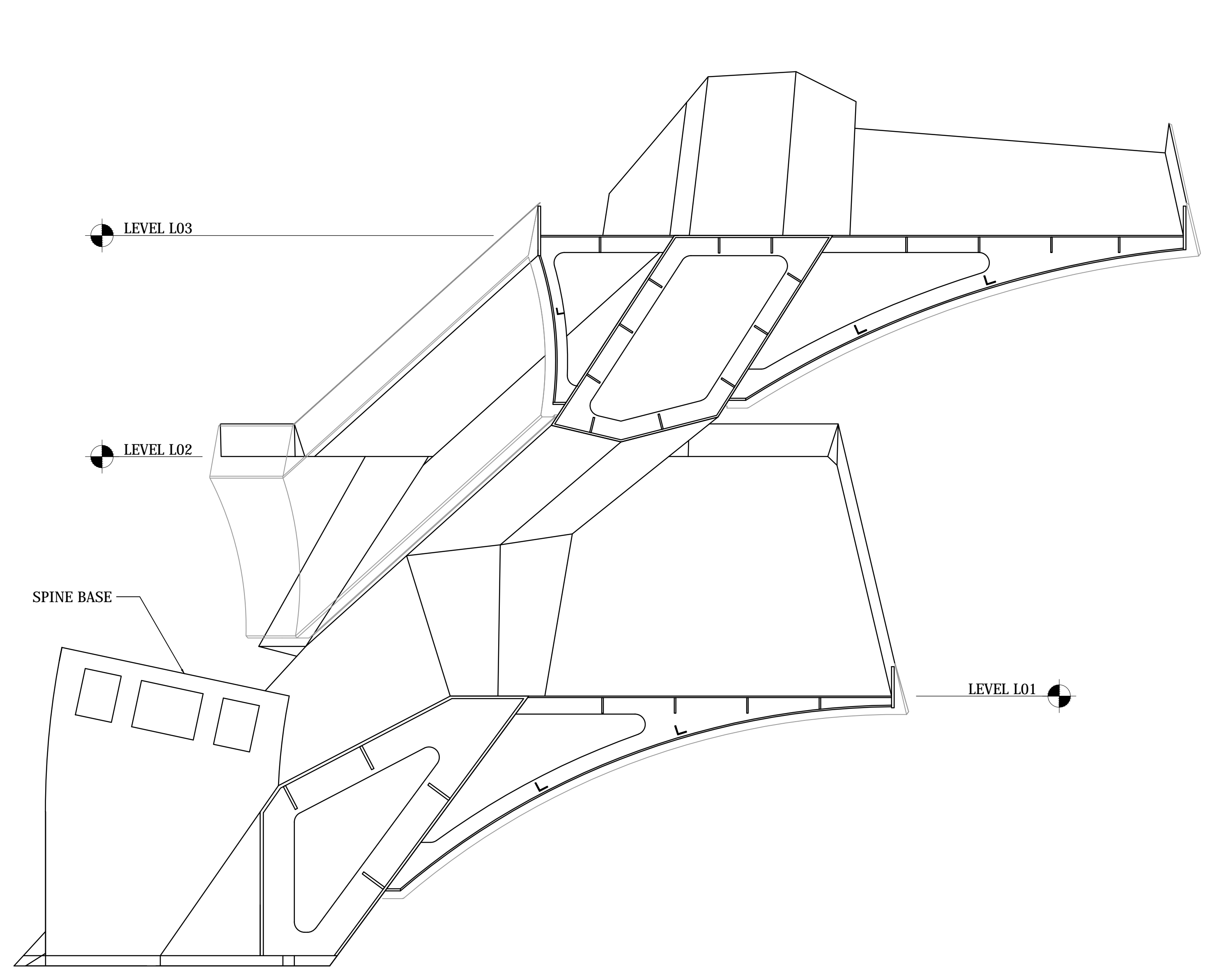
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3 SECTION
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4 SECTION
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5 SECTION
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02	DOCUMENT ISSUE 02	29 AUG 2014
03	DOCUMENT ISSUE 03	22 MAR 2015

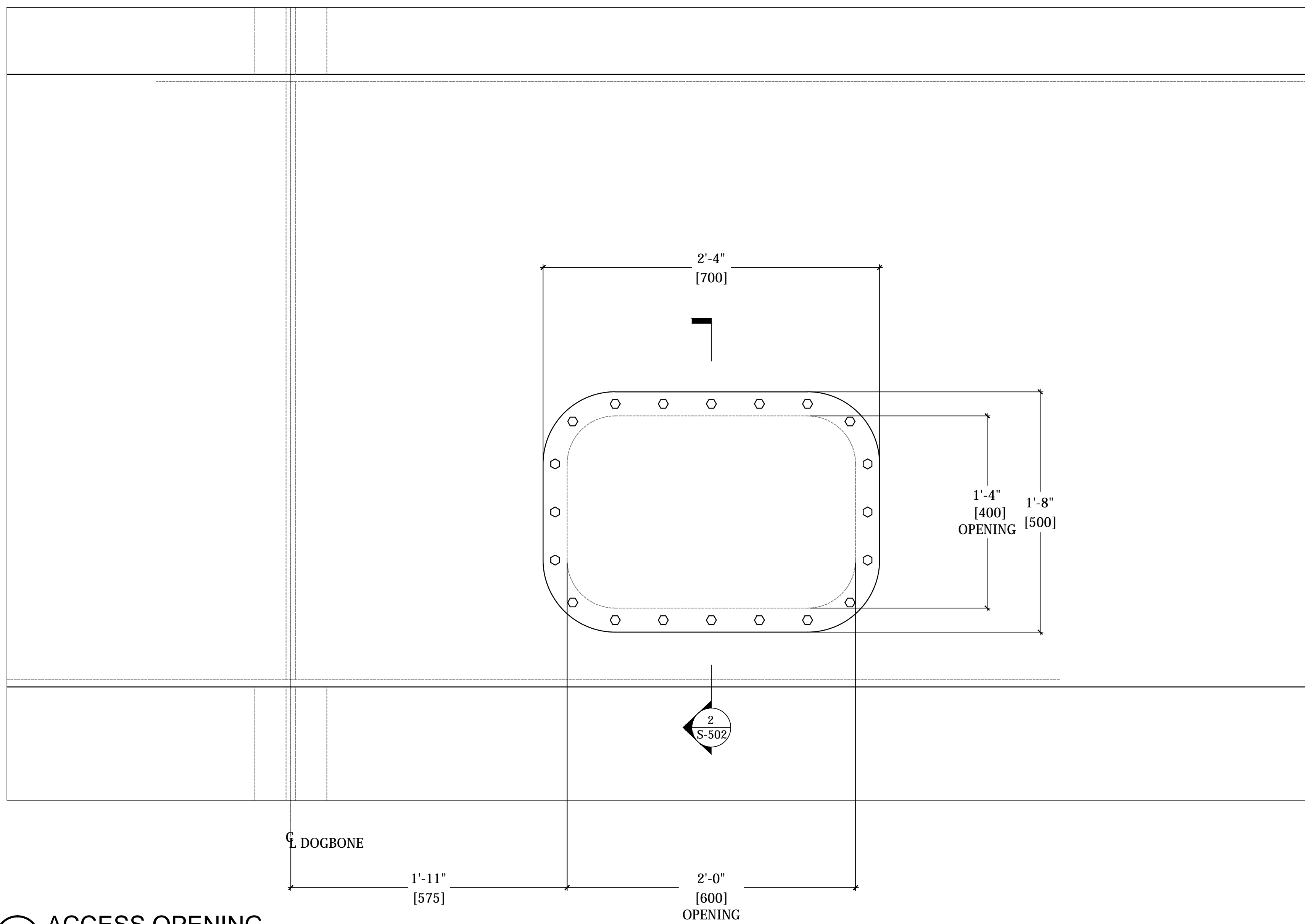
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 Project No: 731
 Sheet No: 731
 Drawing Title: HYE-VS-S-271

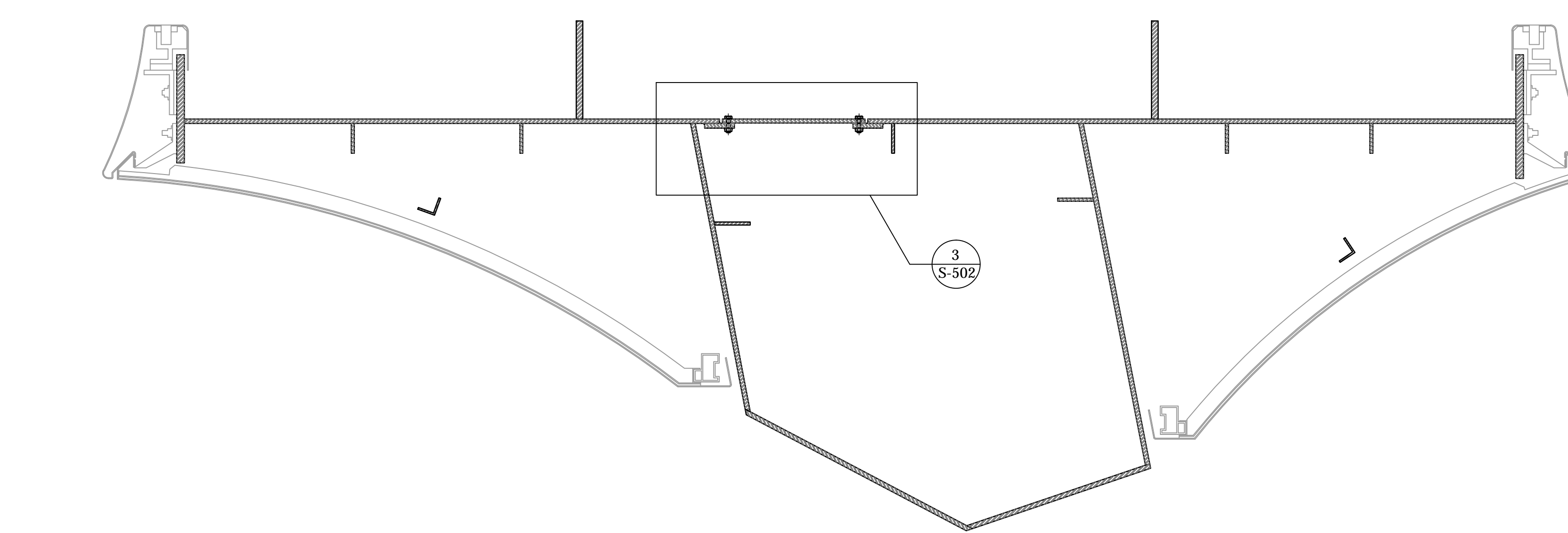
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LEVEL L01-03**

APPROVED
 Under Directive 2 of 1975
 Date: 12/07/2015
 NYC Development Hub

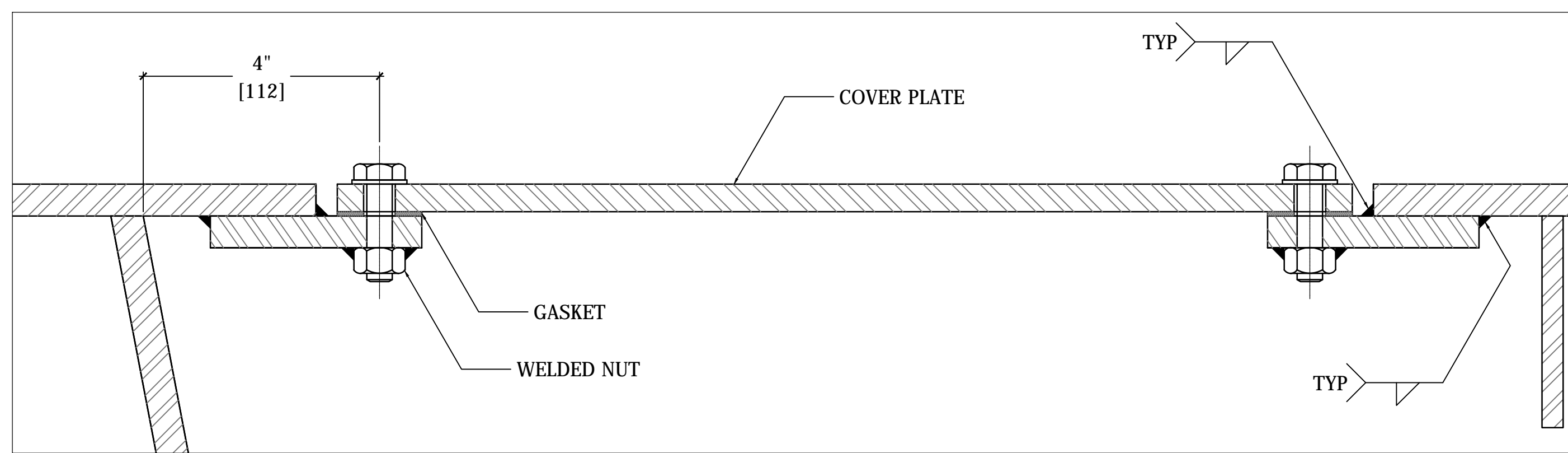
Professional Seal: DAMIAN TITUS, ARCHITECT



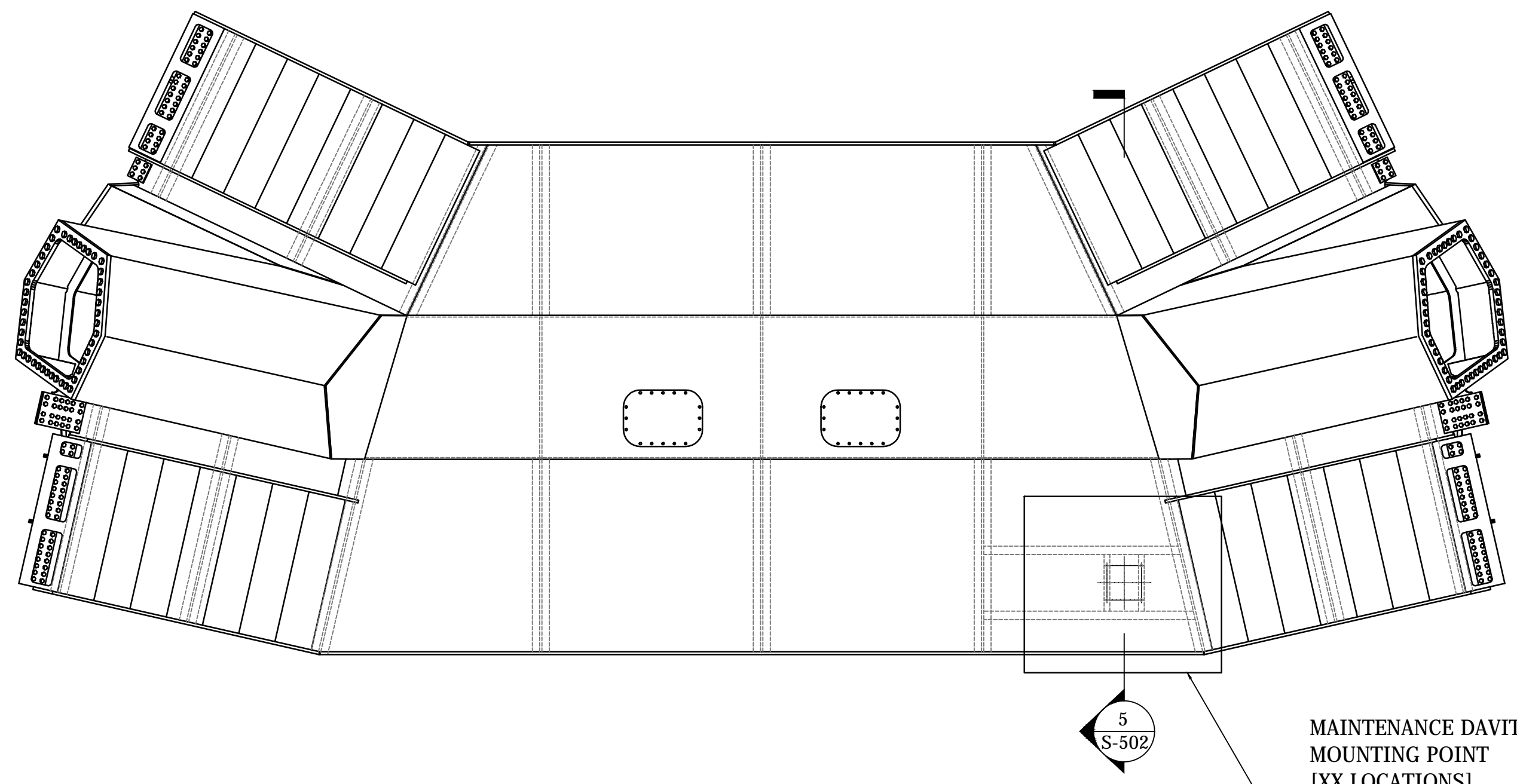
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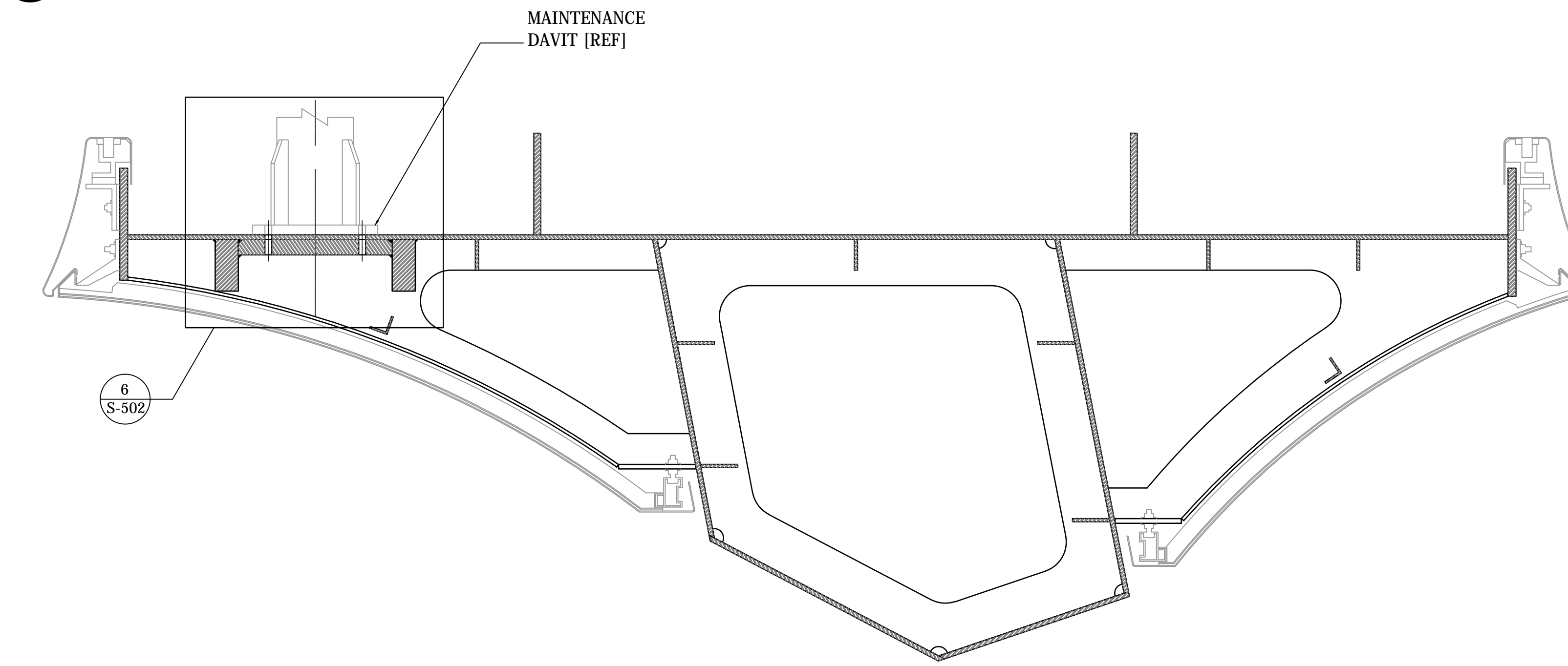
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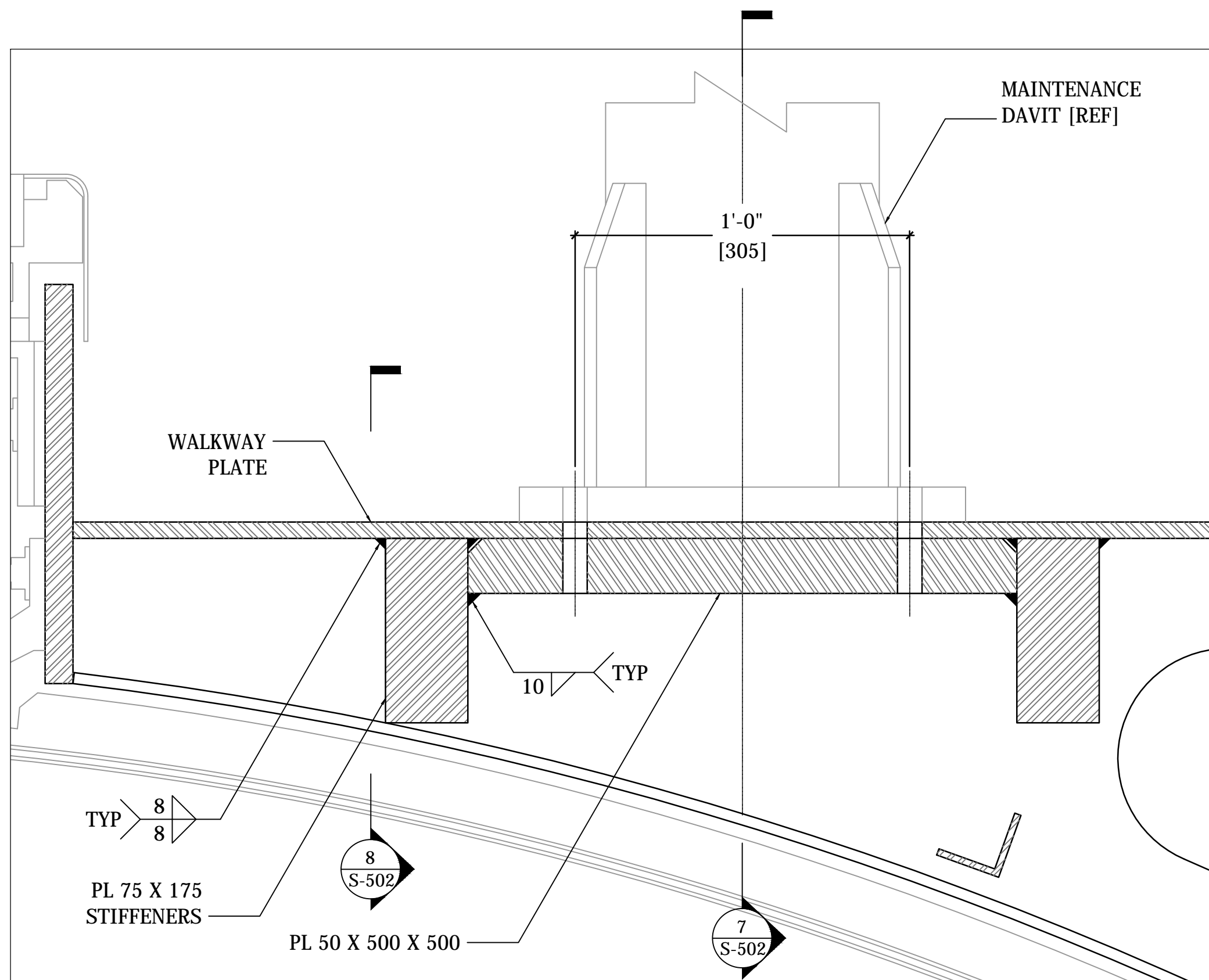
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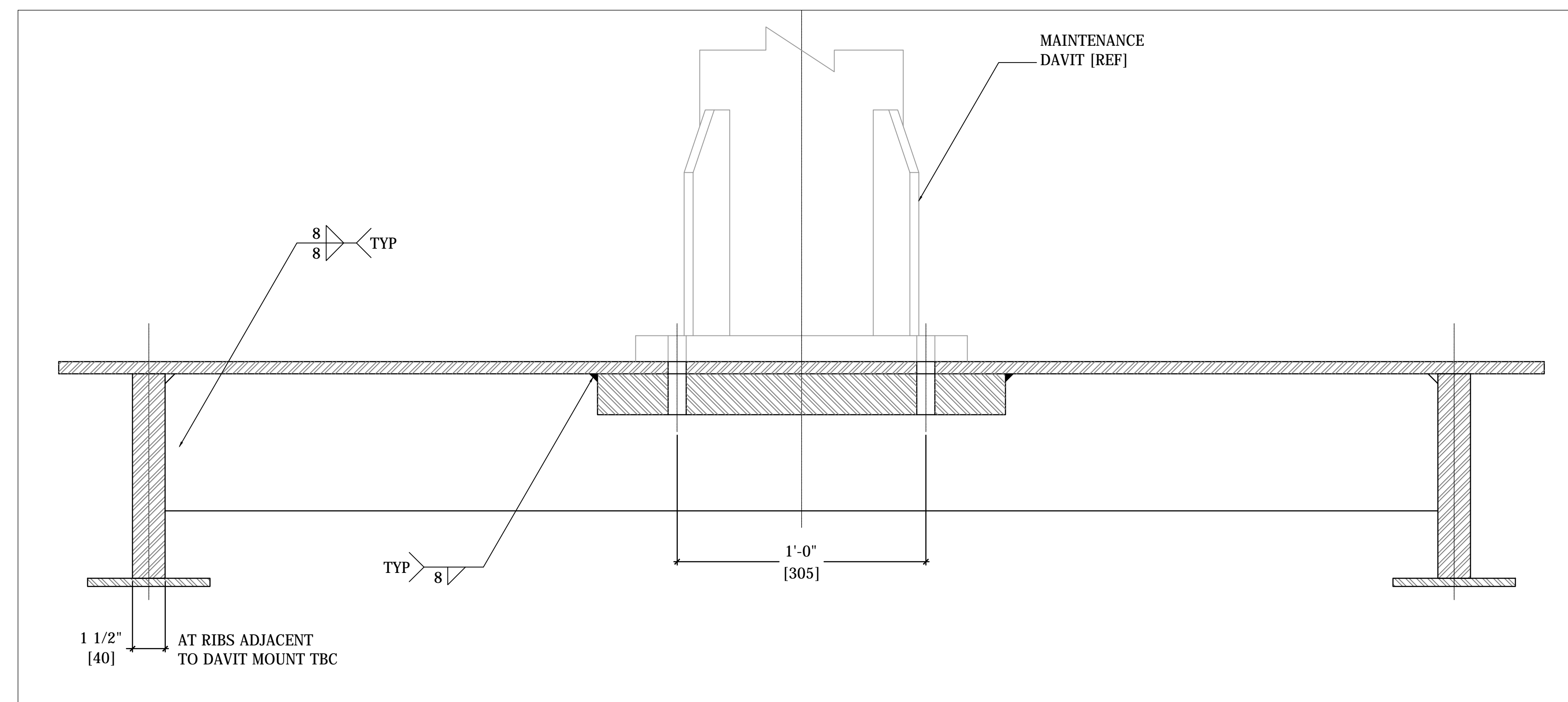
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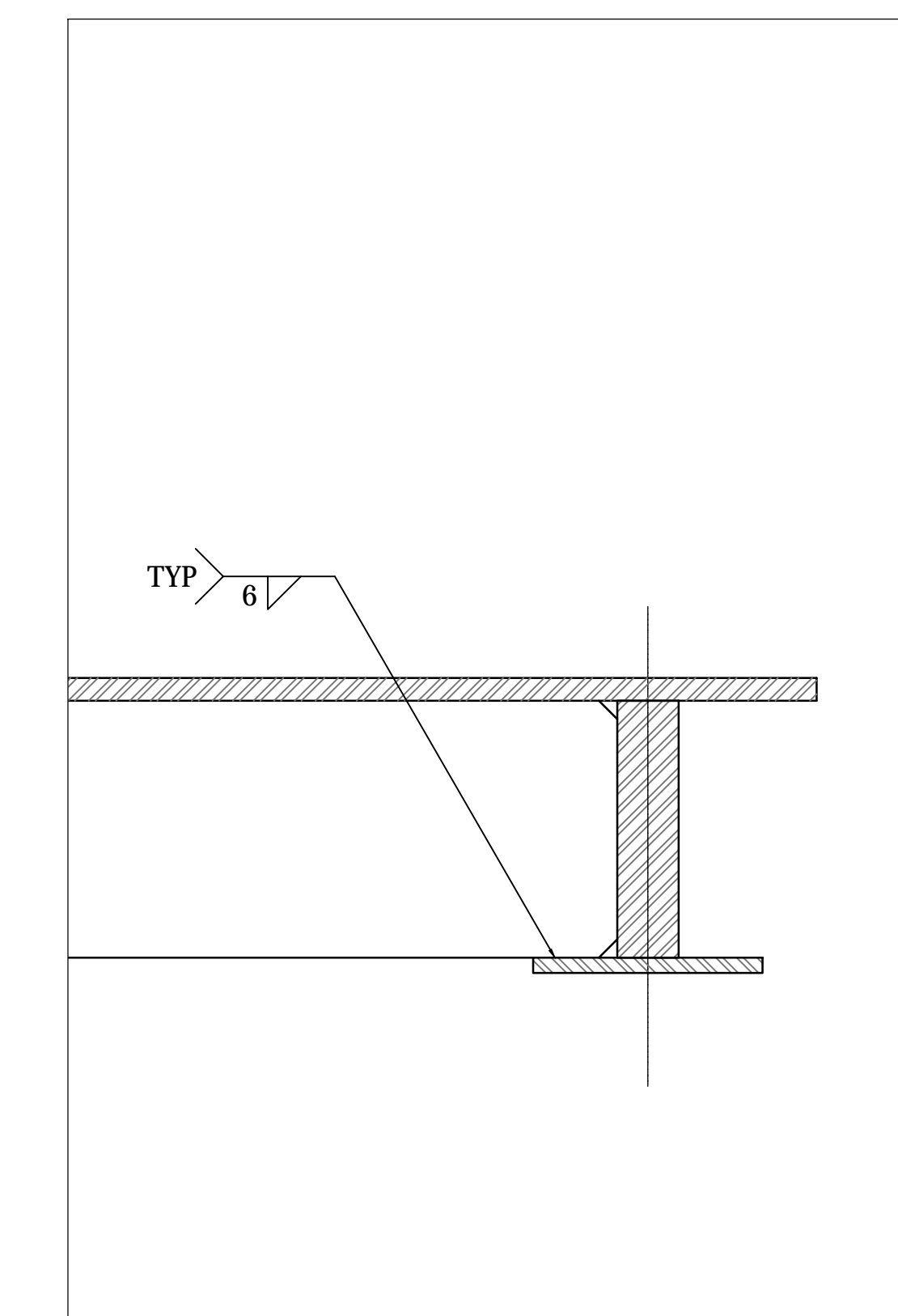
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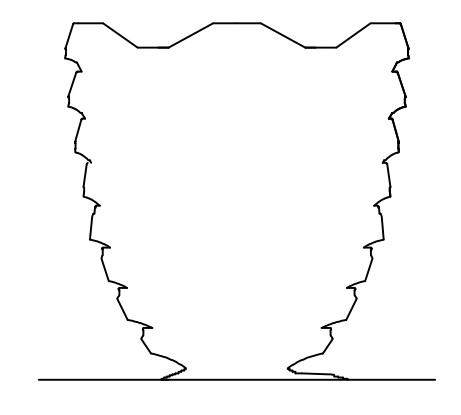
6 SECTION AT ACCESS OPENING
1:4



7 SECTION AT ACCESS OPENING
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8 SECTION AT ACCESS OPENING
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Client
Related Companies
60 Columbus Circle
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Tel: 44(0)20 7833 8800

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

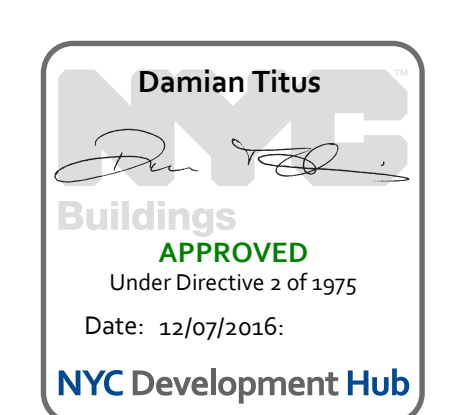
Mechanical, Electrical, Plumbing,
Fire Alarm, Fire Protection, Security
Ove Arup & Partners P.C.
77 Water Street
New York, NY 10005
Tel: 212.896.3000

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02	DOCUMENT ISSUE 02	29 APR 2014
03	DOCUMENT ISSUE 03	13 MAY 2014
04	Issue	Date

01	Issue	Date
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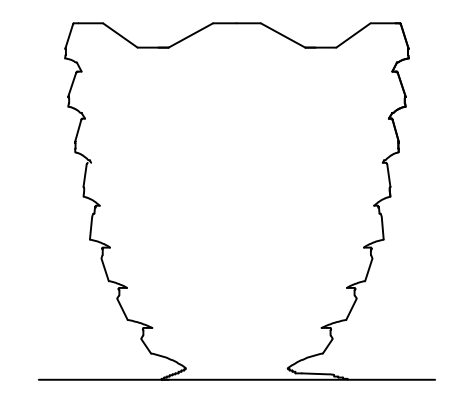
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Sheet No.	731
Sheet Number	

HYE-VS-S-502



TYPICAL SECTIONS
DETAILS III

Project Number: 03-SCM-0000000000
S-502.00



Client
 Related Companies
 60 Columbus Circle
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 New York, NY 10022
 Tel: 212.586.7514 Fax: 212.586.7510

Construction Manager
 Tishman Construction Corporation
 100 Park Avenue
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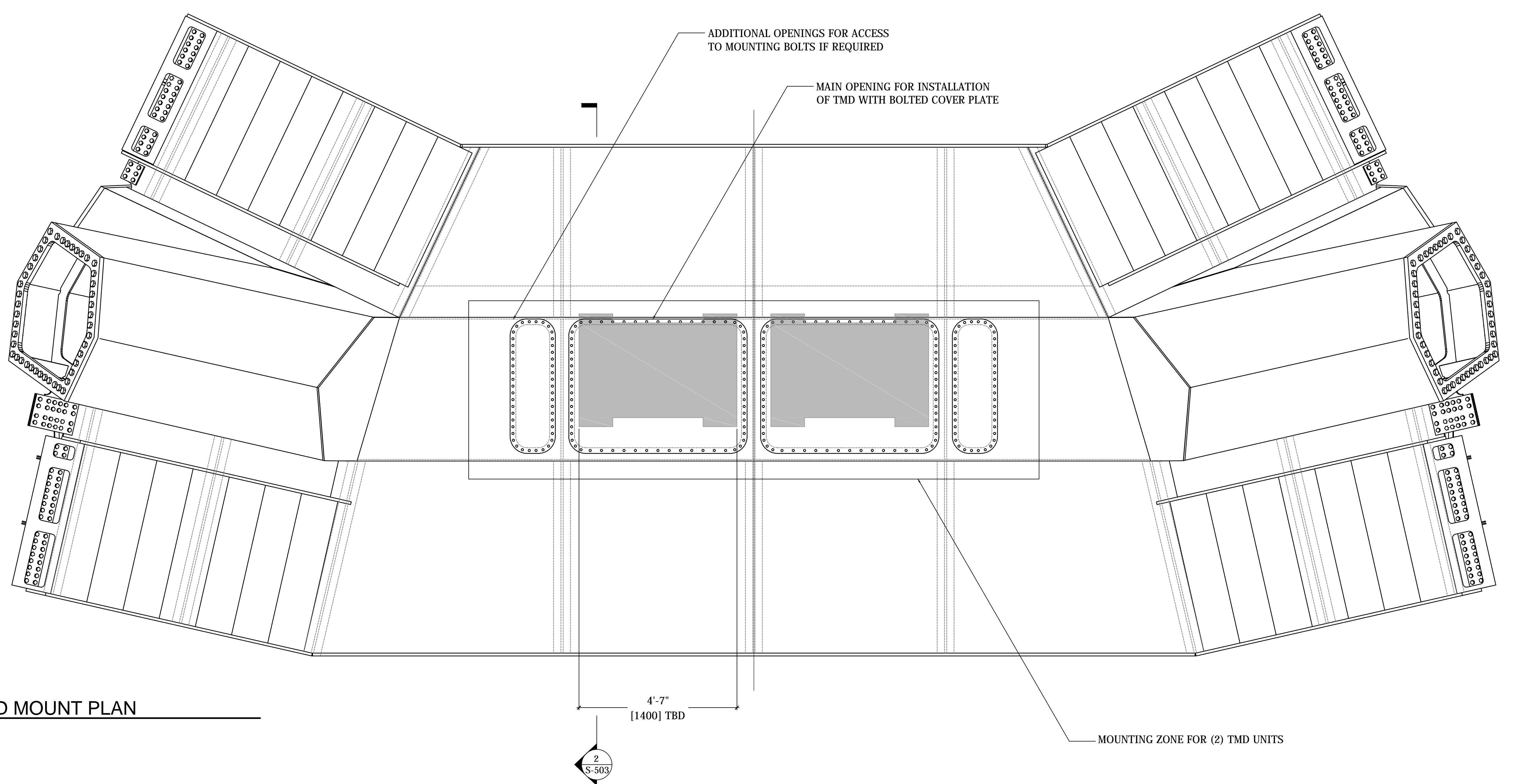
Architect
 Kohn Pedersen Fox Associates PC
 Architects & Planning Consultants
 11 West 42nd Street
 New York, NY 10036
 Tel: 212.977.6500 Fax: 212.956.2526

Design Architect
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 356-364 Gray's Inn Road
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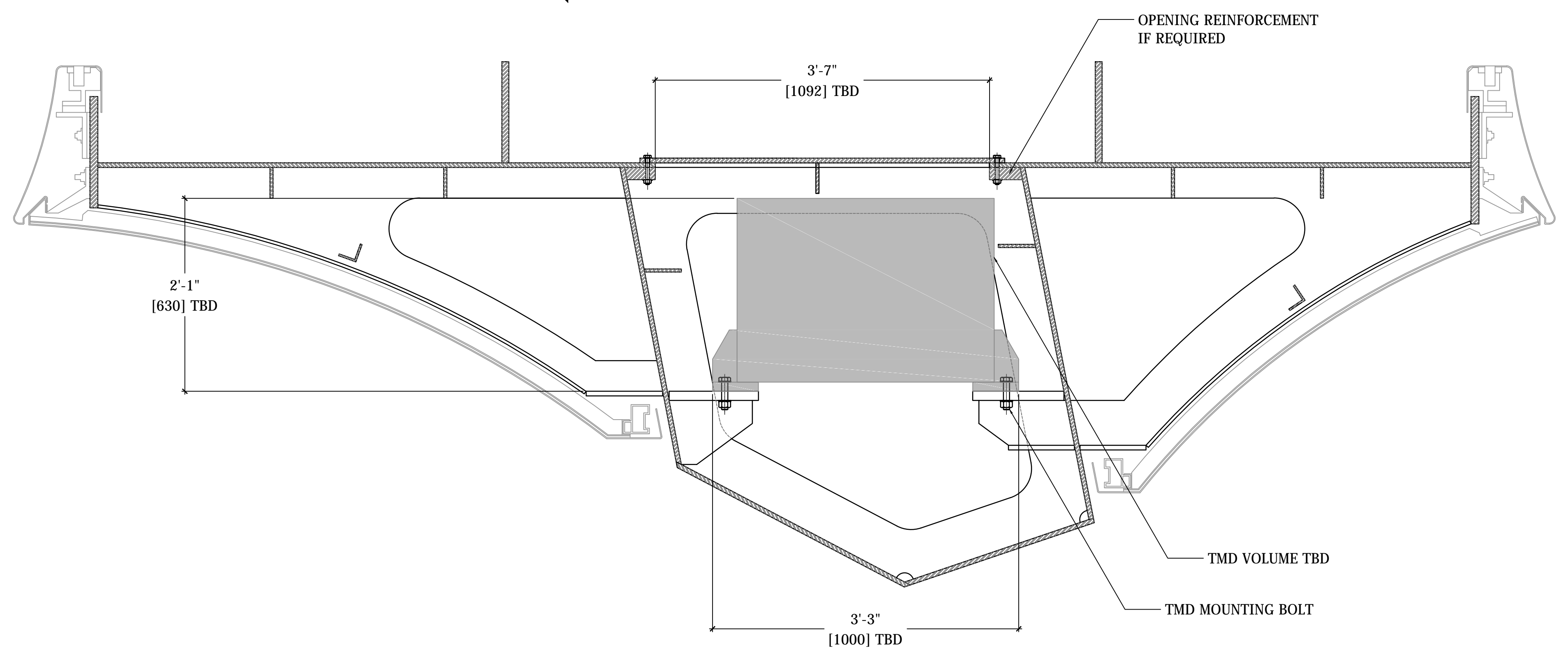
Structural Engineer
 Thornton Tomasetti, Inc.
 51 Madison Avenue
 New York, NY 10017
 Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Alarm, Fire Protection, Security
 Ove Arup & Partners P.C.
 77 Water Street
 New York, NY 10005
 Tel: 212.896.3000

NO.	DATE	DESCRIPTION
01	13MAY 2014	DOCUMENT ISSUE 01
02	29AUG 2014	DOCUMENT ISSUE 02
03	21MAR 2015	DOCUMENT ISSUE 03



1 TMD MOUNT PLAN
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2 SECTION
 1:12

NOTES:
 -THE INFORMATION ON THIS DRAWING IS PRELIMINARY AND TO BE FINALIZED BASED ON DYNAMIC SIMULATION AND AN APPROVED SET OF VIBRATION CRITERIA FOR EACH INTENDED OPERATING SCENARIOS. THE FOLLOWING PARAMETERS ARE TO BE FINALIZED:
 -NUMBER, SIZE, LOCATION AND PROPERTIES TO BE COORDINATED WITH TMD SUPPLIER
 -ACCESS OPENINGS AND REQUIRED REINFORCEMENT
 -MOUNTING DETAILS AND ACCESS FOR INSTALLATION, MAINTENANCE AND ADJUSTMENT.

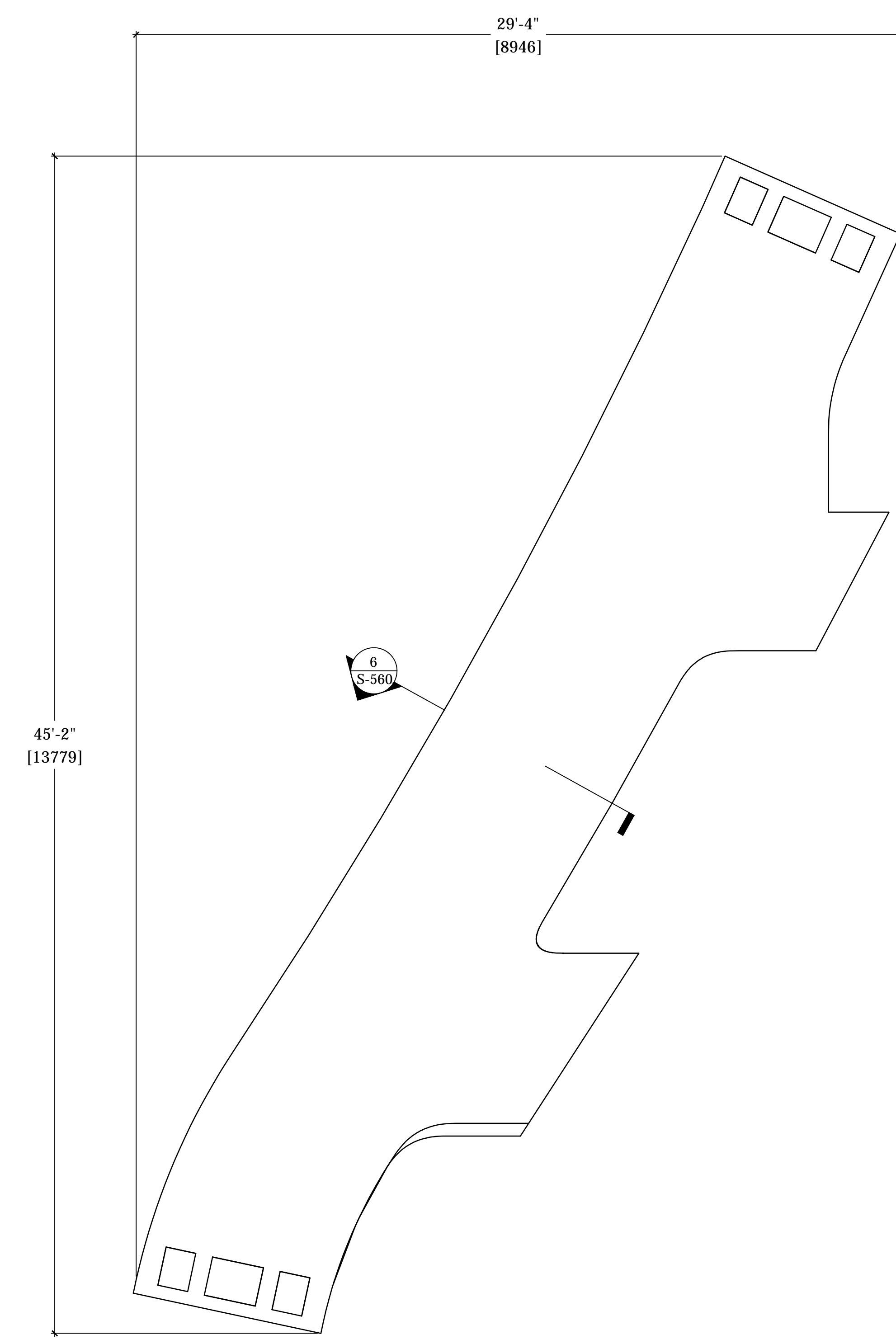
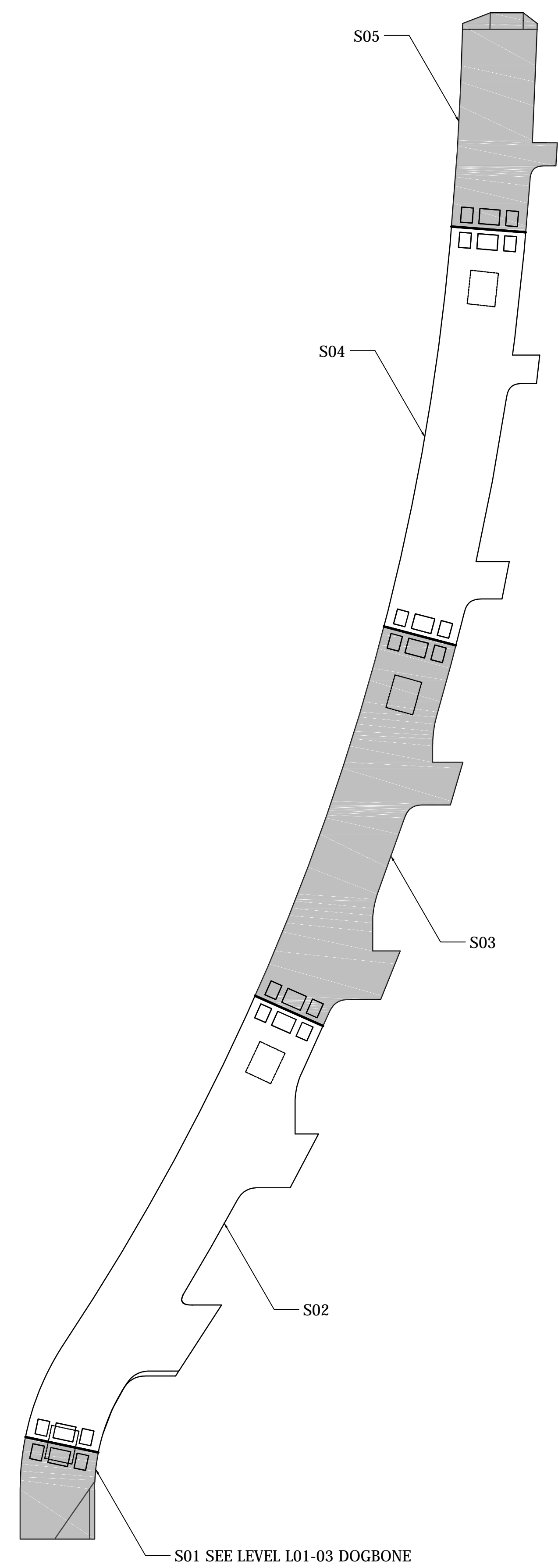
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Title: 03/23/15
 Project No: 731
 Sheet No: 731
 Drawing Title: HYE-VS-S-503

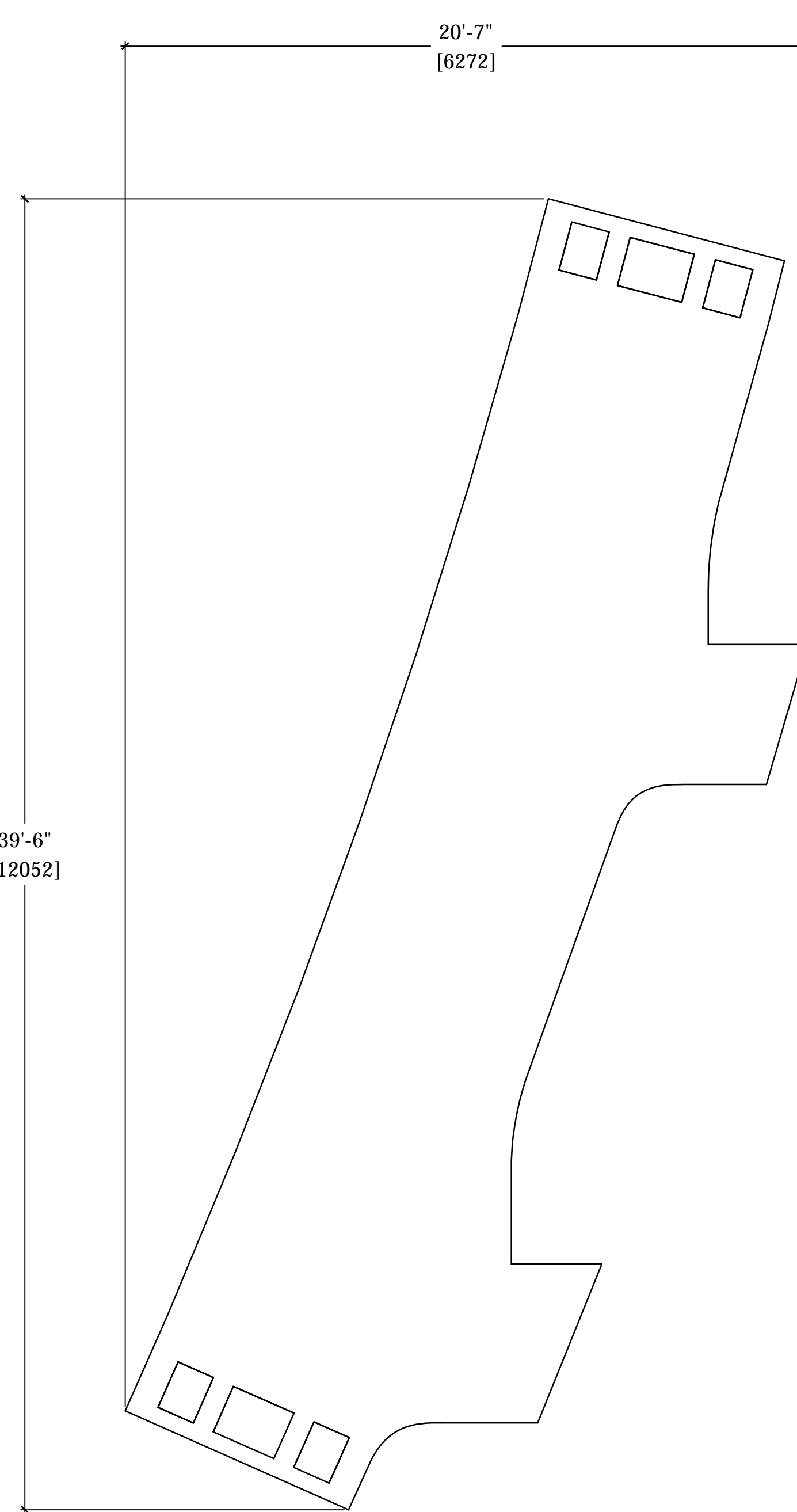
Damian Titus
 Buildings
 APPROVED
 Under Directive 2 of 1975
 Date: 12/07/2015
 NYC Development Hub

TYPICAL SECTIONS
TMD MOUNT DETAILS

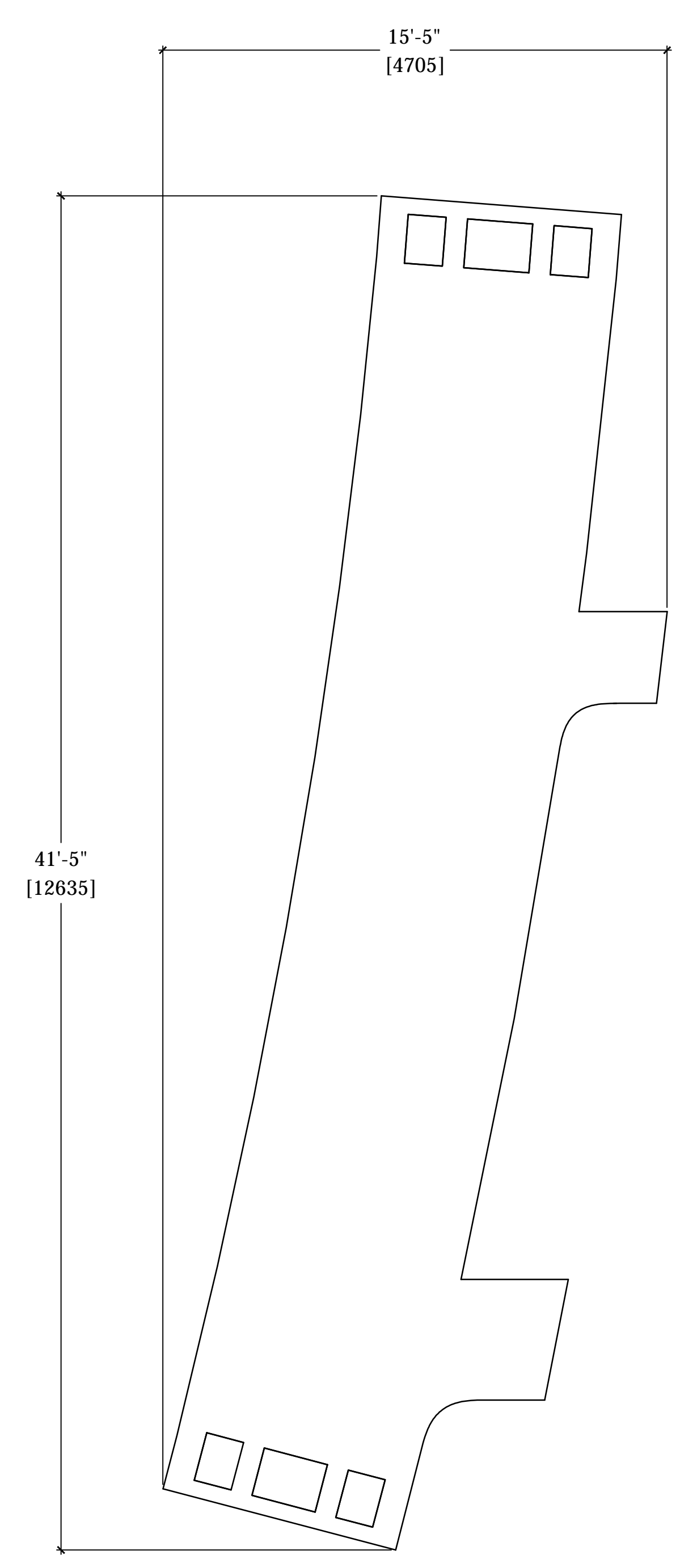
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S-503.00



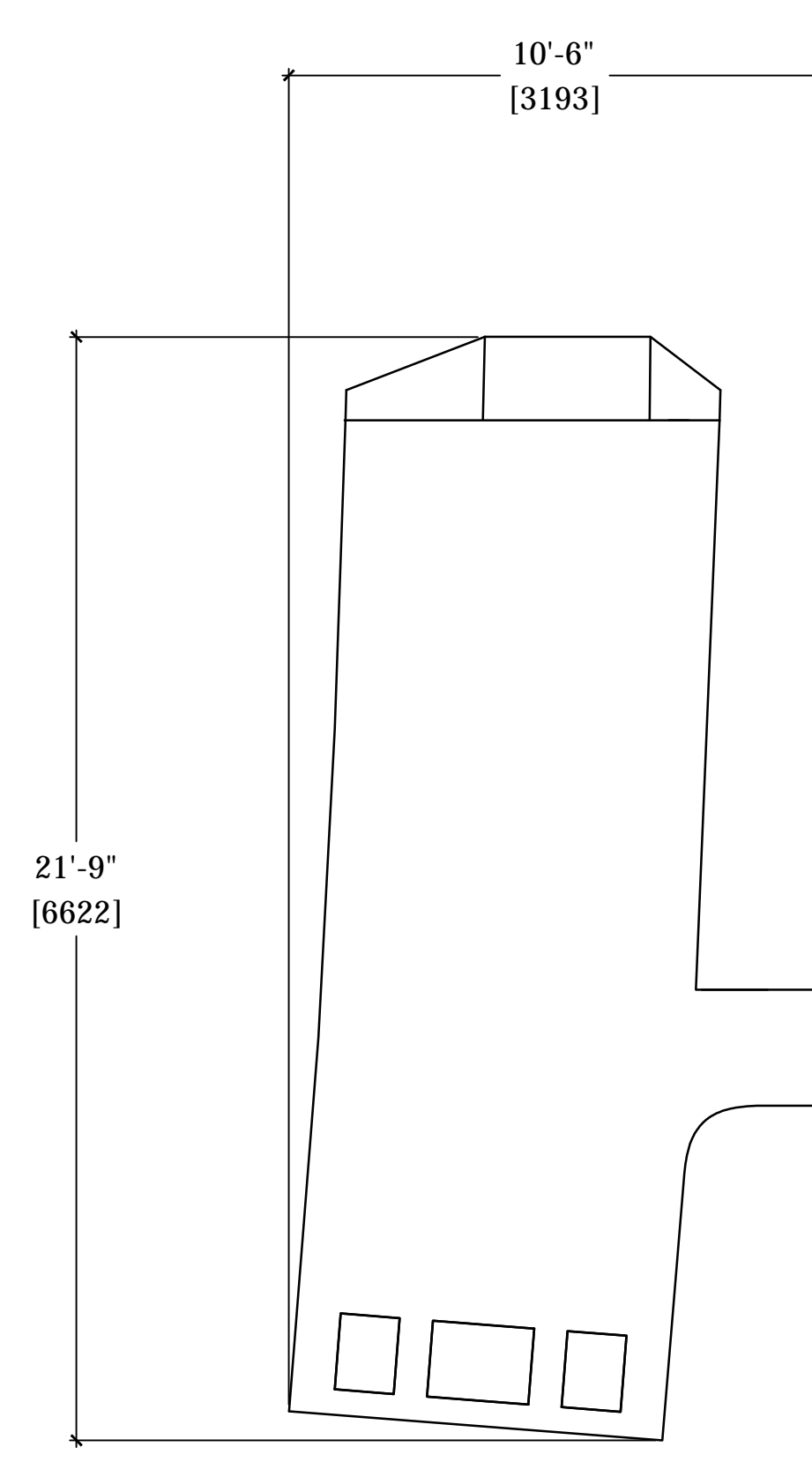
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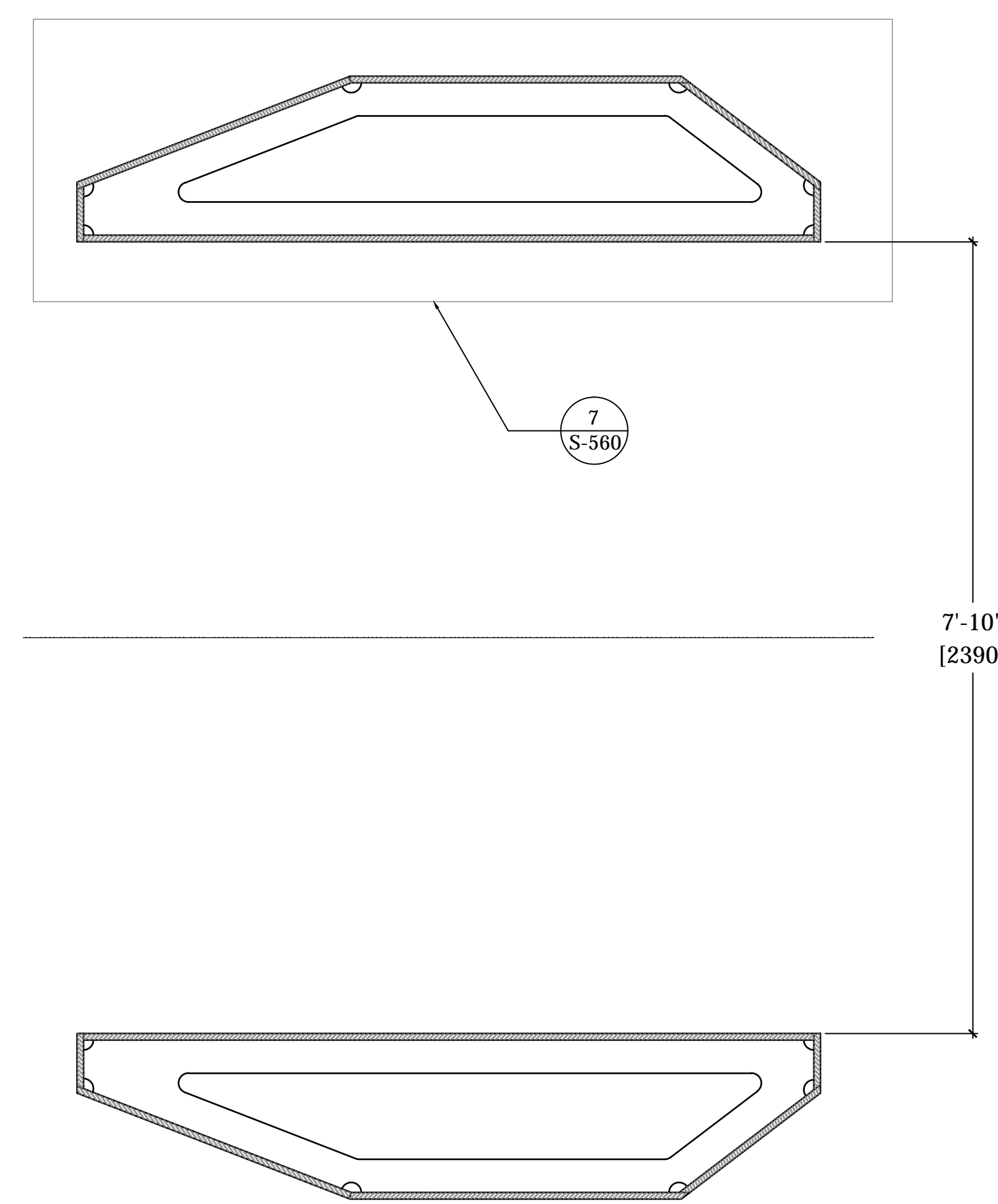


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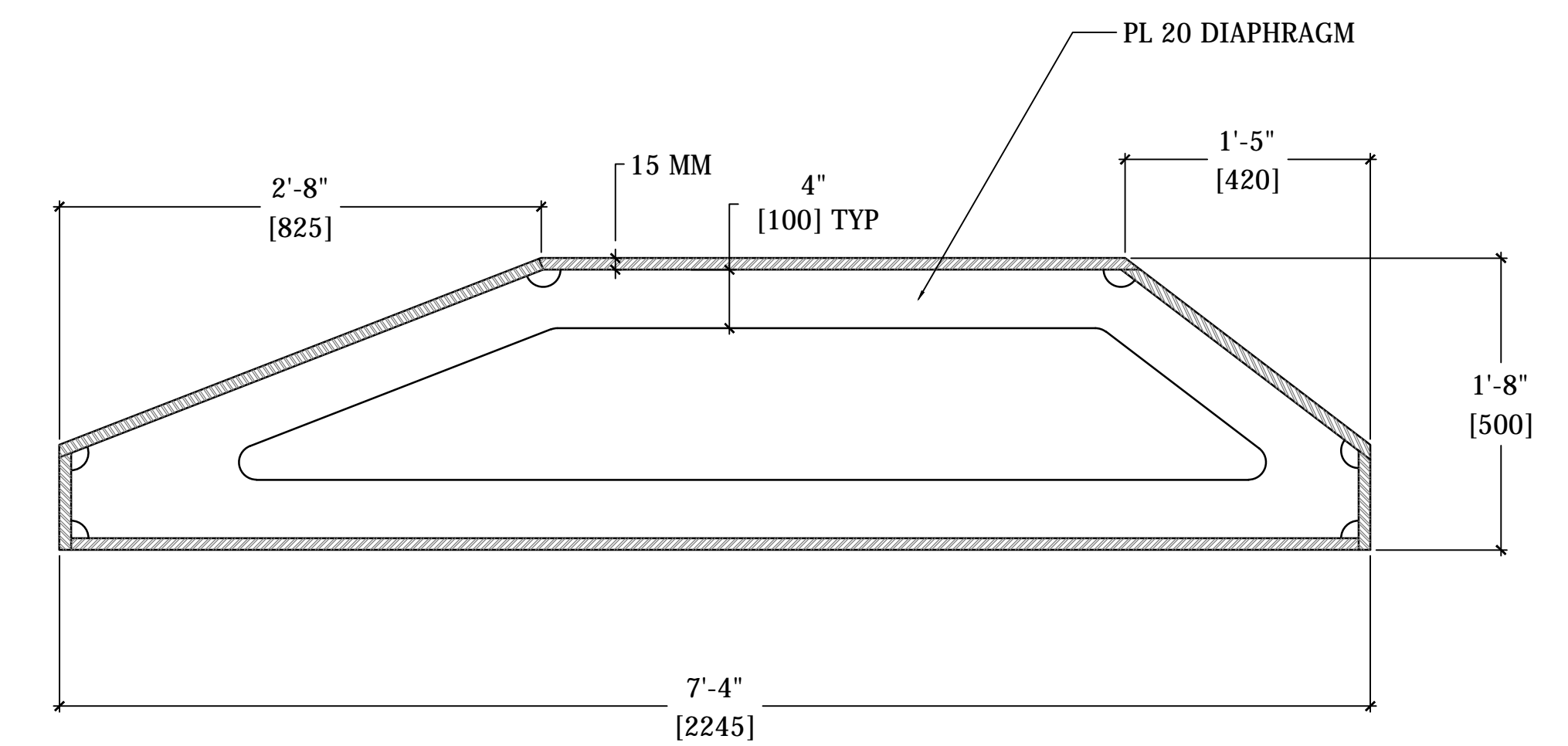


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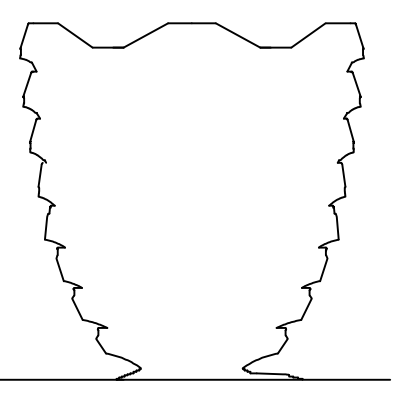
6 SECTION
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7 DETAIL
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COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL
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Damian Tjus
 Buildings
 APPROVED
 Under Directive 2 of 2015
 Date: 12/07/2016
 NYC Development Hub



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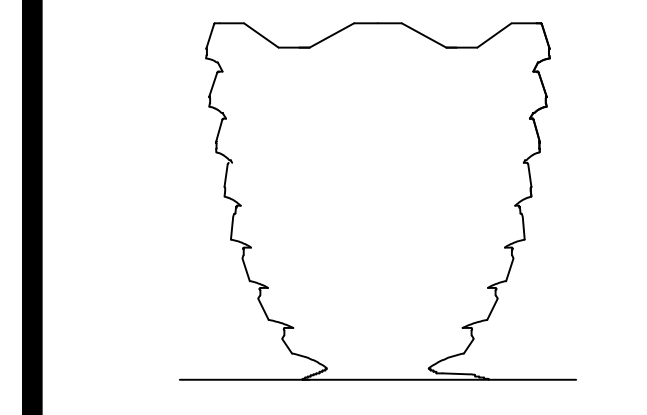
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01	DOCUMENT ISSUE 01	13 MAY 2014
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Rev Print

Title: 03/23/15
 Project No: 731
 Sheet No:
 Drawing Title:
 HYE-VS-S-560

SPINE DETAILS SHEET 1

Project Number: 03-CAD Drawing Number
S-560.00



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New York, NY 10005
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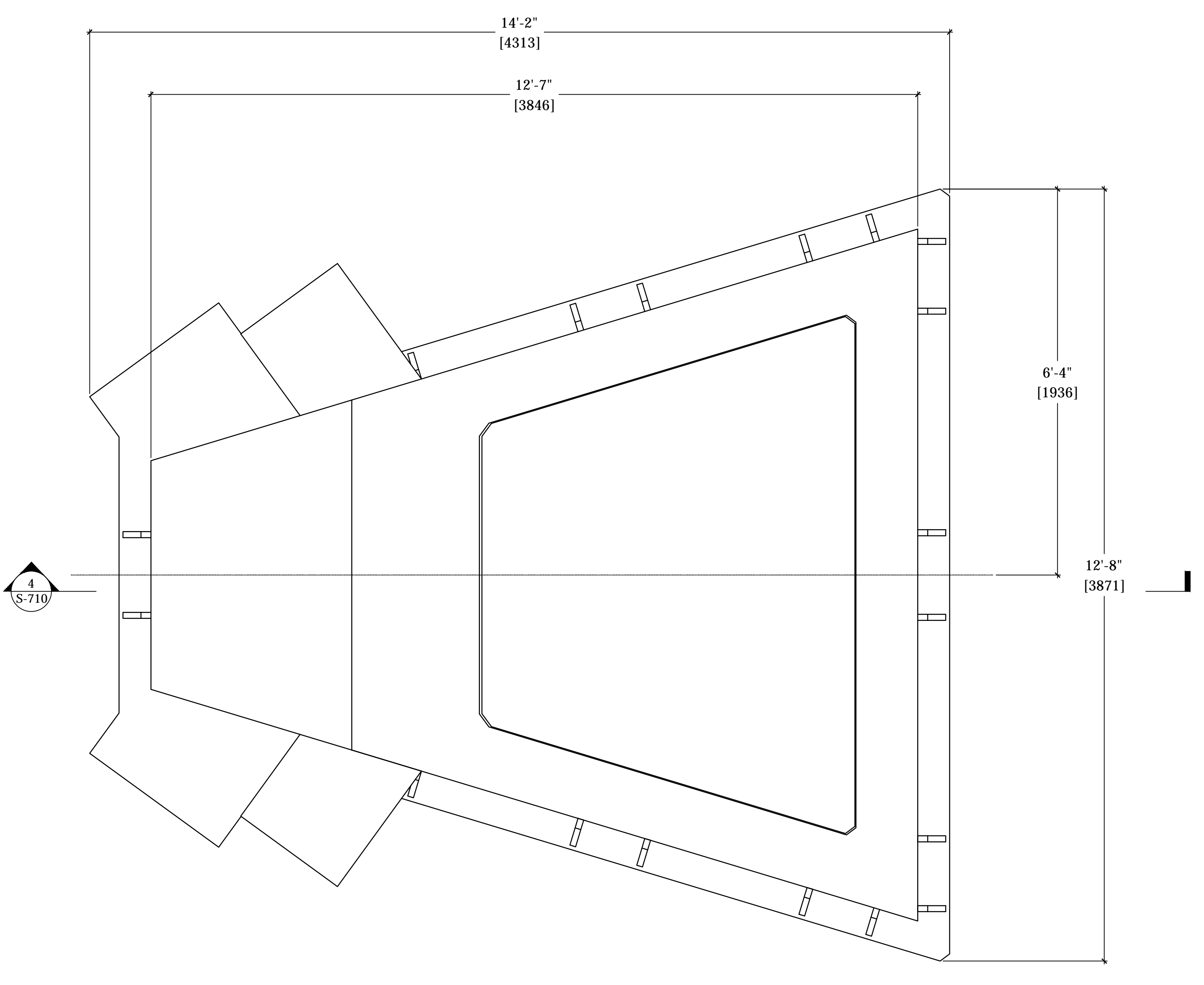
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01	DOCUMENT ISSUE 01	13 MAY 2014
02	DOCUMENT ISSUE 02	29 AUG 2014
03	DOCUMENT ISSUE 03	13 MAY 2014
04	Issue	Date

Key Plan

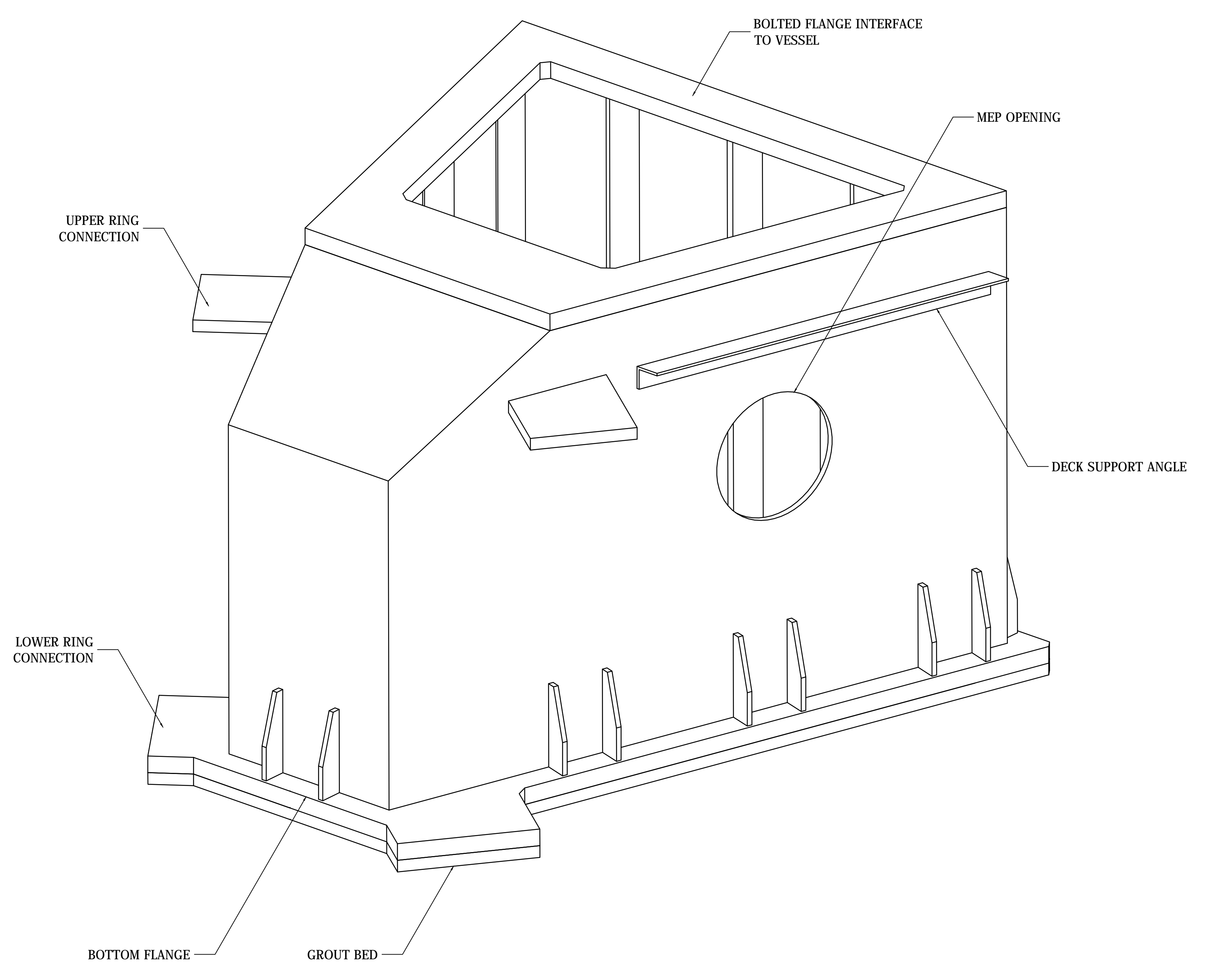
Title: 03/23/15
Project No: 731
Sheet No: 731
Drawing Title: HYE-VS-S-710

STANDARD BASE
GENERAL ARRANGEMENT

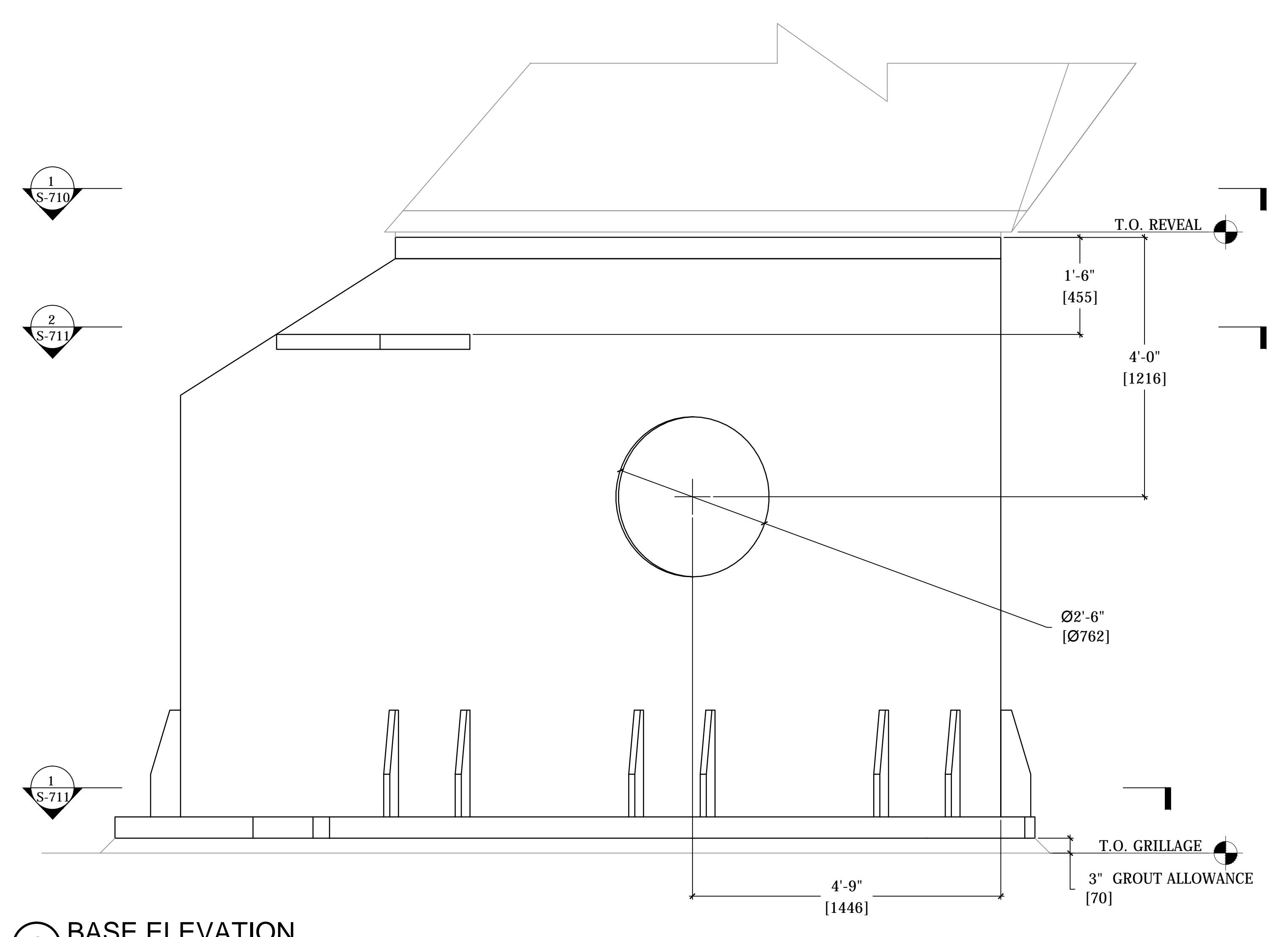
Project Number / B-COM Drawing Number
S-710.00



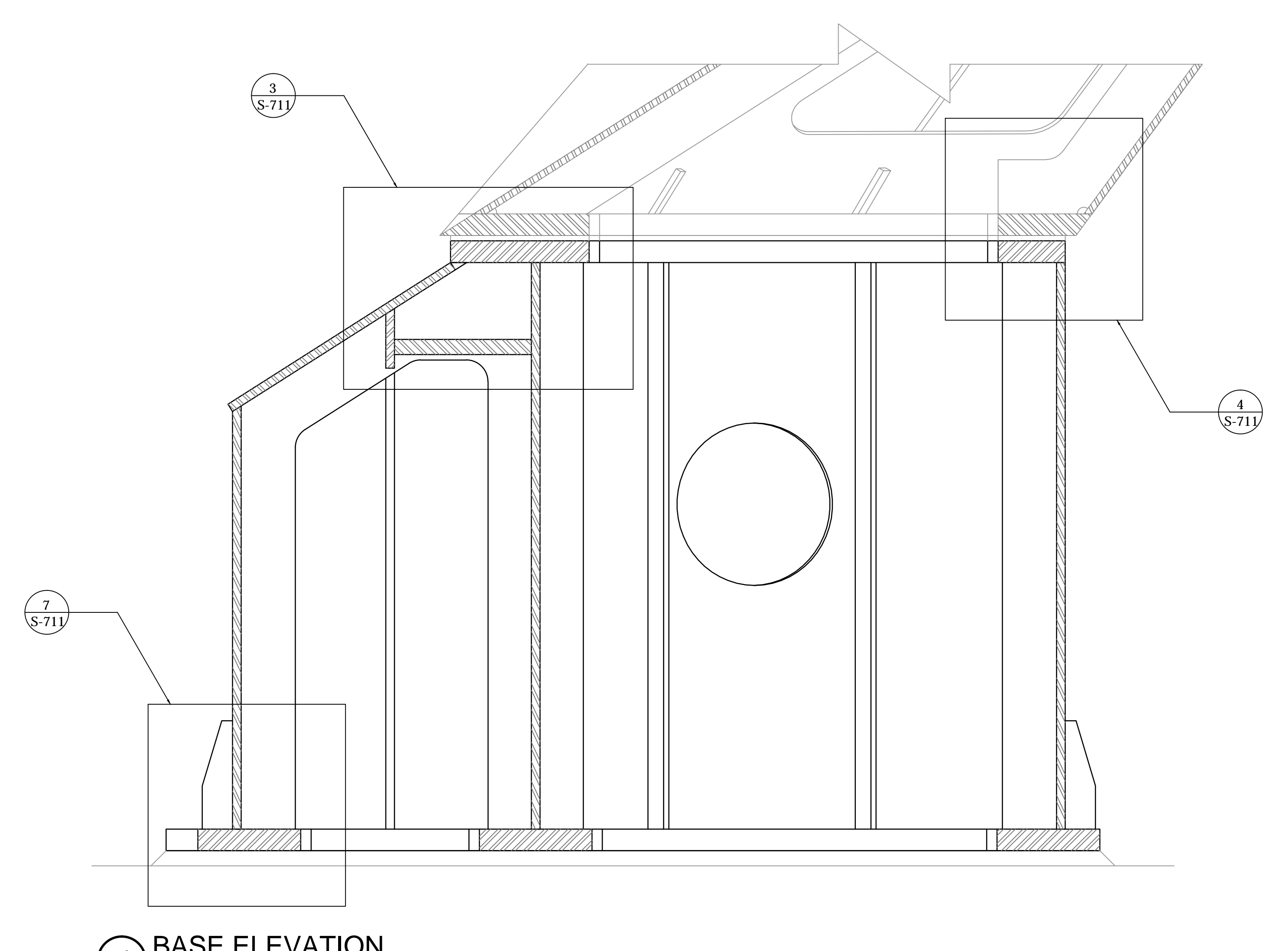
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1:15



2 AXONOMETRIC



3 BASE ELEVATION
1:15



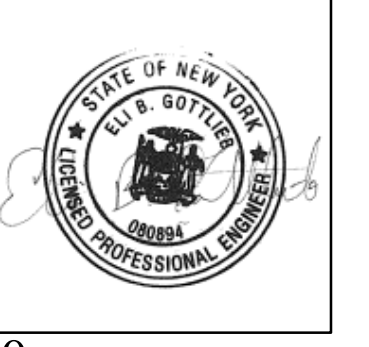
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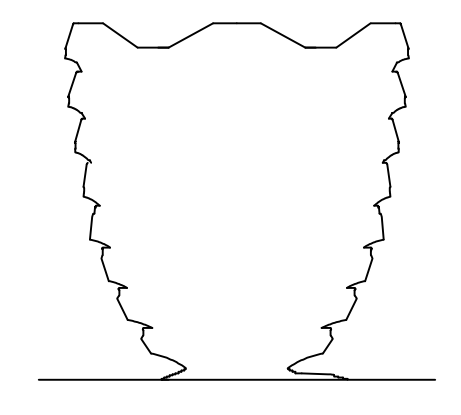
COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

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APPROVED
Under Directive of 1975
Date: 12/07/2015
NYC Development Hub





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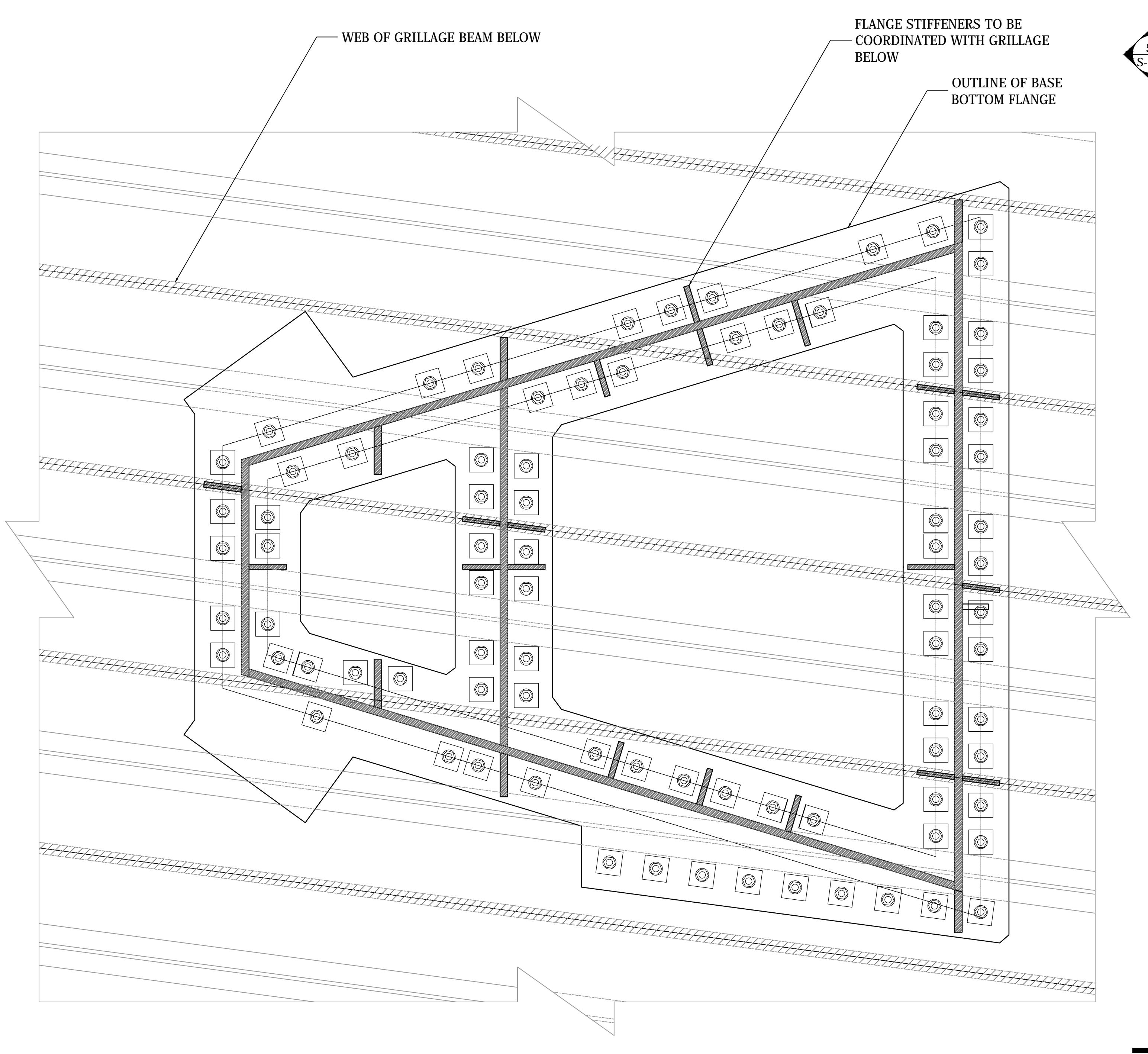
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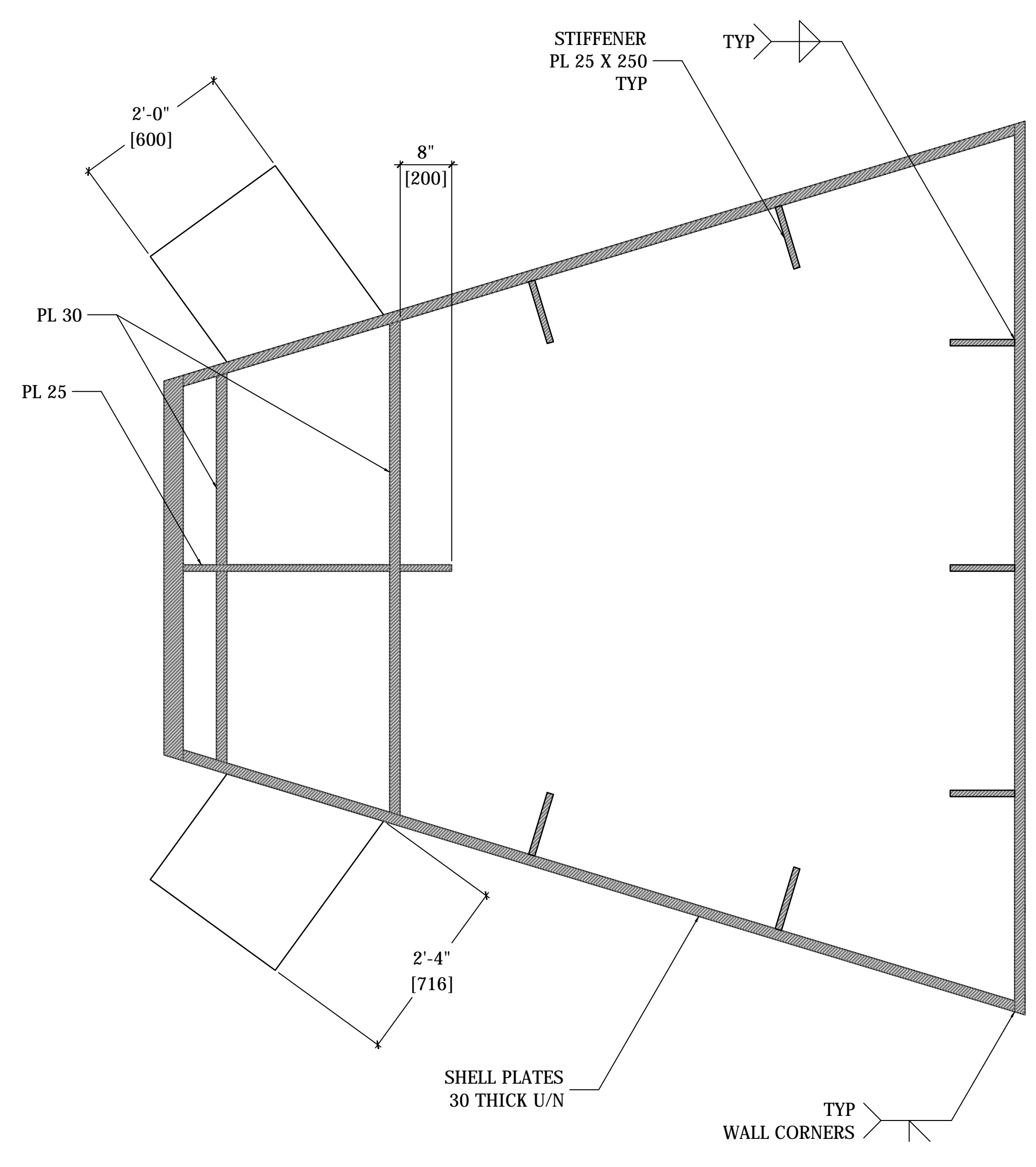
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77 Water Street
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02	DOCUMENT ISSUE 02	29 AUG 2014
01	DOCUMENT ISSUE 01	13 MAY 2014
00	Issue	Issue

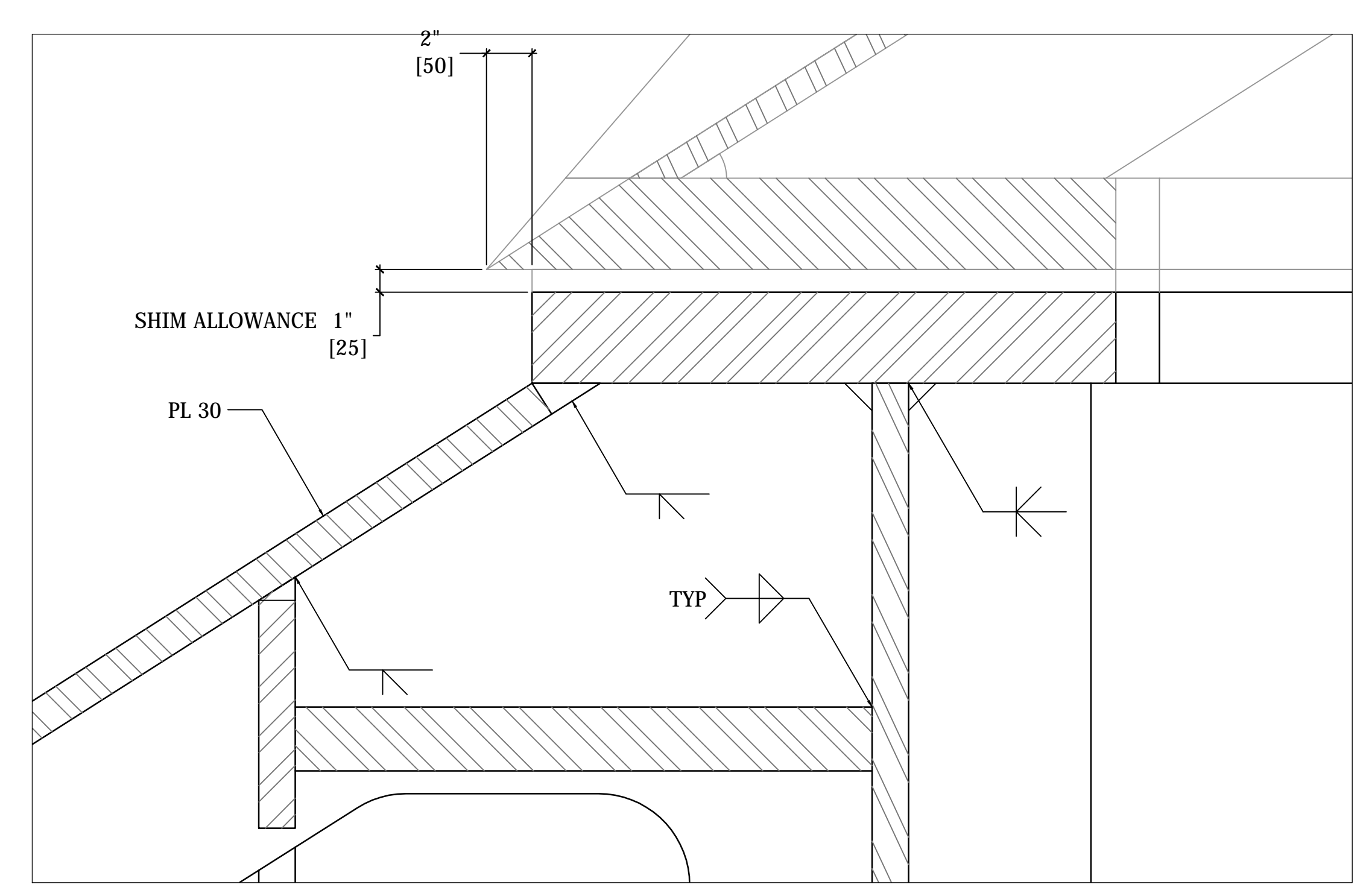
Key Plan



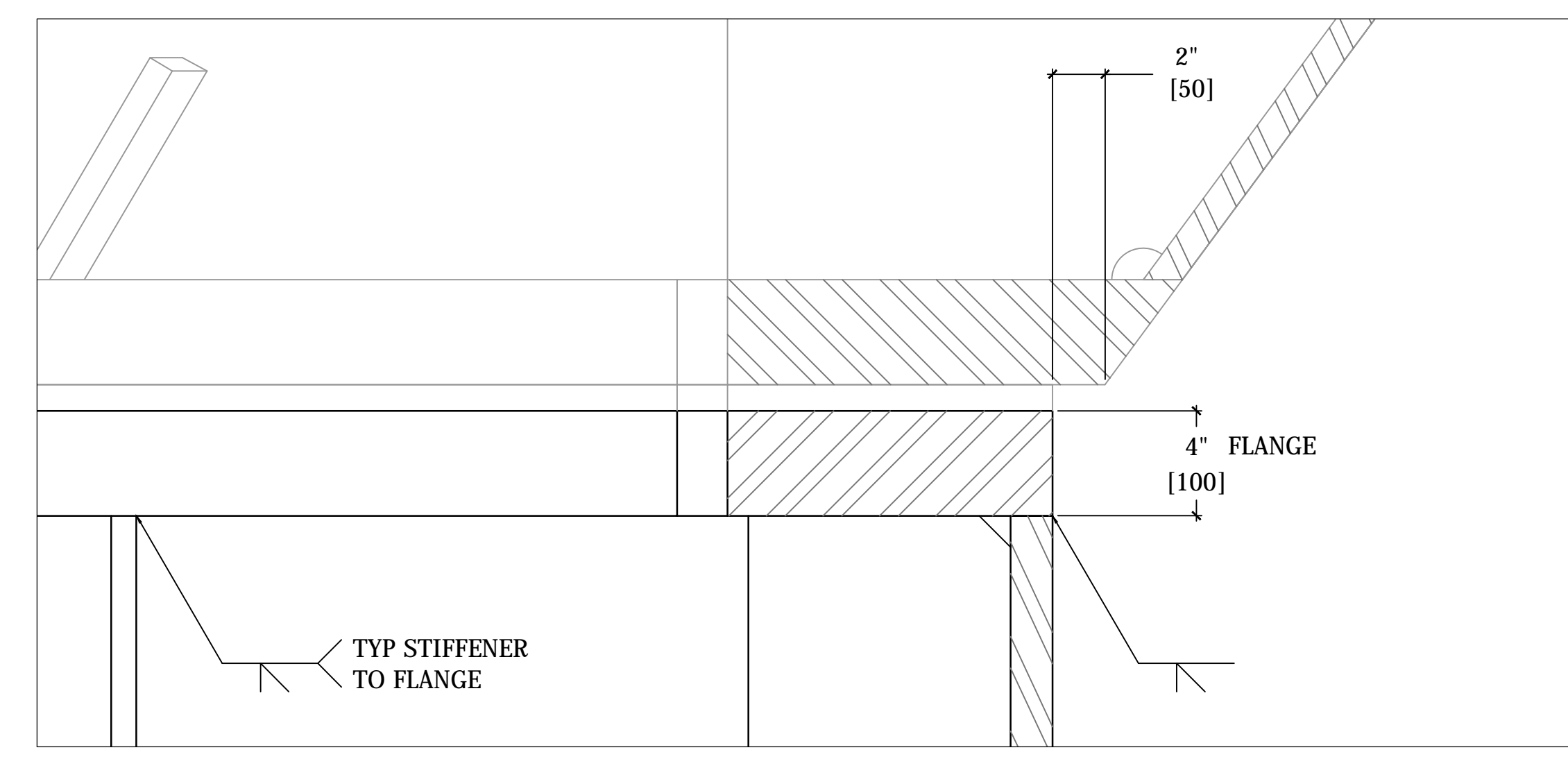
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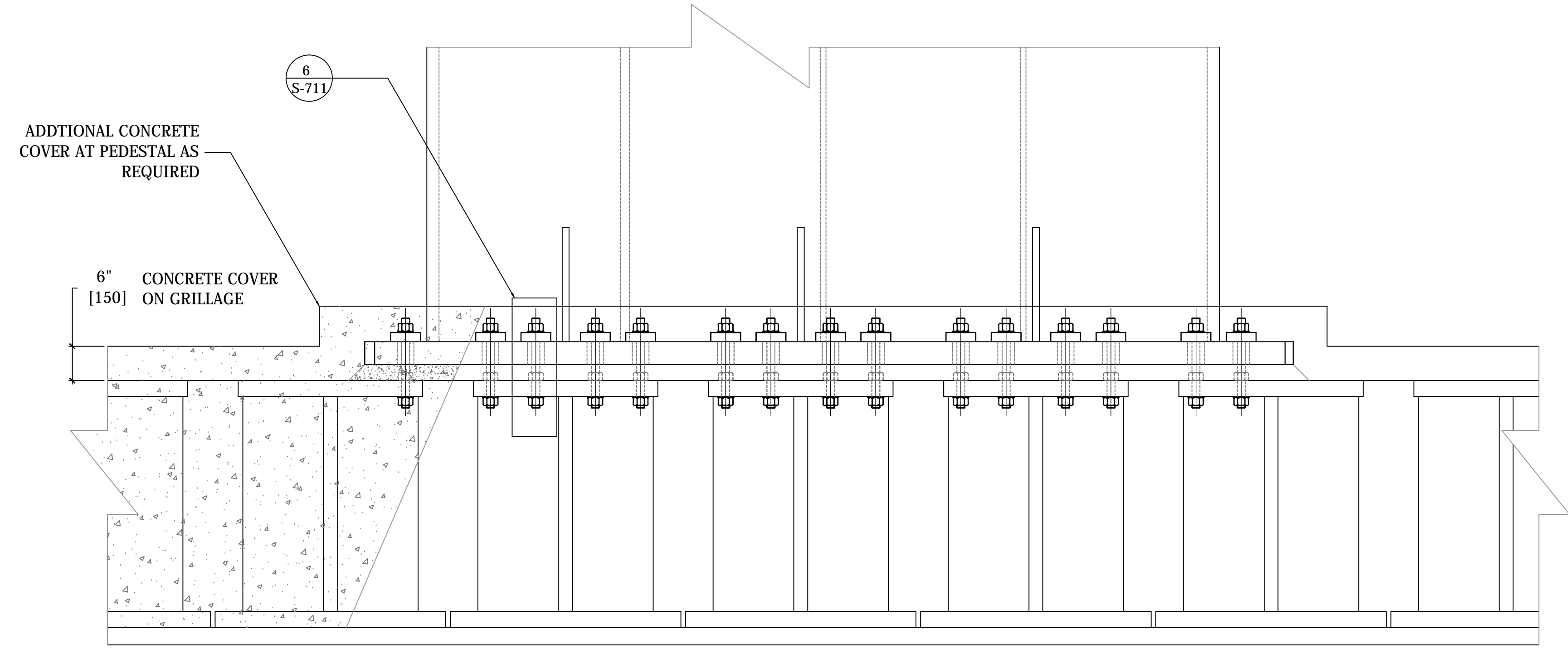
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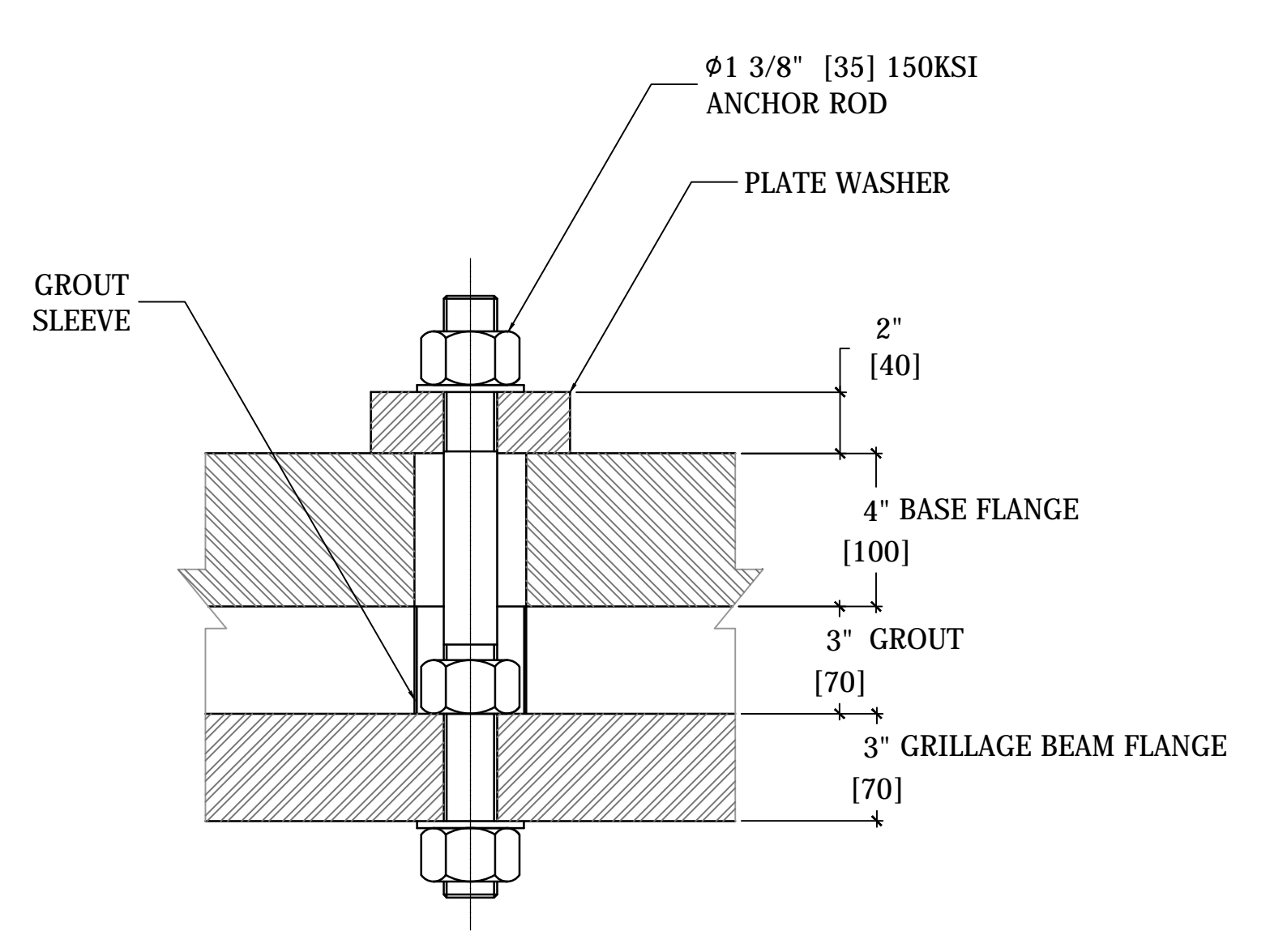
3 DETAIL
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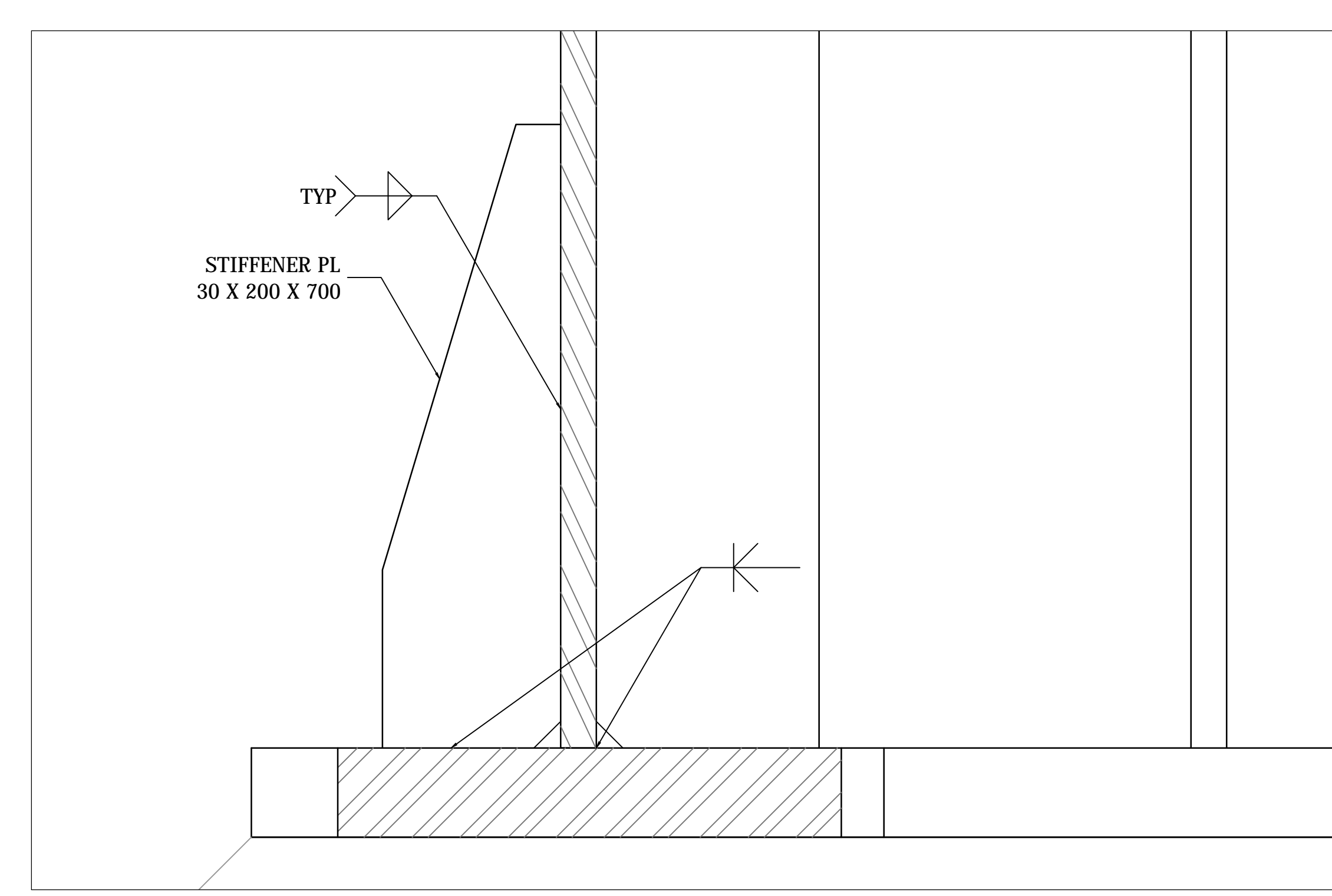
4 DETAIL
1:5



5 SECTION
1:15



6 DETAIL
1:4



7 DETAIL
1:5

COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

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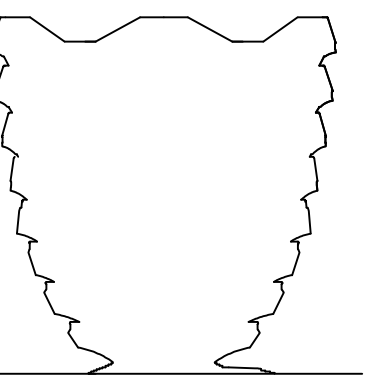
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APPROVED
Under Directive 9 of 1975
Date: 12/22/2015
NYC Development Hub

Title: 03/23/15
Project No: 731
Drawn By:
Sheet Number:
HYE-VS-S-711
Drawing Title

STANDARD BASE DETAILS

Project Number / BIDDING Drawing Number
S-711.00



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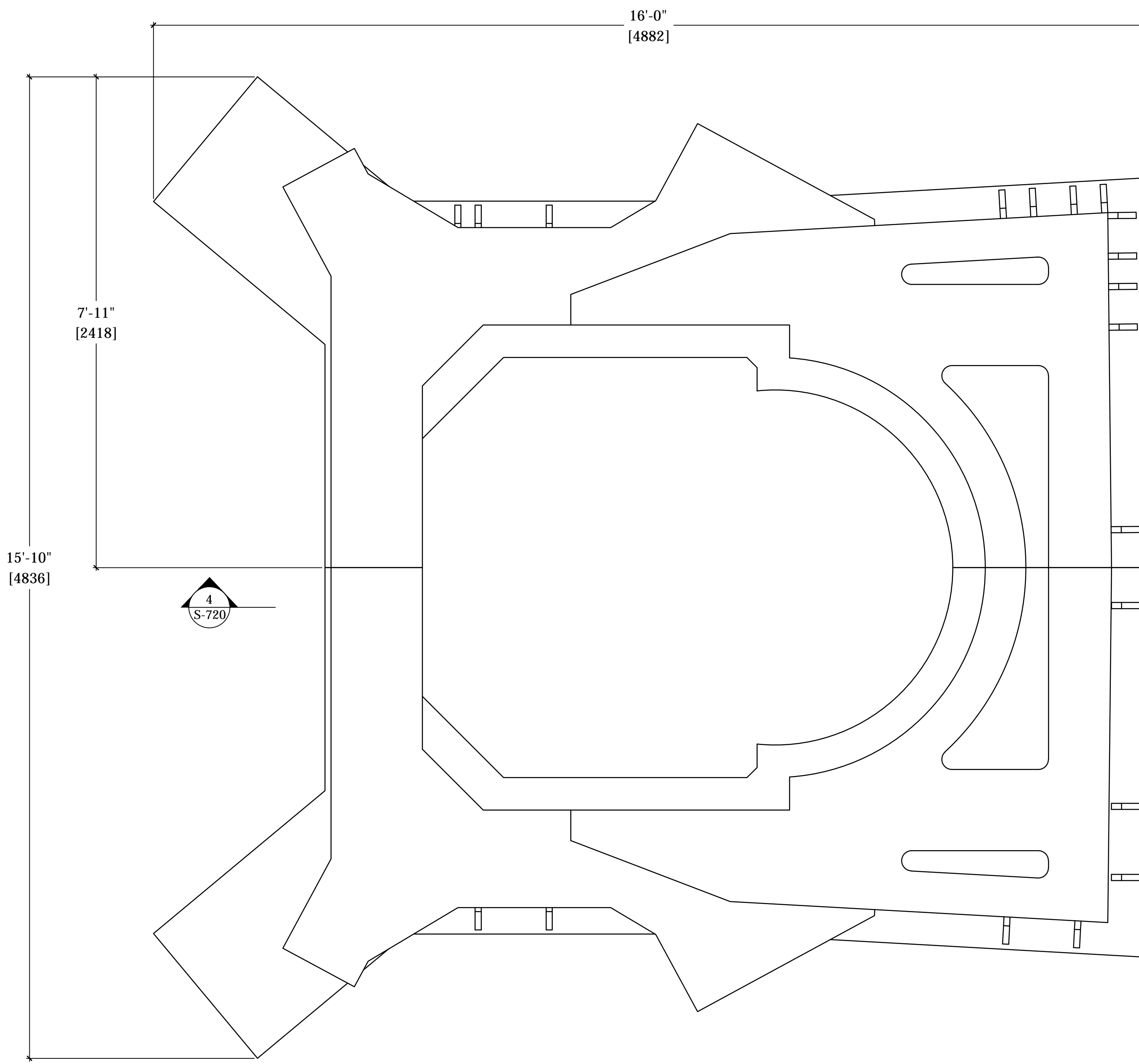
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Architects & Planning Consultants
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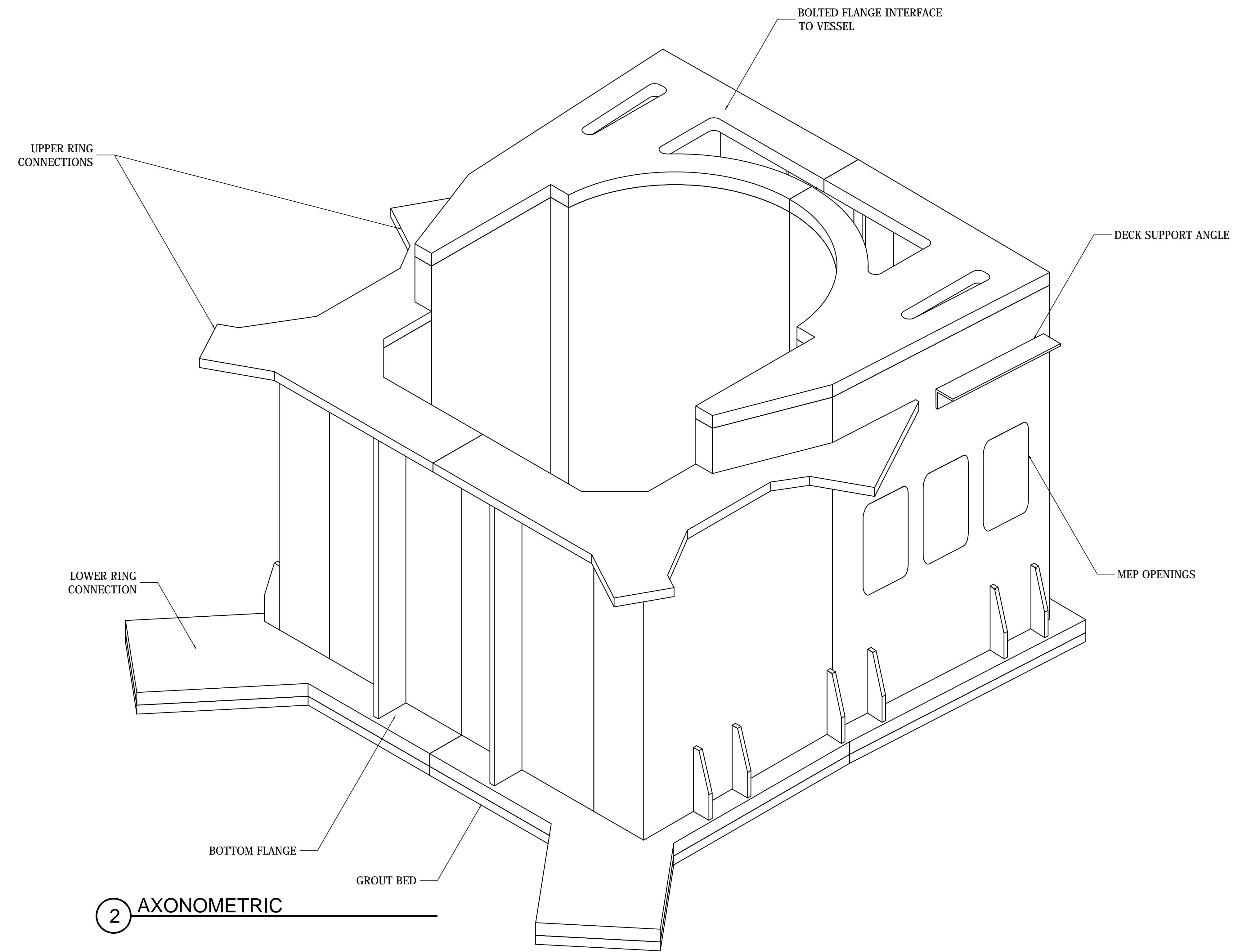
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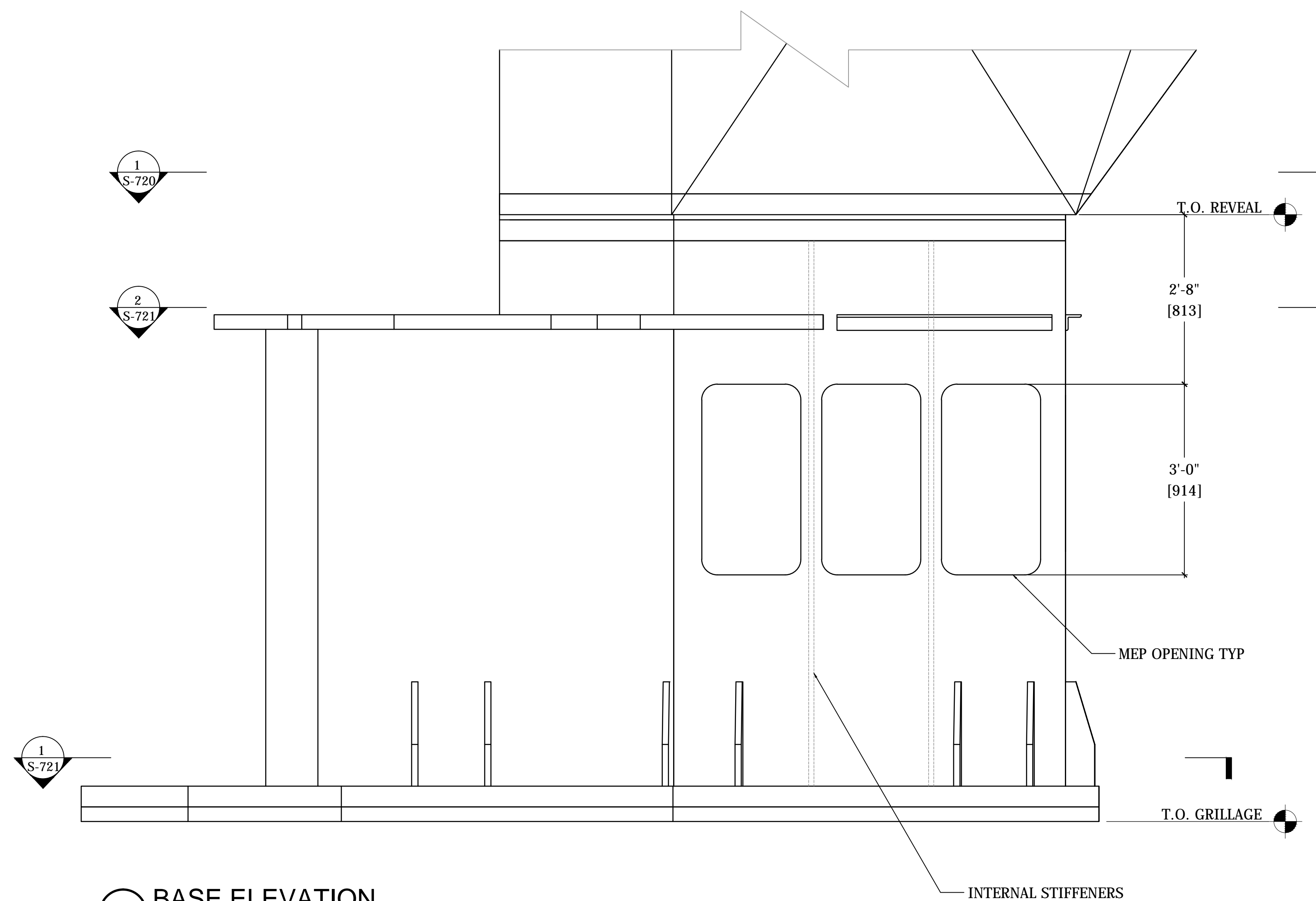
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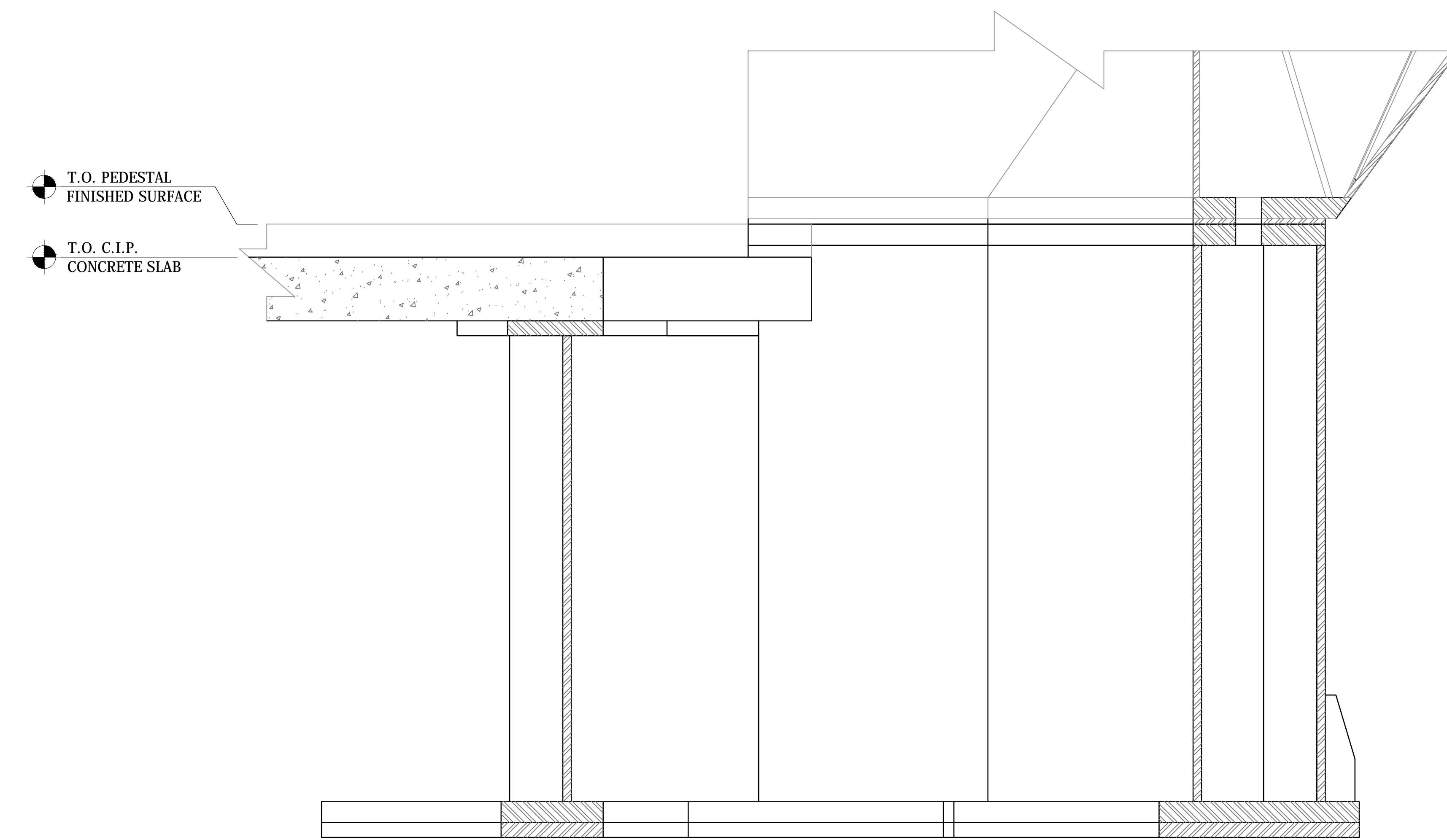
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1:15



2 AXONOMETRIC



3 BASE ELEVATION
1:15



4 BASE ELEVATION
1:15

COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

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Rev	Issue	Date
01	DOCUMENT ISSUE 01	13 MAY 2014
02	DOCUMENT ISSUE 02	29 AUG 2014
03	DOCUMENT ISSUE 03	23 MAR 2015

Rev: Issue Date

Title: 03/23/15

Project No: 731

Sheet No: HYE-VS-S-720

Drawing Title

SPINE BASE
GENERAL ARRANGEMENT

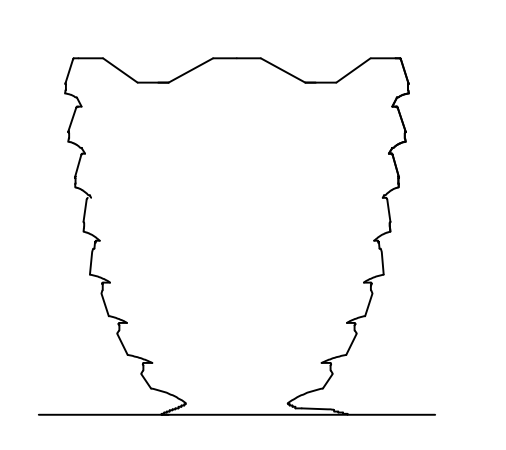
Project Number / B-CAD Drawing Number

S-720.00



HUDSON YARDS VESSEL

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NEW YORK, NY



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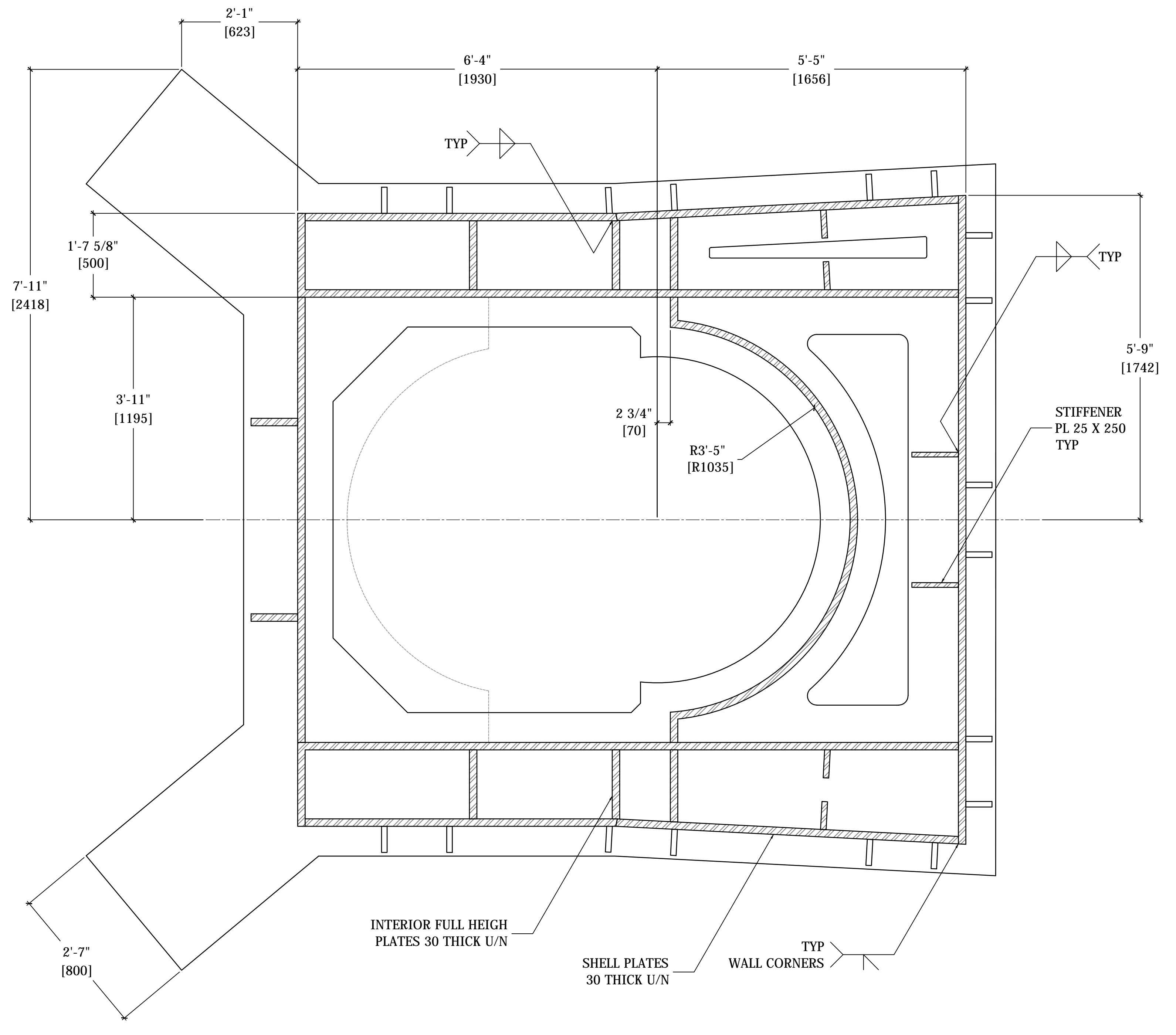
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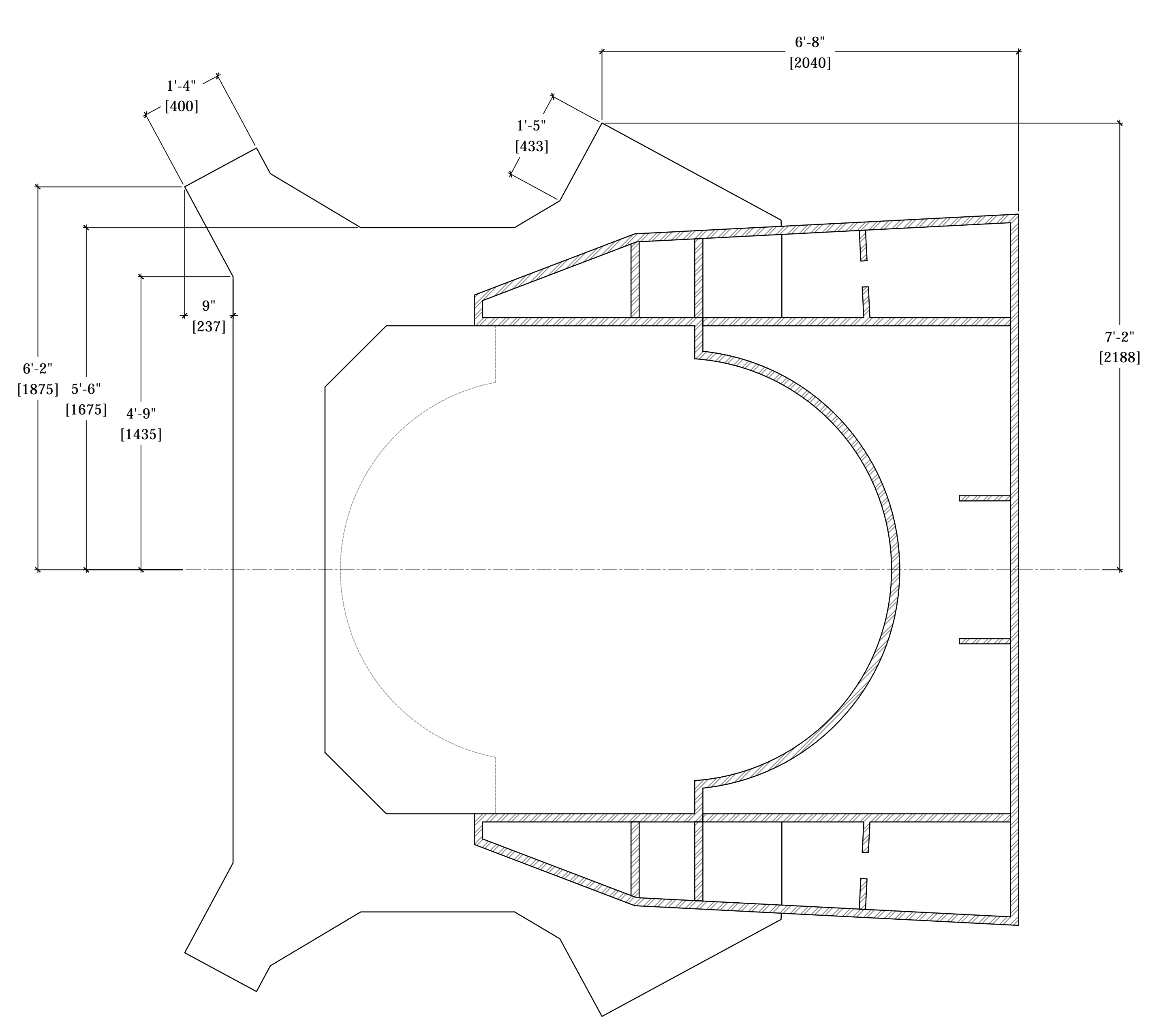
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1 SECTION
1:15



2 SECTION
1:15

NO.	DATE	DESCRIPTION
01	15 MAY 2014	DOCUMENT ISSUE 01
02	29 AUG 2014	DOCUMENT ISSUE 02
03	23 MAR 2015	DOCUMENT ISSUE 03
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COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

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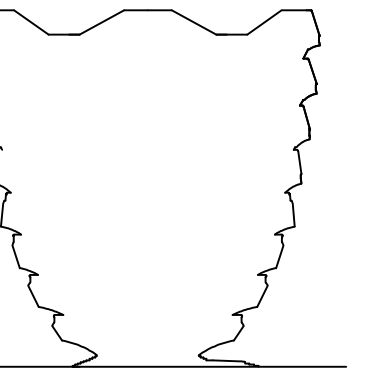
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Date: 12/07/2015

Damian Titus
NYC Development Hub

Title: 03/23/15
Project No: 731
Sheet No: HYE-VS-S-721
Drawing Title: SPINE BASE DETAILS
Professional Engineer Seal: [Seal]

NYC Development Hub

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New York, NY 10005
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ASSUMED TONNAGE IS 2300-2500T (METRIC).
DETAILED BREAKDOWN BASED ON AN AVERAGE OF 2400T (METRIC) SHOWN BELOW.

Breakdown by Level

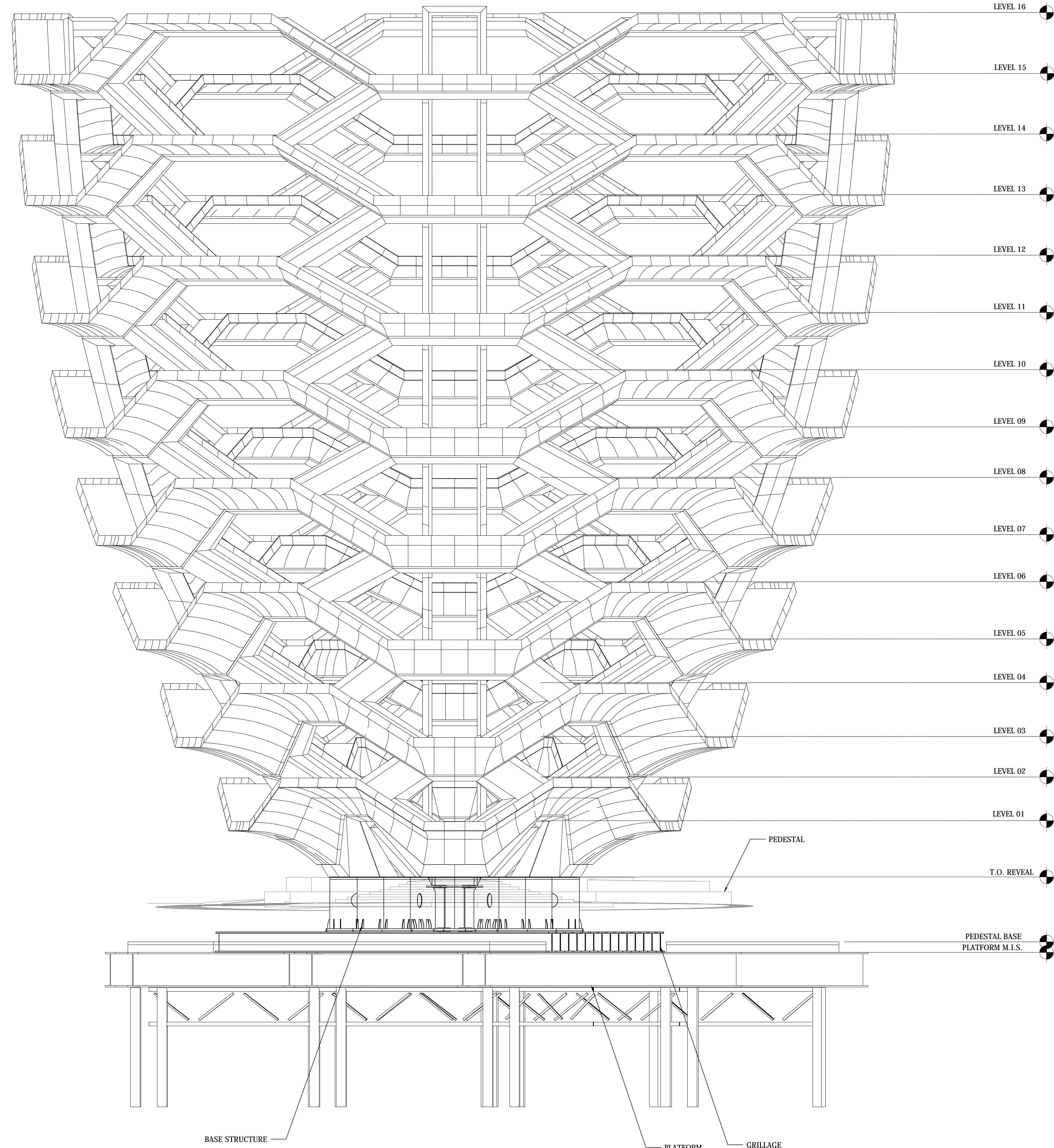
Level	Metric Tons	Imperial Tons
16	35	39
15	100	110
14	130	143
13	150	165
12	135	149
11	160	176
10	145	160
9	170	187
8	140	154
7	170	187
6	140	154
5	190	209
4	145	160
3	185	204
2	155	171
1	250	275
Total	2400	2640

Breakdown by Plate

Primary Plates	Metric Tons	Imperial Tons
10mm	65	72
12mm	315	347
15mm	730	803
20mm	280	308
25mm	160	176
Stiffeners/Diaphragms (8mm)	225	248
Soffit support (8-15mm)	125	138
Splices	500	550
Total	2400	2640

Vessel Pedestal

Base	180	200
Elevator Support Steel	15	17
Grillage	630	695



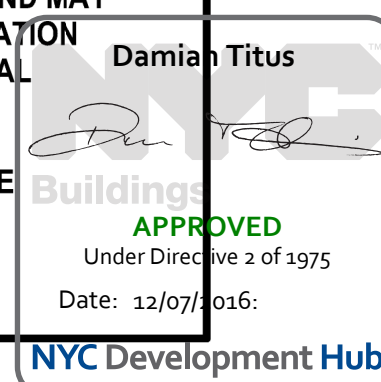
1 ELEVATION
1:100

COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

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ALL STEEL GRADE 50 U.O.N.



Date: 03/23/15

Project No.: 731

Sheet No.:

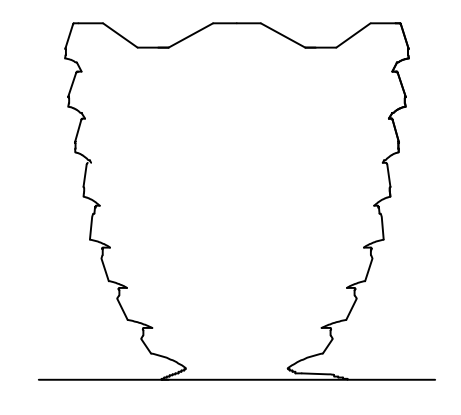
HYE-VS-S-800

Issued For:

TONNAGE BREAKDOWN

Drawing Number: 18-SCAD-Project Number

S-800.00



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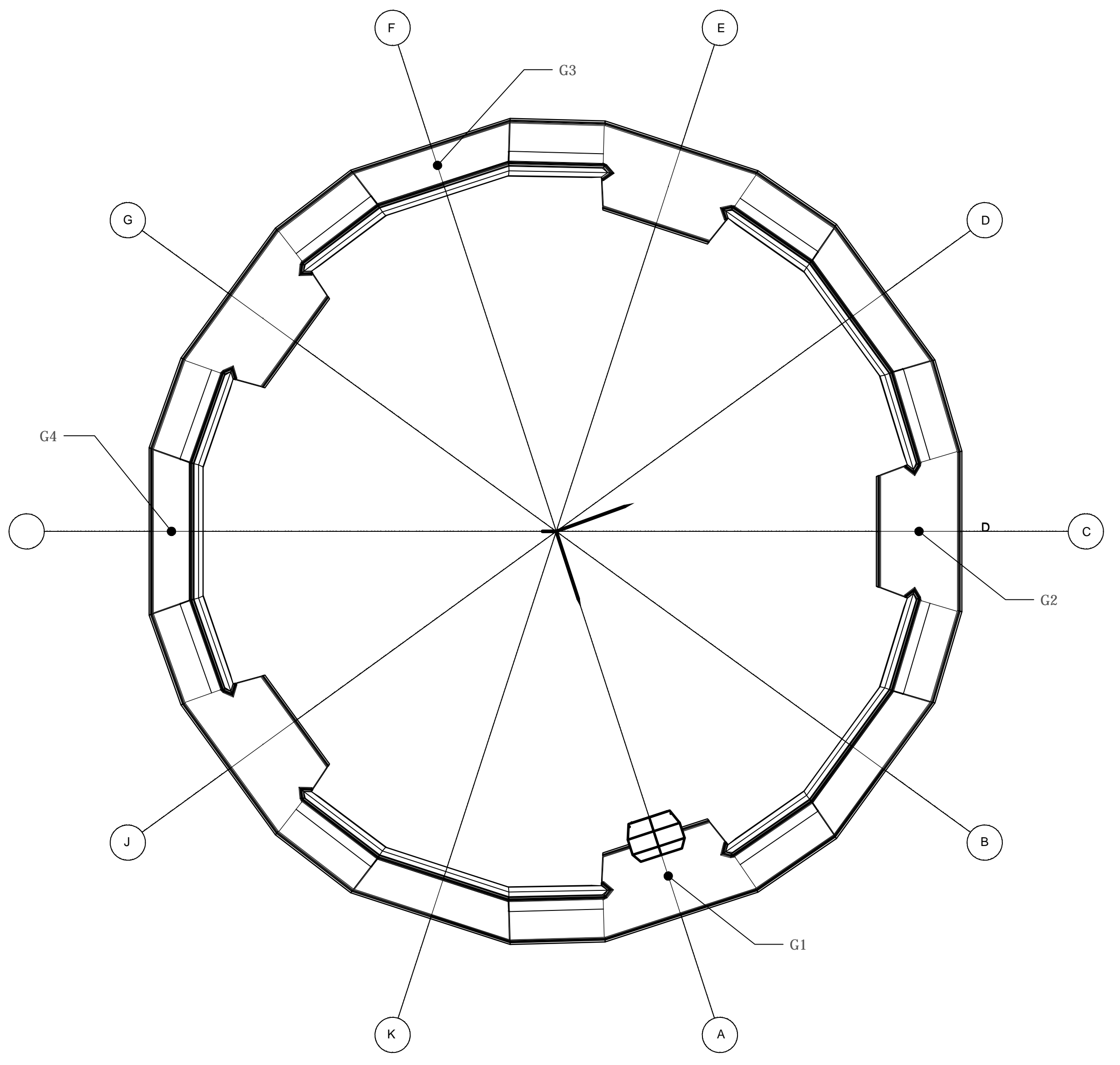
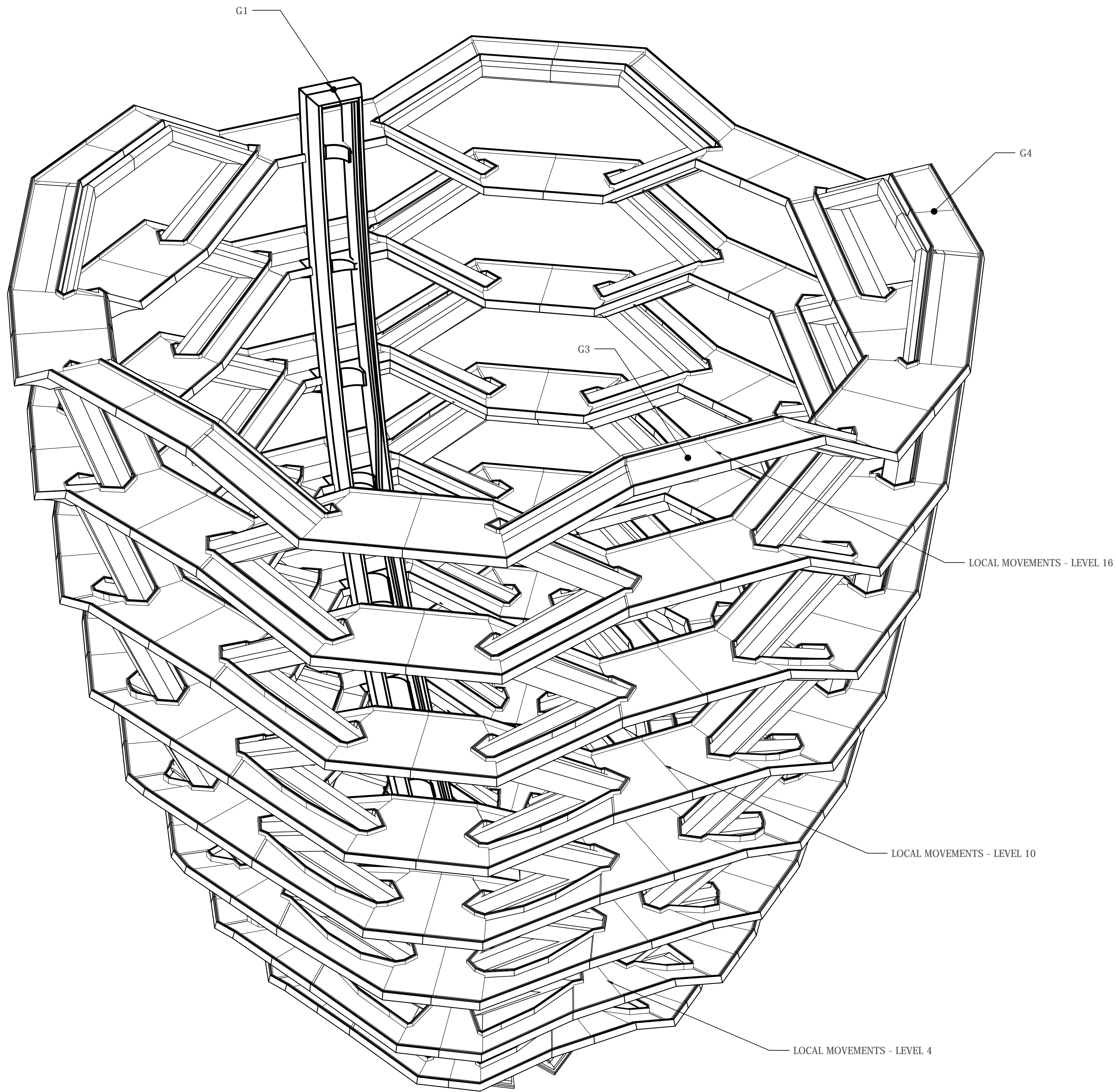
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 New York, NY 10005
 Tel: 212.896.3000



1 3D VIEW - GLOBAL MOVEMENT POINTS
 1:100

2 TOP LEVEL PLAN - GLOBAL MOVEMENT POINTS
 1:200

GLOBAL MOVEMENTS - LEVEL 04							
JOINT	CASE	X (mm)	Y (mm)	Z (mm)	X (Inch)	Y (Inch)	Z (Inch)
G1	DEAD	15.8	-1.8	-25.9	0.62	-0.07	-1.02
G1	SDEAD	6.5	-0.3	-12.6	0.26	-0.01	-0.50
G1	LIVE	4.9	-0.2	-9.6	0.19	-0.01	-0.38
G1	WINDX	9.1	0.0	-8.3	0.36	0.00	-0.33
G1	WINDY	-0.2	5.9	0.3	-0.01	0.23	0.01
G1	LIVE HALF	16.7	-0.3	-22.6	0.66	-0.01	-0.89
G2	DEAD	15.2	-1.0	-13.3	0.60	-0.04	-0.52
G2	SDEAD	6.3	0.4	-7.6	0.25	0.01	-0.30
G2	LIVE	4.6	0.4	-5.8	0.18	0.01	-0.23
G2	WINDX	8.8	-0.1	-3.1	0.35	0.00	-0.12
G2	WINDY	0.0	6.3	-4.7	0.00	0.25	-0.18
G2	LIVE HALF	15.8	-0.1	-9.4	0.62	0.00	-0.37
G3	DEAD	16.7	-2.7	3.4	0.66	-0.11	0.14
G3	SDEAD	5.6	-0.4	-1.6	0.22	-0.02	-0.06
G3	LIVE	3.8	-0.4	-2.1	0.15	-0.01	-0.08
G3	WINDX	11.5	-0.6	7.7	0.45	-0.02	0.30
G3	WINDY	-0.4	7.4	-0.3	-0.02	0.29	-0.01
G3	LIVE HALF	21.0	-1.3	15.7	0.83	-0.05	0.62
G4	DEAD	18.6	-3.3	-8.8	0.73	-0.13	-0.35
G4	SDEAD	7.0	-1.1	-5.5	0.28	-0.04	-0.22
G4	LIVE	5.1	-1.0	-4.8	0.20	-0.04	-0.19
G4	WINDX	11.3	-0.3	1.4	0.45	-0.01	0.05
G4	WINDY	-0.4	7.8	5.9	-0.02	0.31	0.23
G4	LIVE HALF	21.2	-0.7	1.1	0.83	-0.03	0.04

GLOBAL MOVEMENTS - LEVEL 10							
JOINT	CASE	X (mm)	Y (mm)	Z (mm)	X (Inch)	Y (Inch)	Z (Inch)
G1	DEAD	40.1	-4.5	-39.8	1.58	-0.18	-1.57
G1	SDEAD	16.4	-0.8	-19.3	0.64	-0.03	-0.76
G1	LIVE	12.0	-0.7	-14.8	0.47	-0.03	-0.58
G1	WINDX	22.7	-0.3	-15.0	0.89	-0.01	-0.59
G1	WINDY	-0.6	16.3	0.5	-0.02	0.64	0.02
G1	LIVE HALF	50.9	-1.3	-41.9	2.00	-0.05	-1.65
G2	DEAD	35.2	-6.3	-22.9	1.39	-0.25	-0.90
G2	SDEAD	13.1	-1.6	-15.7	0.52	-0.06	-0.62
G2	LIVE	9.2	-1.4	-12.7	0.36	-0.06	-0.50
G2	WINDX	21.9	-0.7	-4.8	0.86	-0.03	-0.19
G2	WINDY	-0.4	16.6	-10.7	-0.02	0.65	-0.42
G2	LIVE HALF	46.8	-2.9	-16.6	1.84	-0.11	-0.65
G3	DEAD	32.9	-5.7	-5.0	1.30	-0.22	-0.20
G3	SDEAD	8.4	-0.9	-15.1	0.33	-0.04	-0.60
G3	LIVE	5.3	-0.9	-13.8	0.21	-0.04	-0.54
G3	WINDX	25.0	-1.1	14.6	0.99	-0.04	0.57
G3	WINDY	-0.8	18.5	-0.4	-0.03	0.73	-0.02
G3	LIVE HALF	51.8	-2.5	29.7	2.04	-0.10	1.17
G4	DEAD	37.4	-5.5	-20.3	1.47	-0.22	-0.80
G4	SDEAD	12.1	-1.8	-17.7	0.48	-0.07	-0.70
G4	LIVE	8.3	-1.6	-15.3	0.33	-0.06	-0.60
G4	WINDX	25.2	-0.7	3.6	0.99	-0.03	0.14
G4	WINDY	-0.8	18.7	11.6	-0.03	0.74	0.46
G4	LIVE HALF	53.5	-1.0	2.8	2.10	-0.04	0.11

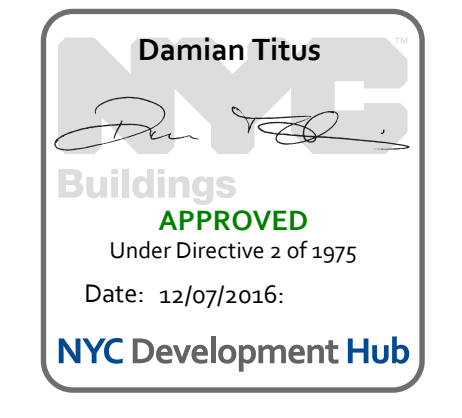
GLOBAL MOVEMENTS - LEVEL 16							
JOINT	CASE	X (mm)	Y (mm)	Z (mm)	X (Inch)	Y (Inch)	Z (Inch)
G1	DEAD	57.4	-7.7	-43.0	2.26	-0.30	-1.69
G1	SDEAD	18.2	-1.4	-21.2	0.72	-0.06	-0.83
G1	LIVE	12.0	-1.3	-15.6	0.47	-0.05	-0.61
G1	WINDX	39.1	-0.7	-17.5	1.54	-0.03	-0.69
G1	WINDY	-1.0	30.0	0.6	-0.04	1.18	0.02
G1	LIVE HALF	90.1	-2.4	-49.6	3.55	-0.10	-1.95
G2	DEAD	52.1	-7.8	-36.7	2.05	-0.31	-1.44
G2	SDEAD	14.2	1.4	-33.4	0.56	0.05	-1.31
G2	LIVE	9.0	0.4	-25.1	0.35	0.02	-0.99
G2	WINDX	38.5	-0.9	-5.6	1.51	-0.03	-0.22
G2	WINDY	-1.0	30.2	-13.6	-0.04	1.19	-0.53
G2	LIVE HALF	87.1	-1.3	-26.8	3.43	-0.05	-1.06
G3	DEAD	50.0	-9.1	-18.6	1.97	-0.36	-0.73
G3	SDEAD	7.8	-1.6	-37.8	0.31	-0.06	-1.49
G3	LIVE	4.4	-1.6	-29.7	0.17	-0.06	-1.17
G3	WINDX	42.2	-1.6	17.6	1.66	-0.06	0.69
G3	WINDY	-1.2	32.5	-0.4	-0.05	1.28	-0.02
G3	LIVE HALF	94.0	-3.8	35.9	3.70	-0.15	1.41
G4	DEAD	53.7	-10.8	-35.6	2.11	-0.43	-1.40
G4	SDEAD	11.3	-7.9	-40.4	0.44	-0.31	-1.59
G4	LIVE	6.9	-6.0	-31.1	0.27	-0.24	-1.23
G4	WINDX	42.0	-1.3	4.4	1.65	-0.05	0.17
G4	WINDY	-1.1	32.8	14.1	-0.04	1.29	0.56
G4	LIVE HALF	95.4	-3.6	0.7	3.75	-0.14	0.03

COORDINATION WITH ARCHITECTURAL DRAWINGS AND 3D MODEL

FOR VESSEL COMPONENTS THIS DRAWING SET IS TO BE CONSIDERED INTEGRAL WITH THE PROVIDED 3D MODELS AND MAY NOT BE CONSIDERED INDEPENDENTLY FROM THE MODELS. THE CONTRACTOR IS TO BASE THEIR BID UPON INFORMATION PROVIDED IN BOTH THE DRAWINGS AND 3D MODELS. IN MATTERS OF FORM AND GEOMETRY THE THREE DIMENSIONAL MODEL TAKES PRECEDENCE IN THE INSTANCE OF A DISCREPANCY BETWEEN DRAWING AND MODEL.

IN ALL OTHER MATTERS THE CONTRACTOR SHALL SEEK THE OPINION OF THE ARCHITECT AND SER TO RESOLVE THE DISCREPANCY.

OUTLINE DEFLECTIONS ARE PROVIDED IN THE TABLES ABOVE IN ORDER TO ASSIST FABRICATOR IN DETERMINING THE RANGE OF MOVEMENT TO BE ACCOMMODATED IN THE FABRICATION AND ERECTION. A FULL BREAKDOWN OF ALL LANDINGS AND LEVELS WILL BE DEVELOPED DURING DESIGN ASSIST BASED UPON THE INTENDED CONSTRUCTION SEQUENCE.



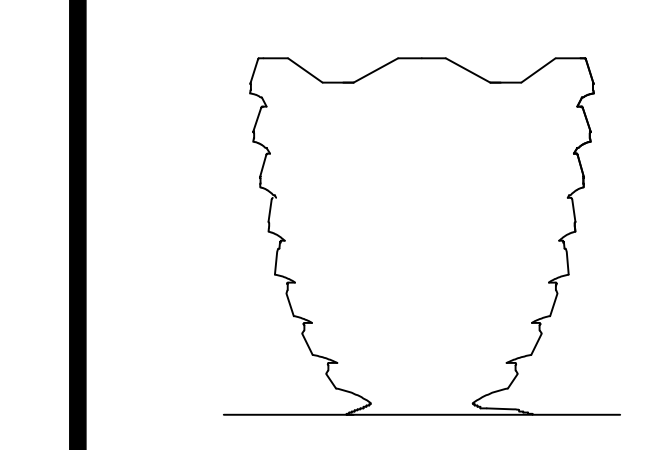
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02	DOCUMENT ISSUE 02	29 APR 2014
03	DOCUMENT ISSUE 03	13 MAY 2014
04	Issue	Date

Draw: 03/23/15
 Project No: 731
 Sheet No: HYE-VS-S-850

MOVEMENTS

Approval Number: S-850.00

TBD XXX NEW YORK, NY



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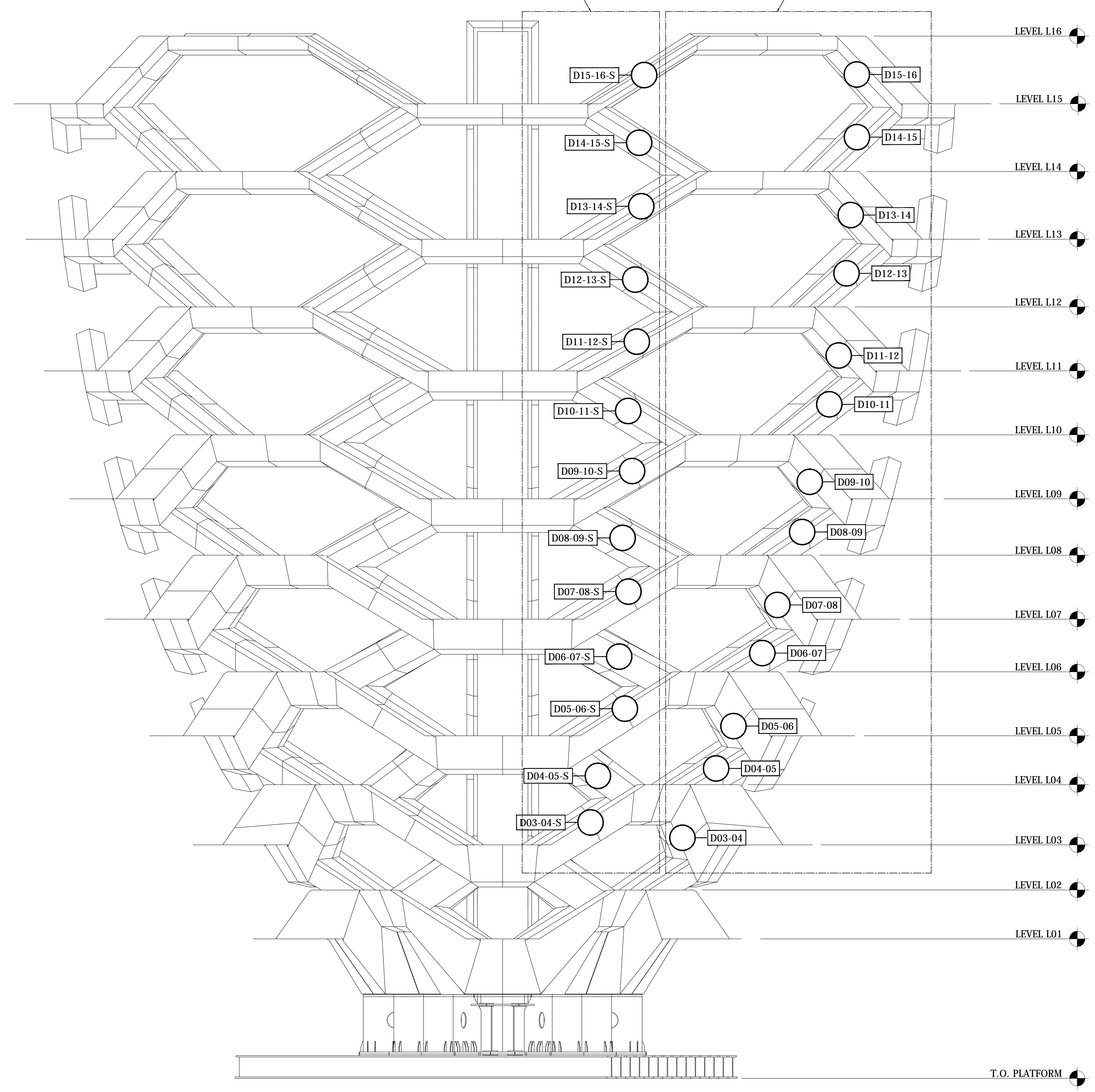
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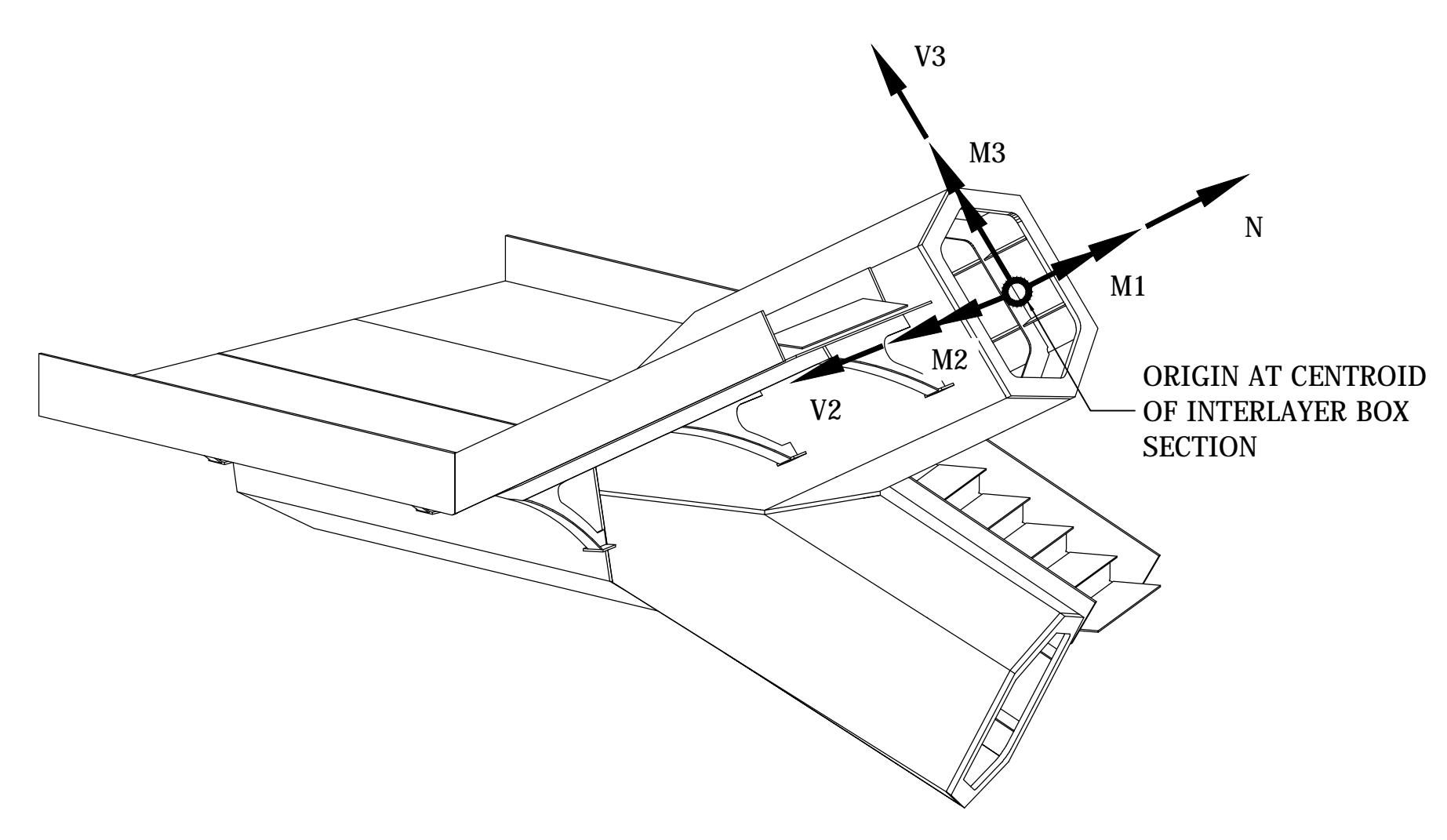
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DOGBONE SPLICES ON SPINE [2 LOCATIONS]

DOGBONE SPLICES OFF SPINE [8 LOCATIONS]



1 ELEVATION
1:100



2 COORDINATE SYSTEM

DOGBONE SPLICE D01-02

	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-1075	-420	-2325	-795	-1622	-1070	U-1.2D+1.6W+L20
N MAX	9271	1457	-2732	4161	10431	5358	U-1.2D+1.6W+L23
V2 MIN	-771	-1593	-6872	-1093	-1042	-3290	U-1.2D+1.6W+L10
V2 MAX	6429	1602	-287	1907	5173	2579	U-1.2D+1.6W+L44
V3 MIN	2817	-1526	-7519	-2741	1664	-3806	U-1.2D+1.6L+S-T3-60+40
V3 MAX	965	184	-287	946	1905	1191	U-1.2D+1.6W+L60
M1 MIN	-691	-293	-7417	-2980	-1197	-3910	U-1.2D+1.6W+L60
M1 MAX	8723	217	-726	4193	7881	5353	U-1.2D+1.6L+S+T2
M2 MIN	-1075	-418	-2325	-795	-1622	-1070	U-1.2D+1.6W+L20
M2 MAX	9271	1457	-2732	4161	10472	5358	U-1.2D+1.6L+S+T3
M3 MIN	-733	-441	-7272	-2951	-1450	-3978	U-1.2D+1.6L+S+T3+60+40
M3 MAX	8796	361	-726	4129	7811	5382	U-1.2D+1.6L+S+T2+60+40
MIN	-1075	-1593	-7519	-2980	-1622	-3978	
MAX	9271	1602	-287	4193	10472	5382	

DOGBONE SPLICE D02-03

	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	22	-161	-4153	-997	-1639	-386	U-1.2D+1.6W+L53
N MAX	6039	539	-3404	2781	-1406	1501	U-1.2D+1.6L+S-T3
V2 MIN	1032	-250	-6671	-1895	-3014	-1132	U-1.2D+1.6L+S+T
V2 MAX	5139	539	-848	1592	-623	780	U-1.2D+1.6L+S+T2
V3 MIN	2938	-209	-7517	-2173	-3576	-1341	U-1.2D+1.6L+S-T3-60+40
V3 MAX	2826	141	-803	763	-651	556	U-1.2D+1.6L+S-T4-60+40
M1 MIN	1165	-204	-6754	-2296	-2885	-1110	U-1.2D+1.6L+S-T4-60+40
M1 MAX	4365	464	-848	2877	-623	916	U-1.2D+1.6L+S-T2-60+40
M2 MIN	3130	-209	-7517	-2173	-3576	-1431	U-1.2D+1.6L+S-T3
M2 MAX	2400	148	-2092	1602	-419	251	U-1.2D+1.6L+S-T3
M3 MIN	180	-232	-7079	-2173	-3576	-1625	U-1.2D+1.6L+S-T2-60+40
M3 MAX	5965	467	-1602	2810	-834	1560	U-1.2D+1.6L+S-T3-60+40
MIN	22	-250	-7517	-2296	-3576	-1625	
MAX	6039	539	-803	2877	-419	1560	

DOGBONE SPLICE D03-04

	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-942	-187	-4203	-3068	-1189	-1178	U-1.2D+1.6W+L10
N MAX	5113	302	-3477	4417	1884	4065	U-1.2D+1.6W+L23
V2 MIN	-449	-369	-6329	-4854	-795	-4025	U-1.2D+1.6L+S+T1+60+40
V2 MAX	4976	302	-1717	4673	1440	4023	U-1.2D+1.6L+S+T4+60+40
V3 MIN	2187	-340	-7540	-5247	248	-3247	U-1.2D+1.6L+S-T3
V3 MAX	1558	233	-1446	1919	184	1177	U-1.2D+1.6L+S-T4
M1 MIN	152	-340	-7285	-5319	-489	-3261	U-1.2D+1.6L+S+T3+60+40
M1 MAX	3895	302	-1468	5442	1247	3225	U-1.2D+1.6L+S+T3+60+40
M2 MIN	-942	-221	-4391	-3068	-1189	-1178	U-1.2D+1.6W+L10
M2 MAX	5113	280	-3356	4417	1884	4065	U-1.2D+1.6W+L23
M3 MIN	-828	-339	-6329	-4854	-1097	-4025	U-1.2D+1.6L+S+T3+60+40
M3 MAX	5113	302	-1447	4417	1884	4065	U-1.2D+1.6W+L23
MIN	-942	-369	-7540	-5319	-1189	-4025	
MAX	5113	302	-1446	5442	1884	4065	

DOGBONE SPLICE D04-05

	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-707	-381	-4096	-1428	-996	-452	U-1.2D+1.6W+L17
N MAX	3411	352	-2281	1750	10	361	U-1.2D+1.6W+L59
V2 MIN	-326	-507	-6383	-800	-1204	-520	U-1.2D+1.6L+S-T4
V2 MAX	2417	484	-1333	1205	287	191	U-1.2D+1.6L+S-T2
V3 MIN	1079	-471	-7107	-2443	-997	-716	U-1.2D+1.6L+S-T3
V3 MAX	1806	390	-994	905	23	228	U-1.2D+1.6L+S-T4-60+40
M1 MIN	632	-399	-6975	-2451	-961	-360	U-1.2D+1.6L+S-T3-60+40
M1 MAX	3337	393	-996	2516	209	114	U-1.2D+1.6L+S-T3
M2 MIN	552	-366	-4818	-1544	-1598	-553	U-1.2D+1.6L+S-T
M2 MAX	1772	419	-3212	1508	370	141	U-1.2D+1.6W+L10
M3 MIN	-645	-404	-6372	-2098	-1114	-844	U-1.2D+1.6L+S-T2-60+40
M3 MAX	3398	368	-2330	1750	55	423	U-1.2D+1.6W+L17
MIN	-707	-507	-7107	-2451	-1598	-844	
MAX	3411	484	-994	2516	370	423	

DOGBONE SPLICE D05-06

	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-1427	-113	-2665	-1536	-1922	-1320	U-1.2D+1.6L+S-T2
N MAX	3344	255	-2527	3054	167	2521	U-1.2D+1.6L+S-T2
V2 MIN	-1138	-270	-6102	-3581	-1674	-2496	U-1.2D+1.6L+S-T3
V2 MAX	2730	266	-1816	3601	2	1998	U-1.2D+1.6L+S-T4
V3 MIN	215	-255	-6207	-3559	-895	-2050	U-1.2D+1.6L+S-T3
V3 MAX	1273	112	-1133	1446	-255	849	U-0.9D+1.6W+L2
M1 MIN	-281	-255	-6106	-3582	-1057	-1980	U-1.2D+1.6L+S+T3+60+40
M1 MAX	2728	255	-1580	3602	-5	1993	U-1.2D+1.6L+S+T3
M2 MIN	-1144	-195	-3885	-2204	-2114	-1191	U-1.2D+1.6L+S-T1-60+40
M2 MAX	3295	149	-1590	2806	362	2434	U-1.2D+1.6W+L23
M3 MIN	-1417	-270	-5173	-3095	-1925	-2496	U-1.2D+1.6L+S-T3
M3 MAX	3344	258	-1929	3054	167	2521	U-1.2D+1.6L+S-T2
MIN	-1427	-270	-6207	-3582	-2114	-2496	
MAX	3344	266	-1133	3602	362	2521	

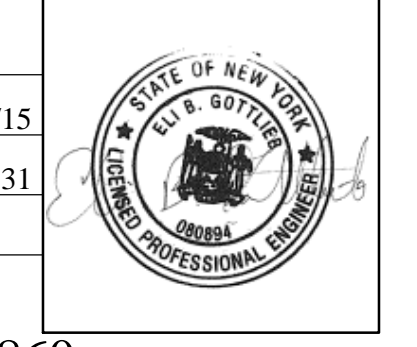
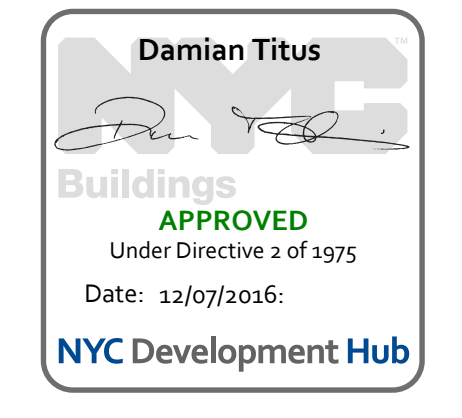
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Rev. Date Description Initials
01 03/23/15
02 29/05/2014
03 15/MAY/2014

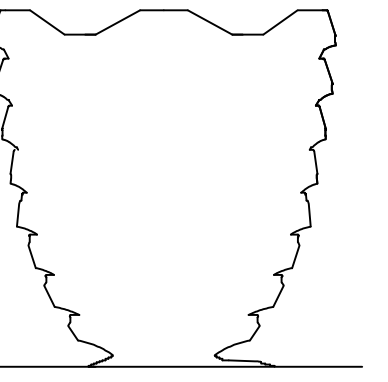
Project information form including fields for Title, Project No. (03/23/15), Sheet No. (731), Sheet Number, and Drawing Title (HYE-VS-S-860).

CONNECTION FORCES DOGBONES 1

Project Number: S-860.00



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DOGBONE SPLICE D06-07							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-284	-146	-3164	-1252	-358	-290	U-1.2D+1.6W+L17
N MAX	2462	193	-1857	1537	255	733	U-1.2D+1.6W+L59
V2 MIN	-5	-242	-5625	-2126	-485	-533	U-1.2D+1.6L+S-T
V2 MAX	1714	277	-1376	1900	550	482	U-1.2D+1.6L+S-T-60-40
V3 MIN	739	-188	-5660	-2128	-181	-486	U-1.2D+1.6L+S-T3
V3 MAX	1360	211	-999	777	131	627	U-1.2D+1.6L+S-T4
M1 MIN	569	-225	-5626	-2128	-465	-250	U-1.2D+1.6L+S-T3-60-40
M1 MAX	2434	211	-999	2145	582	265	U-1.2D+1.6L+S-T3
M2 MIN	142	-178	-3322	-1104	-807	-564	U-1.2D+1.6L+S-T4
M2 MAX	1480	173	-2568	1839	655	287	U-1.2D+1.6W+L23
M3 MIN	-171	-166	-5588	-2071	-497	-783	U-1.2D+1.6L+S-T1
M3 MAX	2343	242	-1644	2076	431	809	U-1.2D+1.6L+S-T1
MIN	-284	-242	-5660	-2128	-807	-783	
MAX	2462	277	-999	2145	655	809	

DOGBONE SPLICE D07-08							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-1011	-192	-2369	-1452	-1549	-966	U-1.2D+1.6L+S-T4
N MAX	2700	204	-2413	2389	262	2011	U-1.2D+1.6L+S-T3
V2 MIN	-450	-241	-4863	-3354	-1721	-1763	U-1.2D+1.6L+S-T
V2 MAX	2335	207	-1620	2615	238	1725	U-1.2D+1.6L+S-T
V3 MIN	390	-223	-4915	-3354	-914	-1812	U-1.2D+1.6L+S-T3
V3 MAX	1296	102	-1199	1112	12	1017	U-0.9D+1.6W8
M1 MIN	-146	-223	-4863	-3354	-910	-1730	U-1.2D+1.6L+S-T4
M1 MAX	2337	204	-1235	2615	100	1725	U-1.2D+1.6L+S-T3+60+40
M2 MIN	-458	-207	-3436	-2036	-1725	-1317	U-1.2D+1.6L+S-T
M2 MAX	2354	118	-1476	2132	348	1807	U-1.2D+1.6W+L30
M3 MIN	-1000	-237	-4285	-3354	-1535	-2000	U-1.2D+1.6L+S-T4-60-40
M3 MAX	2586	204	-1371	2389	128	2011	U-1.2D+1.6L+S-T2
MIN	-1011	-241	-4915	-3354	-1725	-2000	
MAX	2700	207	-1199	2615	348	2011	

DOGBONE SPLICE D08-09							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-52	-138	-2153	-804	-641	-241	U-0.9D+1.6W5
N MAX	1722	264	-1440	1065	-199	908	U-1.2D+1.6L+S-T3
V2 MIN	339	-295	-4356	-664	-1244	-429	U-1.2D+1.6L+S-T
V2 MAX	1358	292	-1066	627	-141	475	U-1.2D+1.6L+S-T-60-40
V3 MIN	513	-268	-4530	-1478	-887	-371	U-1.2D+1.6L+S-T3
V3 MAX	1093	234	-851	588	-181	728	U-1.2D+1.6L+S-T4
M1 MIN	511	-240	-4522	-1507	-884	-371	U-1.2D+1.6L+S-T3
M1 MAX	1708	234	-851	1481	-186	385	U-1.2D+1.6L+S-T3
M2 MIN	321	-251	-4328	-1374	-1246	-637	U-1.2D+1.6L+S-T
M2 MAX	737	132	-1355	765	-95	309	U-0.9D+1.6W10
M3 MIN	-37	-214	-4499	-1445	-1236	-886	U-1.2D+1.6L+S-T1
M3 MAX	1695	173	-1275	1444	-199	908	U-1.2D+1.6L+S-T1
MIN	-52	-295	-4530	-1507	-1246	-886	
MAX	1722	292	-851	1481	-95	908	

DOGBONE SPLICE D09-10							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-938	-109	-1823	-897	-1503	-949	U-1.2D+1.6L+S-T2
N MAX	1763	111	-1901	1796	18	1490	U-1.2D+1.6L+S-T3
V2 MIN	-815	-159	-3466	-1814	-1723	-1404	U-1.2D+1.6L+S-T
V2 MAX	1570	114	-1174	1713	123	1399	U-1.2D+1.6L+S-T1
V3 MIN	-8	-148	-3816	-1915	-1060	-1338	U-1.2D+1.6L+S-T3
V3 MAX	886	45	-1017	865	-42	766	U-0.9D+1.6W8
M1 MIN	-450	-149	-3788	-1934	-1057	-1241	U-1.2D+1.6L+S-T3
M1 MAX	1477	111	-1127	1941	16	1224	U-1.2D+1.6L+S-T3+60+40
M2 MIN	-626	-131	-2726	-1388	-1739	-1016	U-1.2D+1.6L+S-T
M2 MAX	1328	54	-1174	1372	146	1140	U-1.2D+1.6W+L35
M3 MIN	-936	-156	-3416	-1798	-1495	-1501	U-1.2D+1.6L+S-T4
M3 MAX	1578	111	-1183	1796	18	1490	U-1.2D+1.6L+S-T2
MIN	-938	-159	-3816	-1934	-1739	-1501	
MAX	1763	114	-1017	1941	146	1490	

DOGBONE SPLICE D10-11							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	215	-82	-1533	-611	-391	-253	U-0.9D+1.6W6
N MAX	1609	156	-1024	981	-8	843	U-1.2D+1.6L+S-T1
V2 MIN	544	-173	-3033	-761	-710	-423	U-1.2D+1.6L+S-T-60-40
V2 MAX	1451	165	-743	432	-12	424	U-1.2D+1.6L+S-T-60-40
V3 MIN	644	-157	-3115	-1254	-478	-441	U-1.2D+1.6L+S-T3
V3 MAX	1150	146	-645	364	-105	678	U-1.2D+1.6L+S-T2-60-40
M1 MIN	667	-151	-3111	-1254	-460	-441	U-1.2D+1.6L+S-T4+60+40
M1 MAX	1548	146	-651	982	-8	437	U-1.2D+1.6L+S-T3
M2 MIN	545	-164	-2669	-1108	-711	-847	U-1.2D+1.6L+S-T
M2 MAX	1053	137	-833	707	17	391	U-1.2D+1.6W+L7
M3 MIN	227	-137	-3101	-1245	-573	-847	U-1.2D+1.6L+S-T1
M3 MAX	1609	119	-914	960	-10	843	U-1.2D+1.6L+S-T1
MIN	215	-173	-3115	-1254	-711	-847	
MAX	1609	165	-645	982	17	843	

DOGBONE SPLICE D11-12							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-668	-133	-1290	-693	-1199	-720	U-1.2D+1.6L+S-T2
N MAX	1290	138	-1428	1341	-11	1192	U-1.2D+1.6L+S-T3
V2 MIN	-471	-159	-2559	-1436	-1410	-1263	U-1.2D+1.6L+S-T
V2 MAX	1072	146	-949	1456	15	1149	U-1.2D+1.6L+S-T+60+40
V3 MIN	-74	-151	-2653	-1434	-920	-1126	U-1.2D+1.6L+S-T3
V3 MAX	643	67	-820	680	-40	637	U-0.9D+1.6W8
M1 MIN	-293	-154	-2545	-1451	-913	-1180	U-1.2D+1.6L+S-T
M1 MAX	1090	138	-897	1456	-13	1149	U-1.2D+1.6L+S-T+60+40
M2 MIN	-580	-147	-2288	-1288	-1418	-1135	U-1.2D+1.6L+S-T4
M2 MAX	985	123	-896	1115	112	922	U-1.2D+1.6L+S-T2-60-40
M3 MIN	-668	-150	-2559	-1436	-1190	-1263	U-1.2D+1.6L+S-T
M3 MAX	1089	138	-1019	1443	15	1228	U-1.2D+1.6L+S-T-60-40
MIN	-668	-159	-2653	-1451	-1418	-1263	
MAX	1290	146	-820	1456	112	1228	

DOGBONE SPLICE D11-12							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-668	-133	-1290	-693	-1199	-720	U-1.2D+1.6L+S-T2
N MAX	1290	138	-1428	1341	-11	1192	U-1.2D+1.6L+S-T3
V2 MIN	-471	-159	-2559	-1436	-1410	-1263	U-1.2D+1.6L+S-T
V2 MAX	1072	146	-949	1456	15	1149	U-1.2D+1.6L+S-T+60+40
V3 MIN	-74	-151	-2653	-1434	-920	-1126	U-1.2D+1.6L+S-T3
V3 MAX	643	67	-820	680	-40	637	U-0.9D+1.6W8
M1 MIN	-293	-154	-2545	-1451	-913	-1180	U-1.2D+1.6L+S-T
M1 MAX	1090	138	-897	1456	-13	1149	U-1.2D+1.6L+S-T+60+40
M2 MIN	-580	-147	-2288	-1288	-1418	-1135	U-1.2D+1.6L+S-T4
M2 MAX	985	123	-896	1115	112	922	U-1.2D+1.6L+S-T2-60-40
M3 MIN	-668	-150	-2559	-1436	-1190	-1263	U-1.2D+1.6L+S-T
M3 MAX	1089	138	-1019	1443	15	1228	U-1.2D+1.6L+S-T-60-40
MIN	-668	-159	-2653	-1451	-1418	-1263	
MAX	1290	146	-820	1456	112	1228	

DOGBONE SPLICE D12-13							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	286	-108	-1012	-346	-153	-327	U-0.9D+1.6W5
N MAX	1490	220	-727	573	245	768	U-1.2D+1.6L+S-T1
V2 MIN	509	-215	-1933	-249	-333	-415	U-1.2D+1.6L+S-T-60-40
V2 MAX	1403	233	-526	252	223	335	U-1.2D+1.6L+S-T-60-40
V3 MIN	556	-196	-1991	-618	-211	-527	U-1.2D+1.6L+S-T
V3 MAX	1167	191	-499	228	87	608	U-1.2D+1.6L+S-T4
M1 MIN	534	-175	-1972	-649	-287	-527	U-1.2D+1.6L+S-T3
M1 MAX	1195	191	-499	594	244	452	U-1.2D+1.6L+S-T2-60-40
M2 MIN	437	-201	-1391	-484	-360	-887	U-1.2D+1.6L+S-T4
M2 MAX	1196	173	-866	573	245	402	U-1.2D+1.6L+S-T3-60-40
M3 MIN	366	-165	-1972	-553	-293	-888	U-1.2D+1.6L+S-T1-60-40
M3 MAX	1452	156	-627	594	218	768	U-1.2D+1.6L+S-T1
MIN	286	-215	-1991	-649	-360</		

DOGBONE SPLICE D06-07-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-2188	-72	-329	-243	113	-524	U-1.2D+1.6L+S-T4
N MAX	693	148	-1722	746	-472	186	U-1.2D+1.6L+S-T2
V2 MIN	-1741	-148	-1372	-560	-145	-436	U-1.2D+1.6W+L22
V2 MAX	693	148	-854	746	-186	421	U-1.2D+1.6L+S-T2
V3 MIN	-465	-144	-2358	-1044	-434	-288	U-1.2D+1.6L+S-T1
V3 MAX	-1109	64	53	171	79	448	U-1.2D+1.6L+S-T3
M1 MIN	-1534	-144	-2356	-1044	-434	-465	U-1.2D+1.6L+S-T1+60+40
M1 MAX	-134	133	44	1056	79	448	U-1.2D+1.6L+S-T1+60+40
M2 MIN	-88	-148	-2191	-733	-843	-215	U-1.2D+1.6L+S-T4
M2 MAX	-1547	56	-114	247	393	528	U-1.2D+1.6L+S-T2
M3 MIN	-1695	-83	-709	-116	-187	-575	U-1.2D+1.6L+S-T
M3 MAX	260	77	-375	551	108	542	U-1.2D+1.6L+S-T
MIN	-2188	-148	-2358	-1044	-843	-575	
MAX	693	148	53	1056	393	542	

DOGBONE SPLICE D07-08-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	134	-139	-633	-352	760	-653	U-0.9D+1.6W12
N MAX	1652	298	-1231	916	1990	1890	U-1.2D+1.6L+S-T1+60+40
V2 MIN	201	-383	-489	-426	614	-2067	U-1.2D+1.6L+S-T1
V2 MAX	1557	377	-62	438	1937	2133	U-1.2D+1.6L+S-T1
V3 MIN	769	-236	-1888	-964	1260	-1305	U-1.2D+1.6L+S-T1+60+40
V3 MAX	1131	339	407	242	1316	1713	U-1.2D+1.6L+S-T4
M1 MIN	762	-235	-1886	-964	1135	-1301	U-1.2D+1.6L+S-T4
M1 MAX	1107	269	376	977	1668	1358	U-1.2D+1.6L+S-T1+60+40
M2 MIN	478	-163	-341	-289	609	-791	U-0.9D+1.6W8
M2 MAX	1555	376	-64	438	2017	2133	U-1.2D+1.6L+S-T1
M3 MIN	201	-383	-489	-426	614	-2067	U-1.2D+1.6L+S-T1
M3 MAX	1555	376	-64	438	1939	2133	U-1.2D+1.6L+S-T1-60-40
MIN	134	-383	-1888	-964	609	-2067	
MAX	1652	377	407	977	2017	2133	

DOGBONE SPLICE D08-09-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-2217	-38	-40	-190	74	-753	U-1.2D+1.6L+S-T4
N MAX	-181	38	-1049	509	-304	347	U-1.2D+1.6L+S-T2
V2 MIN	-1945	-48	-739	-283	-123	-797	U-1.2D+1.6W+L10
V2 MAX	-644	40	159	253	77	659	U-1.2D+1.6L+S-T2
V3 MIN	-1043	-46	-1430	-691	-304	-484	U-1.2D+1.6L+S-T1+60+40
V3 MAX	-1344	24	164	149	76	658	U-1.2D+1.6L+S-T3
M1 MIN	-1755	-46	-1430	-691	-304	-669	U-1.2D+1.6L+S-T1+60+40
M1 MAX	-612	39	160	695	76	658	U-1.2D+1.6L+S-T1+60+40
M2 MIN	-673	-43	-1417	-505	-525	-360	U-1.2D+1.6L+S-T4
M2 MAX	-1681	25	152	190	251	751	U-1.2D+1.6L+S-T2
M3 MIN	-2140	-33	-471	-94	-44	-818	U-1.2D+1.6L+S-T1
M3 MAX	-279	24	-97	144	800	800	U-1.2D+1.6L+S-T1
MIN	-2217	-48	-1430	-691	-525	-818	
MAX	-181	40	164	695	251	800	

DOGBONE SPLICE D09-10-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-1178	-517	-1418	171	-2050	-348	U-1.2D+1.6W+L19
N MAX	6824	388	4460	5297	3225	3225	U-1.2D+1.6L+S-T1
V2 MIN	513	-2113	-5582	257	412	744	U-1.2D+1.6L+S-T1
V2 MAX	1150	391	215	935	1244	1802	U-1.2D+1.6L+S-T
V3 MIN	-1303	-37	-1114	144	14	-187	U-1.2D+1.6L+S-T2
V3 MAX	1031	324	528	257	951	1503	U-1.2D+1.6L+S-T4
M1 MIN	-984	-618	-1299	-41	-2350	-722	U-1.2D+1.6L+S-T3
M1 MAX	6824	310	-725	4460	5297	3225	U-1.2D+1.6L+S-T1
M2 MIN	-984	-618	-1299	-41	-2350	-722	U-1.2D+1.6L+S-T3
M2 MAX	6824	388	203	4460	5297	3225	U-1.2D+1.6L+S-T1
M3 MIN	-858	-1	-234	169	89	-142	U-1.2D+1.6L+S-T2
M3 MAX	6824	388	203	4460	5297	3225	U-1.2D+1.6L+S-T1
MIN	-1303	-2113	-5582	-41	-2350	-722	
MAX	6824	391	528	4460	5297	3225	

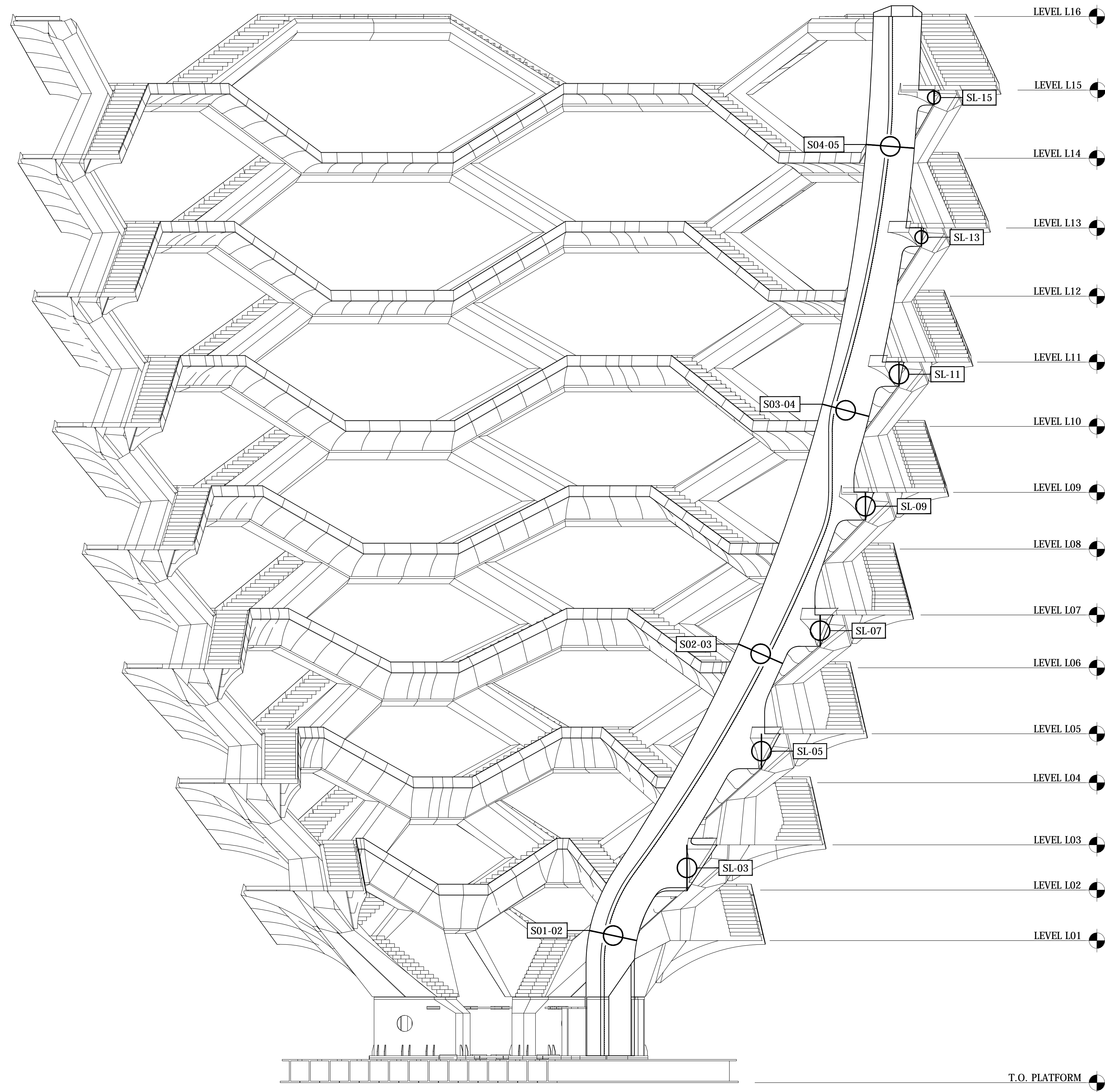
DOGBONE SPLICE D10-11-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-2371	-63	-342	-504	-68	-239	U-1.2D+1.6L+S-T1
N MAX	-353	70	-405	125	27	425	U-1.2D+1.6L+S-T3
V2 MIN	-1703	-66	-283	-238	17	-246	U-1.2D+1.6L+S-T
V2 MAX	-616	75	-496	277	142	479	U-1.2D+1.6L+S-T4+60+40
V3 MIN	-963	-15	-933	-461	-214	-153	U-1.2D+1.6L+S-T4+60+40
V3 MAX	-1346	63	61	199	112	799	U-1.2D+1.6L+S-T4-60-40
M1 MIN	-1423	-16	-931	-602	-100	-147	U-1.2D+1.6L+S-T1+60+40
M1 MAX	-1380	66	46	327	153	726	U-1.2D+1.6L+S-T1
M2 MIN	-963	-32	-933	-460	-215	-164	U-1.2D+1.6L+S-T4
M2 MAX	-944	49	-253	243	157	559	U-1.2D+1.6W+L17
M3 MIN	-1703	-66	-213	-137	-85	-246	U-1.2D+1.6L+S-T
M3 MAX	-583	69	-101	149	101	910	U-1.2D+1.6L+S-T1-60-40
MIN	-2371	-66	-933	-602	-215	-246	
MAX	-353	75	61	327	157	910	

DOGBONE SPLICE D11-12-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	531	-157	-131	-232	348	-682	U-0.9D+1.6W11
N MAX	1730	353	249	357	1058	1823	U-1.2D+1.6L+S-T1
V2 MIN	721	-359	-39	-348	321	-1814	U-1.2D+1.6L+S-T1
V2 MAX	1605	354	250	380	964	1765	U-1.2D+1.6L+S-T
V3 MIN	947	-254	-621	-565	473	-1301	U-1.2D+1.6L+S-T1+60+40
V3 MAX	1332	298	458	274	759	1410	U-1.2D+1.6L+S-T4
M1 MIN	1007	-288	-392	-577	489	-1514	U-1.2D+1.6L+S-T1+60+40
M1 MAX	1480	283	449	584	754	1519	U-1.2D+1.6L+S-T1+60+40
M2 MIN	583	-151	-102	-225	305	-681	U-0.9D+1.6W8
M2 MAX	1729	353	248	357	1058	1823	U-1.2D+1.6L+S-T1-60-40
M3 MIN	583	-359	-98	-348	309	-1814	U-1.2D+1.6L+S-T1-60-40
M3 MAX	1730	353	249	357	1058	1823	U-1.2D+1.6L+S-T1
MIN	531	-359	-621	-577	305	-1814	
MAX	1730	354	458	584	1058	1823	

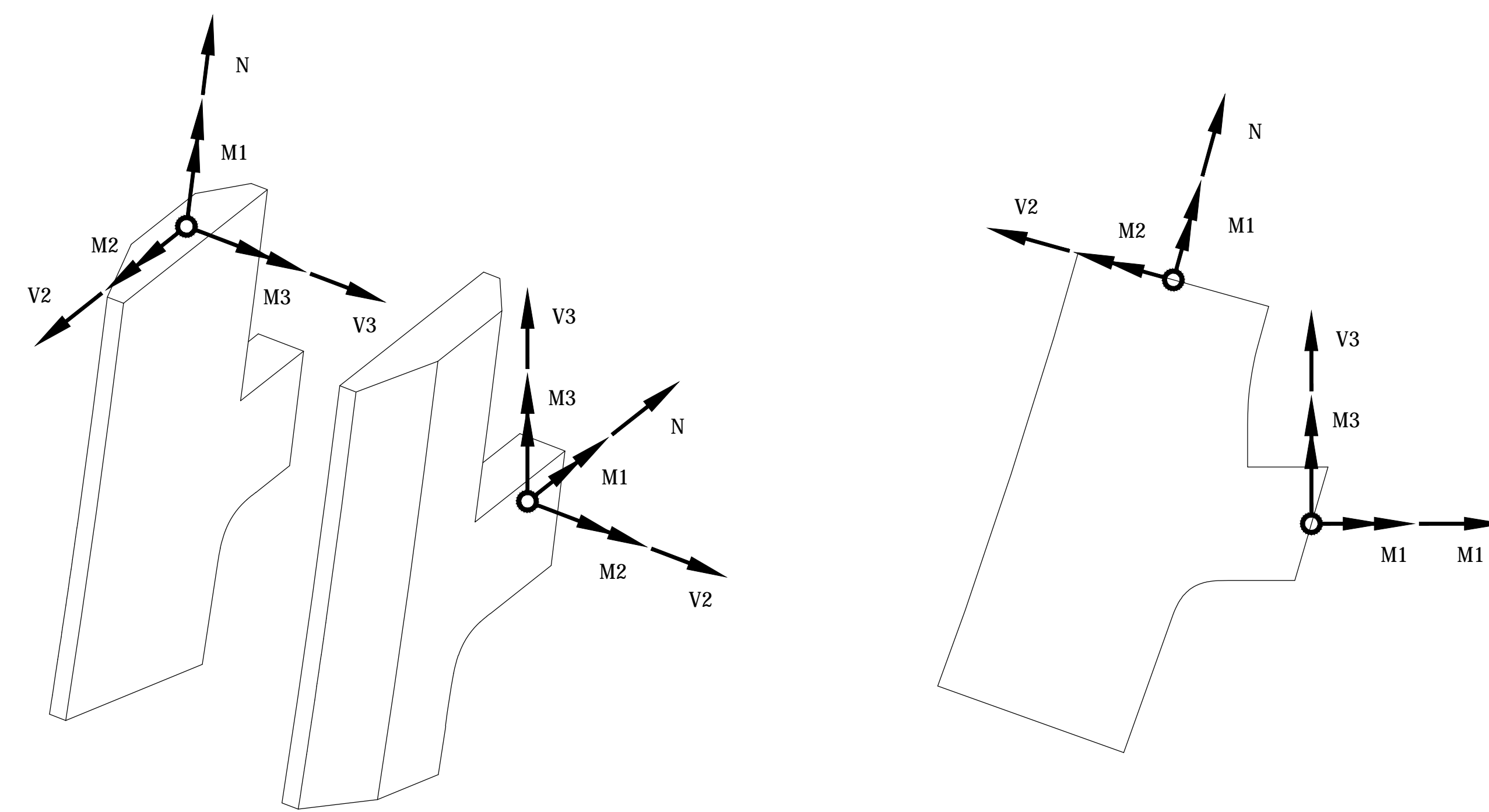
DOGBONE SPLICE D12-13-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-2144	-159	-434	-615	-215	-437	U-1.2D+1.6L+S-T1
N MAX	-594	67	-219	190	-109	158	U-0.9D+1.6W7
V2 MIN	-1991	-166	-361	-270	-241	-422	U-1.2D+1.6L+S-T
V2 MAX	-604	149	-217	183	-65	458	U-1.2D+1.6L+S-T-60-40
V3 MIN	-1469	-150	-764	-598	-179	-271	U-1.2D+1.6L+S-T1+60+40
V3 MAX	-1271	120	-121	350	-169	392	U-1.2D+1.6L+S-T3-60-40
M1 MIN	-2144	-72	-434	-615	-216	-152	U-1.2D+1.6L+S-T1-60-40
M1 MAX	-619	66	-217	579	-74	166	U-1.2D+1.6L+S-T1
M2 MIN	-1731	-158	-403	-483	-279	-382	U-1.2D+1.6L+S-T4-60-40
M2 MAX	-718	65	-235	209	-49	197	U-0.9D+1.6W9
M3 MIN	-2105	-159	-566	-364	-203	-437	U-1.2D+1.6L+S-T1
M3 MAX	-601	141	-233	336	-132	473	U-1.2D+1.6L+S-T1-60-40
MIN	-2144	-166	-764	-615	-279	-437	
MAX	-594	149	-121	579	-49	473	

DOGBONE SPLICE D13-14-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	584	-209	-80	-65	180	-533	U-0.9D+1.6W11
N MAX	1691	467	153	73	612	1265	U-1.2D+1.6L+S-T1-60-40
V2 MIN	693	-459	-39	-90	182	-1316	U-1.2D+1.6L+S-T
V2 MAX	1532	476	146	71	487	1250	U-1.2D+1.6L+S-T-60-40
V3 MIN	883	-342	-392	-230	232	-1017	U-1.2D+1.6L+S-T2
V3 MAX	1368	391	257	66	468	1047	U-1.2D+1.6L+S-T2-60-40
M1 MIN	916	-380	-291	-236	256	-1155	U-1.2D+1.6L+S-T1+60+40
M1 MAX	1455	394	150	217	477	1103	U-1.2D+1.6L+S-T1+60+40
M2 MIN	617	-203	-68	-65	166	-535	U-0.9D+1.6W7
M2 MAX	1691	467	153	73	612	1265	U-1.2D+1.6L+S-T1
M3 MIN	617	-452	-67	-92	166	-1329	U-1.2D+1.6L+S-T1-60-40
M3 MAX	1634	467	150	73	566	1265	U-1.2D+1.6L+S-T1
MIN	584	-459	-392	-236	166	-1329	
MAX	1691	476	257	217	612	1265	

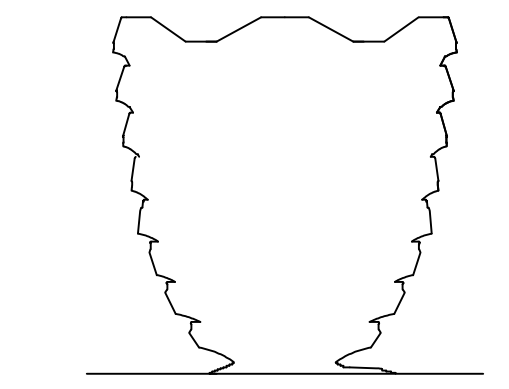
DOGBONE SPLICE D14-15-S							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-2499	-162	-836	-1202	-1112	-165	U-1.2D+1.6L+S-T1
N MAX	-898	74	-364	491	-424	55	U-0.9D+1.6W8
V2 MIN	-2499	-162	-836	-493	-1112	-165	U-1.2D+1.6L+S-T1
V2 MAX	-961	187	-377	503	-421	185	U-1.2D+1.6L+S-T1-60-40
V3 MIN	-1909	-161	-888	-1053	-787	-90	U-1.2D+1.6L+S-T1+60+40
V3 MAX	-898	74	-364	491	-424	55	U-0.9D+1.6W8
M1 MIN	-2444	-63	-827	-1203	-1112		



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SPINE TO SPINE CONNECTION S01-02							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-7773	519	-12	-73	-276	-3900	U-1.2D+1.6L+S-T1-60-40
N MAX	-1969	16	36	13	107	-945	U-1.2D+1.6L+S-T3+60+40
V2 MIN	-4284	-226	-38	-17	-231	-3379	U-1.2D+1.6L+S-T1+60+40
V2 MAX	-5428	737	13	49	177	-1405	U-1.2D+1.6L+S-T3-60-40
V3 MIN	-5901	-69	-40	-38	-176	-2477	U-1.2D+1.6L+S-T2
V3 MAX	-2744	653	55	8	130	-2194	U-1.2D+1.6L+S-T1
M1 MIN	-7179	-104	-17	-102	-139	-2932	U-1.2D+1.6L+S-T2
M1 MAX	-2531	563	27	103	95	-1792	U-1.2D+1.6L+S-T4
M2 MIN	-6955	226	-2	9	-283	-2865	U-1.2D+1.6L+S-T4-60-40
M2 MAX	-2616	610	4	-14	223	-1176	U-0.9D+1.6W11
M3 MIN	-7741	472	-14	-81	-272	-3997	U-1.2D+1.6L+S-T1
M3 MAX	-2112	288	4	21	102	-828	U-1.2D+1.6L+S-T3
MIN	-7773	-226	-40	-102	-283	-3997	
MAX	-1969	737	55	103	223	-828	

SPINE TO SPINE CONNECTION S02-03							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-9825	359	-3	-54	-314	-315	U-1.2D+1.6L+S-T1
N MAX	-3515	76	2	10	110	157	U-0.9D+1.6W8
V2 MIN	-4391	-34	-2	-5	-143	24	U-1.2D+1.6L+S-T3
V2 MAX	-7606	447	1	55	314	-18	U-1.2D+1.6L+S-T1
V3 MIN	-6667	170	-13	-24	-187	-73	U-1.2D+1.6W+L38
V3 MAX	-5455	224	11	32	188	82	U-1.2D+1.6W+L10
M1 MIN	-9825	31	-4	-54	-314	-304	U-1.2D+1.6L+S-T1
M1 MAX	-4637	370	7	58	227	99	U-1.2D+1.6L+S-T4
M2 MIN	-9825	75	-3	-54	-314	-304	U-1.2D+1.6L+S-T1
M2 MAX	-3543	440	1	55	314	157	U-0.9D+1.6W7
M3 MIN	-7001	60	-3	-14	-236	-402	U-1.2D+1.6L+S-T1+60+40
M3 MAX	-6487	348	0	43	221	489	U-1.2D+1.6L+S-T3-60-40
MIN	-9825	-34	-13	-54	-314	-402	
MAX	-3515	447	11	58	314	489	

SPINE TO SPINE CONNECTION S03-04							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-6214	561	-25	-54	-198	474	U-1.2D+1.6L+S-T1
N MAX	-2391	256	14	15	75	393	U-0.9D+1.6W8
V2 MIN	-2406	254	-13	-15	-76	386	U-0.9D+1.6W7
V2 MAX	-4676	737	26	54	198	608	U-1.2D+1.6L+S-T1
V3 MIN	-3700	295	-30	-27	-121	355	U-1.2D+1.6W+L33
V3 MAX	-2780	574	30	52	137	714	U-0.9D+1.6W12
M1 MIN	-6214	260	-25	-54	-198	435	U-1.2D+1.6L+S-T1
M1 MAX	-2733	730	26	54	198	684	U-1.2D+1.6L+S-T3
M2 MIN	-5900	254	-19	-45	-204	393	U-1.2D+1.6L+S-T4
M2 MAX	-2406	658	19	45	203	643	U-0.9D+1.6W7
M3 MIN	-4829	331	-16	-25	-163	291	U-1.2D+1.6L+S-T1+60+40
M3 MAX	-4098	561	20	44	138	873	U-1.2D+1.6L+S-T3-60-40
MIN	-6214	254	-30	-54	-204	291	
MAX	-2391	737	30	54	203	873	

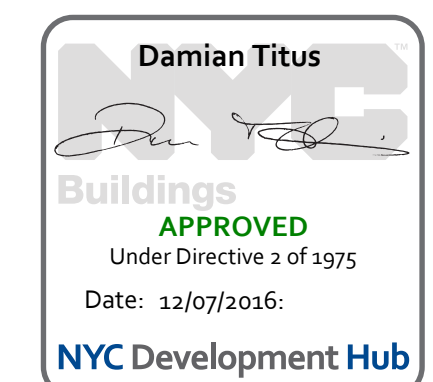
SPINE TO SPINE CONNECTION S04-05							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-1741	523	-12	-13	-6	-1159	U-1.2D+1.6L+S-T1-60-40
N MAX	-688	287	17	2	16	-430	U-0.9D+1.6W12
V2 MIN	-708	284	-10	-1	-8	-432	U-0.9D+1.6W7
V2 MAX	-1322	704	21	11	9	-797	U-1.2D+1.6L+S-T-60-40
V3 MIN	-1401	376	-37	-16	-17	-957	U-1.2D+1.6L+S-T2
V3 MAX	-959	562	39	15	17	-540	U-1.2D+1.6L+S-T4
M1 MIN	-1401	376	-37	-16	-17	-957	U-1.2D+1.6L+S-T2
M1 MAX	-959	562	39	15	17	-540	U-1.2D+1.6L+S-T4
M2 MIN	-1366	390	-29	-2	-22	-771	U-1.2D+1.6W+L33
M2 MAX	-934	522	31	0	22	-578	U-1.2D+1.6W+L60
M3 MIN	-1741	527	-17	-13	-8	-1163	U-1.2D+1.6L+S-T1-60-40
M3 MAX	-816	415	8	9	3	-415	U-1.2D+1.6L+S-T3
MIN	-1741	284	-37	-16	-22	-1163	
MAX	-688	704	39	15	22	-415	

01 DOCUMENT ISSUE 01 22 MAR 2015
02 DOCUMENT ISSUE 02 29 APR 2014
03 DOCUMENT ISSUE 03 13 MAY 2014
04 Issue Date

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Drawing Title

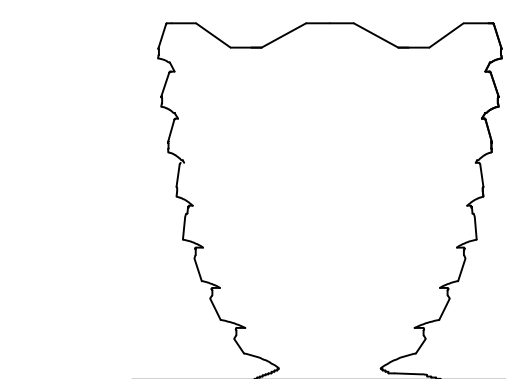


CONNECTION FORCES
SPINE 1

Project Number / BSCM Drawing Number
S-863.00

HUDSON YARDS VESSEL

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SPINE TO LANDING CONNECTION SL-03							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-3876	0	-2848	-190	1064	199	U-1.2D+1.6L+S-T1
N MAX	-1115	10	-1263	-155	359	152	U-0.9D+1.6W7
V2 MIN	-2169	-29	-2148	-22	546	-338	U-1.2D+1.6W+L60
V2 MAX	-2353	36	-2105	-270	638	526	U-1.2D+1.6W+L33
V3 MIN	-3088	4	-3577	-259	207	60	U-1.2D+1.6L+S-T1+60+40
V3 MAX	-1115	10	-1263	-155	359	152	U-0.9D+1.6W7
M1 MIN	-2069	14	-2804	-665	113	146	U-1.2D+1.6L+S+T2
M1 MAX	-2767	-7	-1773	304	1172	54	U-1.2D+1.6L+S-T4
M2 MIN	-1686	5	-2438	-189	90	-3	U-1.2D+1.6L+S+T3
M2 MAX	-2873	0	-1876	-121	1268	232	U-1.2D+1.6L+S-T
M3 MIN	-2139	-15	-2831	-86	124	-515	U-1.2D+1.6L+S+T4
M3 MAX	-2748	22	-1766	-226	1133	736	U-1.2D+1.6L+S-T2
MIN	-3876	-29	-3577	-665	90	-515	
MAX	-1115	36	-1263	304	1268	736	

SPINE TO LANDING CONNECTION SL-05							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	-150	2	-722	-62	288	0	U-1.2D+1.6L+S+T3
N MAX	736	6	834	75	14	-103	U-1.2D+1.6L+S-T1
V2 MIN	630	-17	493	-215	-136	-186	U-1.2D+1.6L+S-T2
V2 MAX	-32	38	-402	175	426	95	U-1.2D+1.6L+S+T4
V3 MIN	-77	0	-760	-77	278	-7	U-1.2D+1.6L+S+T
V3 MAX	736	6	834	75	14	-103	U-1.2D+1.6L+S-T1
M1 MIN	-90	-10	-673	-286	270	-81	U-1.2D+1.6L+S+T2
M1 MAX	687	31	765	245	20	-9	U-1.2D+1.6L+S-T4
M2 MIN	658	-10	606	22	-151	-120	U-1.2D+1.6L+S-T1
M2 MAX	-25	20	-405	-4	498	6	U-1.2D+1.6L+S+T
M3 MIN	630	-17	493	-215	-136	-186	U-1.2D+1.6L+S-T2
M3 MAX	-32	38	-402	175	426	95	U-1.2D+1.6L+S+T4
MIN	-150	-17	-760	-286	-151	-186	
MAX	736	38	834	245	498	95	

SPINE TO LANDING CONNECTION SL-07							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	379	-1	276	-12	-209	6	U-1.2D+1.6L+S+T3
N MAX	1910	-4	2377	-10	-391	14	U-1.2D+1.6L+S-T1
V2 MIN	1081	-42	1251	6	-332	0	U-1.2D+1.6W+L58
V2 MAX	994	36	1134	-32	-202	20	U-1.2D+1.6W+L35
V3 MIN	379	-1	276	-12	-209	6	U-1.2D+1.6L+S+T3
V3 MAX	1910	-4	2377	-10	-391	14	U-1.2D+1.6L+S-T1
M1 MIN	1070	19	1232	-228	-320	-130	U-1.2D+1.6W+L33
M1 MAX	1006	-25	1154	203	-214	151	U-1.2D+1.6W+L60
M2 MIN	1611	-6	1951	-16	-525	9	U-1.2D+1.6L+S-T1
M2 MAX	588	-1	637	-9	-54	11	U-1.2D+1.6L+S+T3
M3 MIN	1513	-25	1816	-174	-444	-172	U-1.2D+1.6L+S-T2
M3 MAX	713	19	772	148	-156	191	U-1.2D+1.6L+S+T4
MIN	379	-42	276	-228	-525	-172	
MAX	1910	36	2377	203	-54	191	

SPINE TO LANDING CONNECTION SL-09							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	558	-1	984	-7	-396	3	U-1.2D+1.6L+S+T3
N MAX	1670	-1	3230	-12	-732	12	U-1.2D+1.6L+S-T1
V2 MIN	987	-34	1789	19	-575	-6	U-1.2D+1.6W+L58
V2 MAX	974	32	1797	-40	-457	21	U-1.2D+1.6W+L35
V3 MIN	558	-1	984	-7	-396	3	U-1.2D+1.6L+S+T3
V3 MAX	1670	-1	3230	-12	-732	12	U-1.2D+1.6L+S-T1
M1 MIN	1273	6	2359	-146	-776	60	U-1.2D+1.6L+S-T4-60-40
M1 MAX	828	-8	1549	125	-360	-46	U-1.2D+1.6L+S+T2+60+40
M2 MIN	1349	-2	2505	-18	-977	9	U-1.2D+1.6L+S-T1
M2 MAX	730	0	1323	-5	-252	5	U-1.2D+1.6L+S+T3
M3 MIN	709	-32	1252	37	-454	-174	U-1.2D+1.6L+S+T2+60+40
M3 MAX	1399	30	2665	-56	-681	189	U-1.2D+1.6L+S-T4-60-40
MIN	558	-34	984	-146	-977	-174	
MAX	1670	32	3230	125	-252	189	

SPINE TO LANDING CONNECTION SL-11							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	462	2	1502	-3	-685	7	U-1.2D+1.6L+S+T3
N MAX	1297	2	3921	-6	-1109	14	U-1.2D+1.6L+S-T1
V2 MIN	739	-39	2205	-3	-933	-26	U-1.2D+1.6W+L58
V2 MAX	765	42	2336	-7	-766	45	U-1.2D+1.6W+L35
V3 MIN	466	17	1417	-7	-525	-13	U-0.9D+1.6W7
V3 MAX	1297	2	3921	-6	-1109	14	U-1.2D+1.6L+S-T1
M1 MIN	929	2	2777	-383	-1216	54	U-1.2D+1.6L+S-T4-60-40
M1 MAX	694	1	2195	372	-651	-35	U-1.2D+1.6L+S+T2+60+40
M2 MIN	985	1	2939	-10	-1501	10	U-1.2D+1.6L+S-T1
M2 MAX	466	17	1417	-7	-525	-13	U-0.9D+1.6W7
M3 MIN	559	-1	1751	89	-821	-175	U-1.2D+1.6L+S+T2
M3 MAX	1066	5	3227	-97	-1043	195	U-1.2D+1.6L+S-T4-60-40
MIN	462	-39	1417	-383	-1501	-175	
MAX	1297	42	3921	372	-525	195	

SPINE TO LANDING CONNECTION SL-13							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	419	16	1556	-1	-546	-9	U-0.9D+1.6W7
N MAX	1073	3	3983	-29	-1052	3	U-1.2D+1.6L+S-T1
V2 MIN	575	-47	2197	-316	-883	26	U-1.2D+1.6W+L60
V2 MAX	708	51	2591	266	-815	-24	U-1.2D+1.6W+L33
V3 MIN	419	16	1556	-1	-546	-9	U-0.9D+1.6W7
V3 MAX	1073	3	3983	-29	-1052	3	U-1.2D+1.6L+S-T1
M1 MIN	722	-19	2796	-580	-1158	32	U-1.2D+1.6L+S-T4
M1 MAX	671	23	2439	526	-699	-31	U-1.2D+1.6L+S+T2
M2 MIN	766	2	2954	-41	-1445	1	U-1.2D+1.6L+S-T1
M2 MAX	419	16	1556	-1	-546	-9	U-0.9D+1.6W7
M3 MIN	509	6	1969	101	-865	-138	U-1.2D+1.6L+S+T2
M3 MAX	880	-2	3272	-152	-988	139	U-1.2D+1.6L+S-T4-60-40
MIN	419	-47	1556	-580	-1445	-138	
MAX	1073	51	3983	526	-546	139	

SPINE TO LANDING CONNECTION SL-15							
	N	V2	V3	M1	M2	M3	COMBINATION
	KN	KN	KN	KN-m	KN-m	KN-m	
N MIN	727	6	1224	42	-652	-23	U-0.9D+1.6W7
N MAX	1739	-4	3060	13	-1151	3	U-1.2D+1.6L+S-T1
V2 MIN	1042	-26	1755	-97	-1069	-62	U-1.2D+1.6W+L58
V2 MAX	1142	21	1924	106	-899	47	U-1.2D+1.6W+L35
V3 MIN	727	6	1224	42	-652	-23	U-0.9D+1.6W7
V3 MAX	1739	-4	3060	13	-1151	3	U-1.2D+1.6L+S-T1
M1 MIN	922	-1	1475	-600	-1076	26	U-1.2D+1.6L+S+T4+60+40
M1 MAX	1457	-5	2543	611	-1086	-43	U-1.2D+1.6L+S-T2-60-40
M2 MIN	1307	-7	2292	7	-1597	-1	U-1.2D+1.6L+S-T1
M2 MAX	727	6	1224	42	-652	-23	U-0.9D+1.6W7
M3 MIN	921	-10	1475	134	-1076	-227	U-1.2D+1.6L+S+T2+60+40
M3 MAX	1463	3	2544	-124	-1086	210	U-1.2D+1.6L+S-T4
MIN	727	-26	1224	-600	-1597	-227	
MAX	1739	21	3060	611	-652	210	

01	DOCUMENT ISSUE 01	21 MAR 2015
02	DOCUMENT ISSUE 02	29 APR 2015
03	DOCUMENT ISSUE 03	13 MAY 2015
04	DOCUMENT ISSUE 04	13 MAY 2015
	Date	Date

Appr. Proc.

Title: _____
 Project No: 03/23/15
 Reason #: 731
 Sheet Number:
 Drawing Title:
 HYE-VS-S-864

Building APPROVED
 Under Directive 2 of 1975
 Date: 11/07/2015
 NYC Development Hub

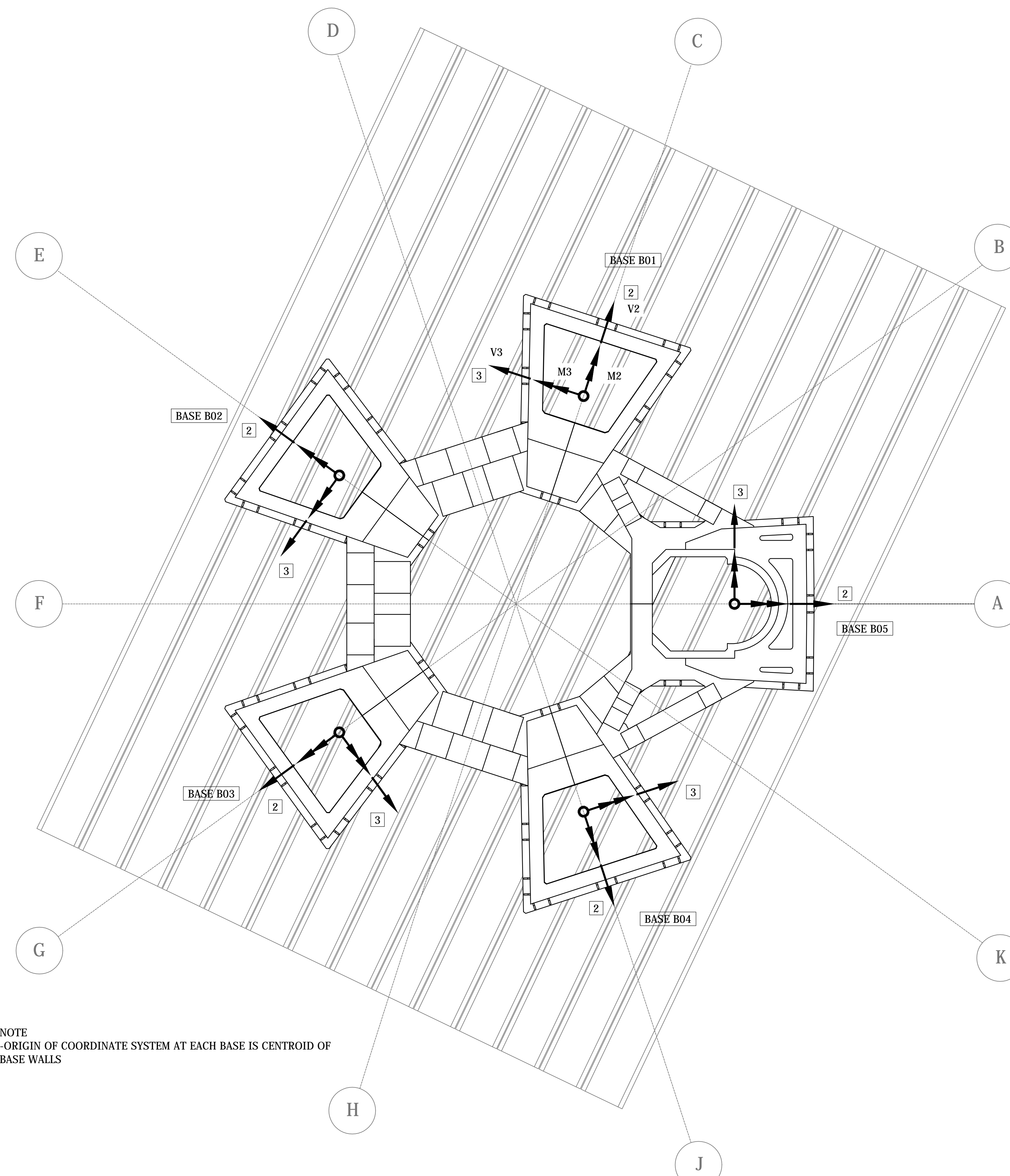
BASE B01							
	N	V2	V3	M1	M2	M3	COMBINATION
N MIN	-14730	-1940	1870	360	-4730	16160	U-1.2D+1.6L+S+T2+60+40
N MAX	-1990	660	1570	-810	-100	4250	U-1.2D+1.6W+L60
V2 MIN	-13850	-2270	2340	-360	-5280	13100	U-1.2D+1.6L+S-T2
V2 MAX	-3360	1860	1510	-560	410	12740	U-1.2D+1.6L+S+T4
V3 MIN	-4720	630	330	-2350	980	9980	U-0.9D+1.6W6
V3 MAX	-8190	-830	3340	2410	-4730	15770	U-1.2D+1.6W+L43
M1 MIN	-7500	550	730	-3240	470	13110	U-1.2D+1.6W+L42
M1 MAX	-8190	-830	3160	2480	-4730	11260	U-1.2D+1.6W+L19
M2 MIN	-11080	-1420	2890	1720	-6020	11120	U-1.2D+1.6W+L43
M2 MAX	-4640	1130	800	-2520	1490	13250	U-1.2D+1.6W+L30
M3 MIN	-4130	70	1310	-1460	-1110	800	U-1.2D+1.6W+L60
M3 MAX	-9760	240	2610	1360	-2570	24910	U-1.2D+1.6L+S-T2
MIN	-14730	-2270	330	-3240	-6020	800	
MAX	-1990	1860	3340	2480	1490	24910	

BASE B02							
	N	V2	V3	M1	M2	M3	COMBINATION
N MIN	-19880	-1740	610	-1020	-2940	14830	U-1.2D+1.6L+S+T3
N MAX	-5040	-1380	-310	-850	920	-940	U-0.9D+1.6W6
V2 MIN	-19470	-7890	-680	220	-1030	2360	U-1.2D+1.6L+S-T3
V2 MAX	-9440	1140	410	-1680	1860	11870	U-1.2D+1.6L+S+T1
V3 MIN	-16990	-3880	-1870	-3770	4880	8940	U-1.2D+1.6W+L33
V3 MAX	-9450	-2180	1550	2310	-3890	4580	U-1.2D+1.6W+L60
M1 MIN	-16990	-3880	-1870	-3770	4880	8940	U-1.2D+1.6W+L33
M1 MAX	-9450	-2180	1550	2310	-3890	4580	U-1.2D+1.6W+L60
M2 MIN	-10990	-2580	1190	1450	-5990	2550	U-1.2D+1.6W+L60
M2 MAX	-14060	-3140	-1480	-2860	6940	11900	U-1.2D+1.6W+L33
M3 MIN	-11830	-5820	-1240	-1360	2060	-4100	U-1.2D+1.6L+S-T1
M3 MAX	-14870	-400	890	-200	-1170	19820	U-1.2D+1.6L+S+T3
MIN	-19880	-7890	-1870	-3770	-5990	-4100	
MAX	-5040	1140	1550	2310	6940	19820	

BASE B03							
	N	V2	V3	M1	M2	M3	COMBINATION
N MIN	-17750	-2560	-60	-420	-3770	18960	U-1.2D+1.6W+L44
N MAX	-3510	-1220	210	1000	-1730	-1010	U-0.9D+1.6W5
V2 MIN	-17570	-4420	130	700	-3350	11190	U-1.2D+1.6L+S-T3
V2 MAX	-7330	30	430	800	-3680	11490	U-1.2D+1.6L+S+T1
V3 MIN	-9170	-2860	-1710	-2160	840	720	U-1.2D+1.6W+L23
V3 MAX	-12200	-1090	2180	3550	-7350	21500	U-1.2D+1.6W+L10
M1 MIN	-9170	-2860	-1710	-2160	840	720	U-1.2D+1.6W+L23
M1 MAX	-12760	-3000	1660	3580	-5010	21070	U-1.2D+1.6L+S-T4
M2 MIN	-14980	-1170	1680	2810	-9600	15910	U-1.2D+1.6W+L10
M2 MAX	-7560	-2550	-1240	-1490	2930	5060	U-1.2D+1.6W+L23
M3 MIN	-6710	-2580	-1250	-1210	60	-3680	U-1.2D+1.6W+L33
M3 MAX	-14650	-1370	1720	2600	-6560	25890	U-1.2D+1.6W+L60
MIN	-17750	-4420	-1710	-2160	-9600	-3680	
MAX	-3510	30	2180	3580	2930	25890	

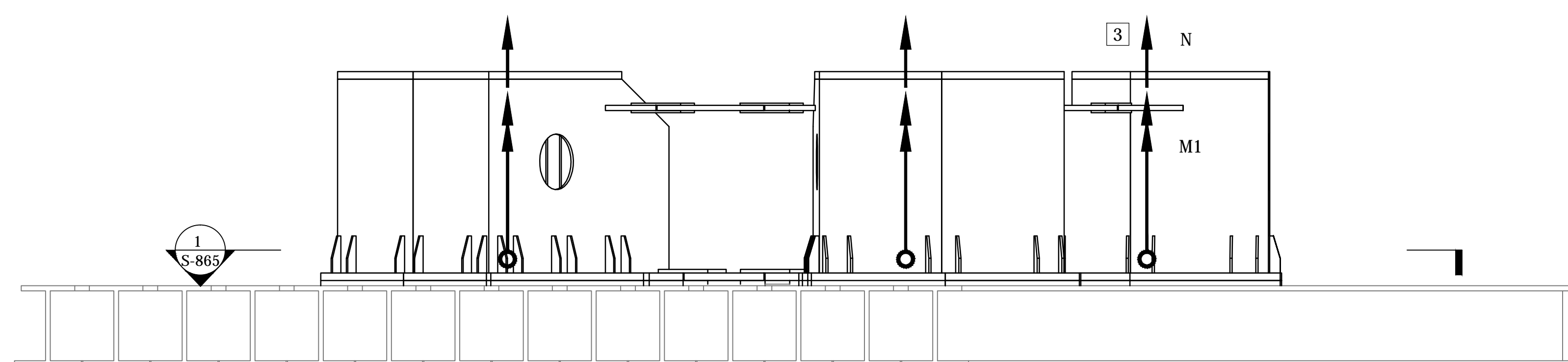
BASE B04							
	N	V2	V3	M1	M2	M3	COMBINATION
N MIN	-14480	-1570	-2740	-2020	4010	15800	U-1.2D+1.6L+S+T4+60+40
N MAX	-2420	-380	-1480	-70	1680	490	U-0.9D+1.6W11
V2 MIN	-7050	-2310	-3450	-3090	5890	5190	U-1.2D+1.6L+S-T3
V2 MAX	-8930	1260	-1620	2170	2070	21180	U-1.2D+1.6L+S+T1
V3 MIN	-10500	-1210	-3670	-3440	6940	11170	U-1.2D+1.6W+L20
V3 MAX	-5340	260	-440	2450	-740	9370	U-0.9D+1.6W5
M1 MIN	-7860	-1240	-3640	-3940	6940	9740	U-1.2D+1.6W+L44
M1 MAX	-7220	400	-980	3270	380	14880	U-1.2D+1.6W+L17
M2 MIN	-8170	70	-1100	2270	-780	12080	U-1.2D+1.6W+L17
M2 MAX	-7680	-890	-3320	-2850	8490	11320	U-1.2D+1.6W+L44
M3 MIN	-4380	-570	-2140	-250	1850	-580	U-1.2D+1.6W+L23
M3 MAX	-10010	390	-2030	-410	5630	26360	U-1.2D+1.6L+S+T4
MIN	-14480	-2310	-3670	-3940	-780	-580	
MAX	-2420	1260	-440	3270	8490	26360	

BASE B05 - SPINE							
	N	V2	V3	M1	M2	M3	COMBINATION
N MIN	-28250	320	410	-490	740	15370	U-1.2D+1.6L+S-T1-60-40
N MAX	-7150	-1100	960	570	-1830	640	U-0.9D+1.6W7
V2 MIN	-19350	-3680	1300	-1310	-5490	5640	U-1.2D+1.6L+S-T2
V2 MAX	-16230	3360	-150	670	5930	27530	U-1.2D+1.6L+S+T4
V3 MIN	-14280	880	-860	-2190	5000	16640	U-0.9D+1.6W10
V3 MAX	-14020	-880	1890	2330	-4320	9670	U-1.2D+1.6W+L23
M1 MIN	-20240	-2680	820	-3620	1790	7580	U-1.2D+1.6L+S-T4
M1 MAX	-15980	2520	410	2960	-1450	24020	U-1.2D+1.6L+S+T2
M2 MIN	-14770	-1270	1690	1530	-6870	9150	U-1.2D+1.6W+L23
M2 MAX	-18520	1130	-670	-2220	7510	22080	U-1.2D+1.6W+L10
M3 MIN	-16390	-3230	1260	-1740	-540	-5160	U-1.2D+1.6L+S-T3
M3 MAX	-18380	2920	-110	1110	990	38320	U-1.2D+1.6L+S+T1
MIN	-28250	-3680	-860	-3620	-6870	-5160	
MAX	-7150	3360	1890	2960	7510	38320	

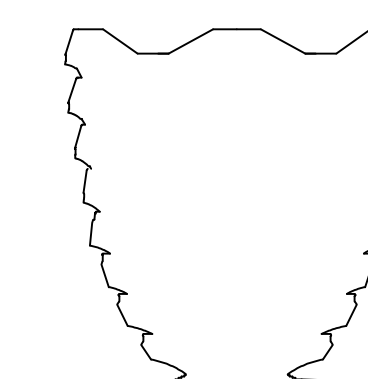


NOTE
-ORIGIN OF COORDINATE SYSTEM AT EACH BASE IS CENTROID OF BASE WALLS

1 PLAN
1:50



2 ELEVATION
1:50



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Related Companies
60 Columbus Circle
New York, NY 10023
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New York, NY 10005
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01	DOCUMENT ISSUE 01	21 MAR 2015
02	DOCUMENT ISSUE 02	29 APR 2014
03	DOCUMENT ISSUE 03	15 MAY 2014
04	Issue	Date

Rev. No.

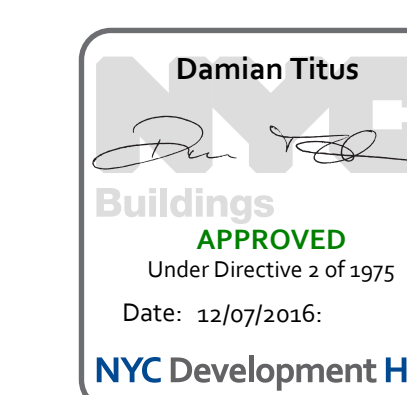
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Drawn By	

HYE-VS-S-865

BASE REACTIONS

Project Number: 8-SCM Project Number

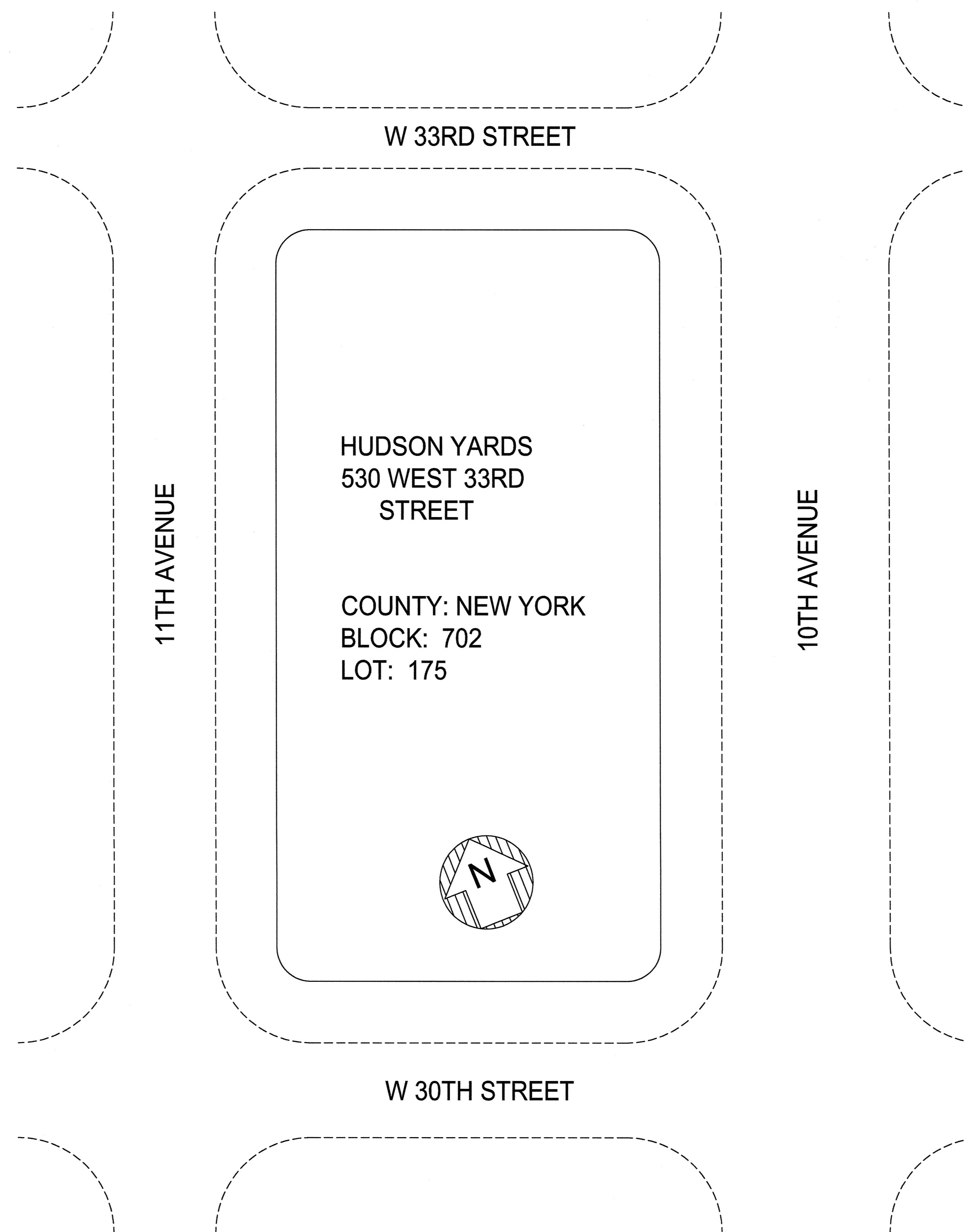
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APPROVED
Under Directive 2 of 1975
Date: 11/07/2015
NYC Development Hub

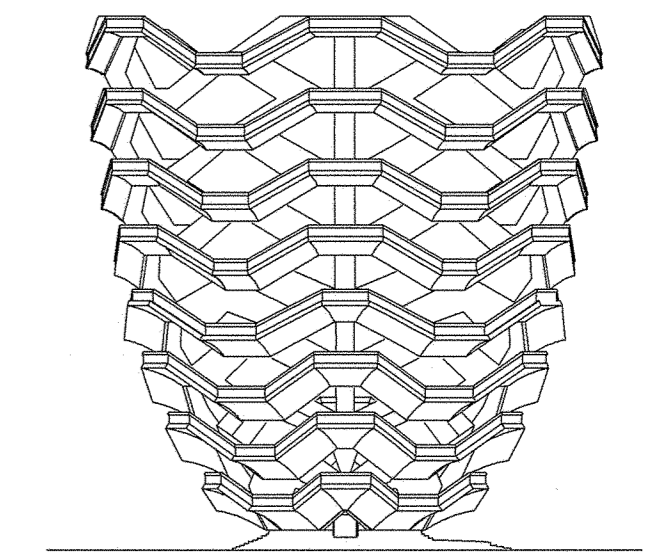
DRAWING INDEX						
No.	Drawing No.	Drawing Name	Issue Dates			
			05/20/16	ISSUED FOR FILING		
1	EN-001.00	NYC ECC COMPLIANCE COVER SHEET No. 1	●			
2	EN-002.00	NYC ECC COMPLIANCE COVER SHEET No. 2	●			
3	EN-100.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 1	●			
4	EN-101.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 2	●			
5	EN-102.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 3	●			
6	EN-103.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 4	●			
7	EN-104.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 5	●			
8	EN-105.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 6	●			
9	EN-106.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 7	●			
10	EN-107.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 8	●			
11	EN-108.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 9	●			
12	EN-109.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 10	●			
13	EN-110.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 11	●			
14	EN-111.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 12	●			
15	EN-112.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 13	●			
16	EN-113.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 14	●			
17	EN-114.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 15	●			
18	EN-115.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 16	●			
19	EN-116.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 17	●			
20	EN-117.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 18	●			
21	EN-118.00	NYC ECC COMPLIANCE LIGHTING CONFORMANCE SHEET No. 19	●			
22	EN-200.00	NYC ECC COMPLIANCE COMCHECK CONFORMANCE SHEET No. 1	●			
23	EN-201.00	NYC ECC COMPLIANCE COMCHECK CONFORMANCE SHEET No. 2	●			

KEY PLAN:



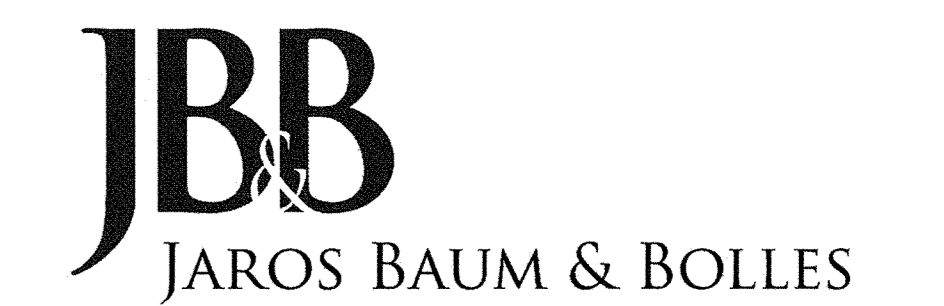
HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000

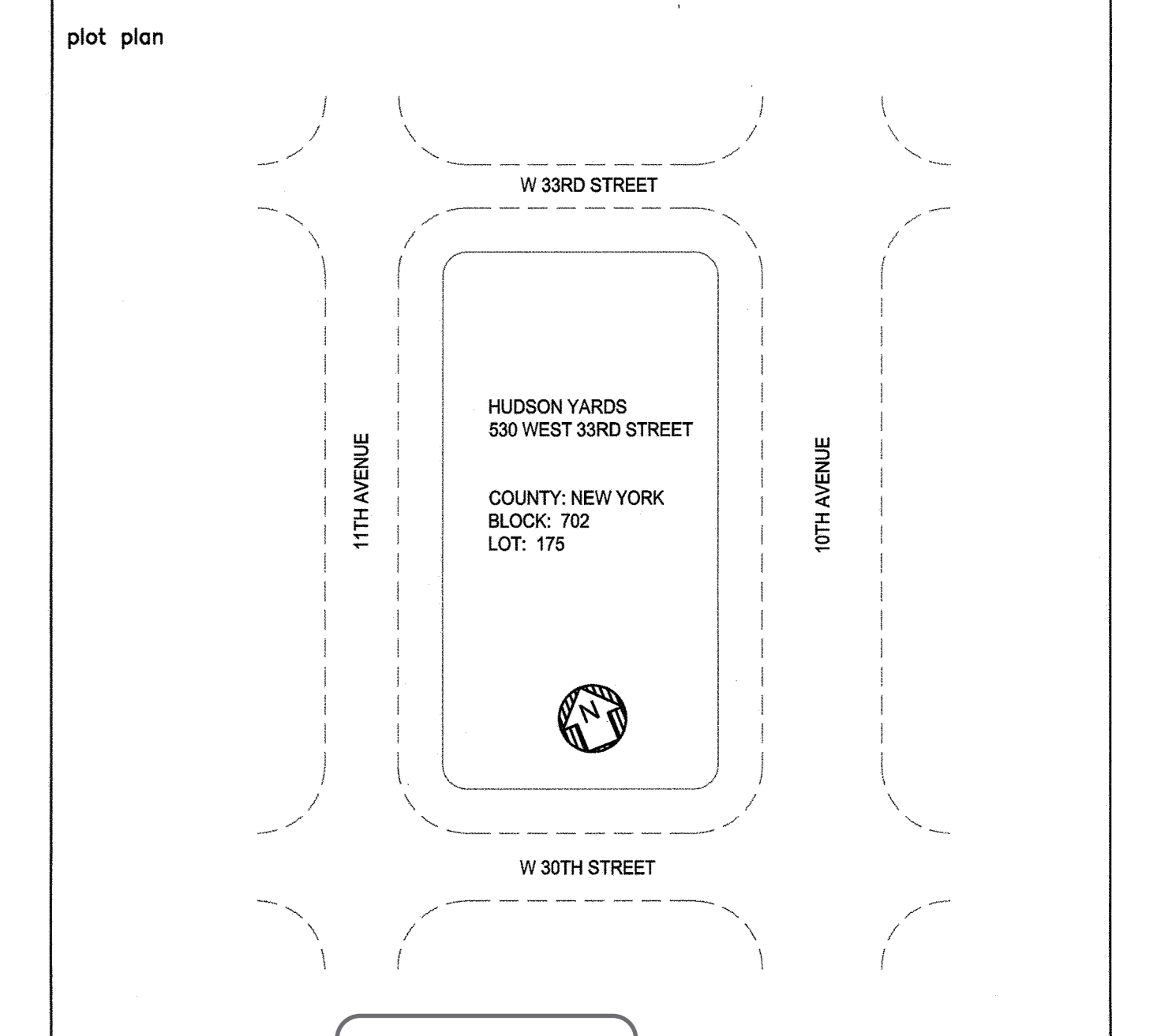


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REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	



PROFESSIONAL'S STATEMENT
TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2014 NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE
THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

HUDSON YARDS VESSEL
NYC ECC COMPLIANCE COVER SHEET No. 1
drawn by MG scale N.T.S. checked by CC
date 5/06/16 project no. 14986 rev 0
Damian Titus
Seal of the State of New York
Professional Engineer
No. 14986
EN-001.00
1 OF 23

NEW YORK CITY ENERGY CODE COMPLIANCE PROGRESS INSPECTIONS					
	INSPECTION/TEST	PERIODIC (MINIMUM)	REFERENCE STANDARD	ECC/ASHRAE SECTION	REQUIRED
IIA	ENVELOPE INSPECTIONS				
IIA1	PROTECTION OF EXPOSED FOUNDATION INSULATION: INSULATION SHALL BE VISUALLY INSPECTED TO VERIFY PROPER PROTECTION WHERE APPLIED TO THE EXTERIOR OF BASEMENT OR CELLAR WALLS, CRAWL-SPACE WALLS AND/OR THE PERIMETER OF SLAB-ON-GRADE FLOORS.	AS REQUIRED DURING FOUNDATION WORK AND PRIOR TO BACKFILL	APPROVED CONSTRUCTION DOCUMENTS.	C303.2.1; ASHRAE 90.1-5.8.1.7	
IIA2	INSULATION PLACEMENT AND R-VALUES: INSTALLED INSULATION FOR COMPONENT OF THE CONDITIONED SPACE ENVELOPE AND AT JUNCTIONS BETWEEN COMPONENTS SHALL BE VISUALLY INSPECTED TO ENSURE THAT THE R-VALUES ARE MARKED, THAT SUCH R-VALUES CONFORM TO THE R-VALUES IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AND THAT THE INSULATION IS PROPERLY INSTALLED. CERTIFICATIONS FOR UNMARKED INSULATION SHALL BE SIMILARLY VISUALLY INSPECTED.	AS REQUIRED TO VERIFY CONTINUOUS ENCLOSURE WHILE WALLS, CEILINGS AND FLOORS ARE OPEN	APPROVED CONSTRUCTION DOCUMENTS	C303.1, C303.1.1, C303.1.2, C402.1, C402.2, ASHRAE 90.1-5.5, 5.6 OR 11; 5.8.1	
IIA3	FENESTRATION U-FACTOR AND PRODUCT RATINGS: U-FACTORS AND SHGC VALUES OF INSTALLED FENESTRATION SHALL BE VISUALLY INSPECTED FOR CONFORMANCE WITH THE U-FACTORS AND SHGC VALUES IDENTIFIED IN THE CONSTRUCTION DRAWINGS BY VERIFYING THE MANUFACTURER'S NFRC LABELS OR, WHERE NOT LABELED, USING THE RATINGS IN ECC TABLES 303.1.3(1), (2) AND (3).	AS REQUIRED DURING INSTALLATION	APPROVED CONSTRUCTION DOCUMENTS; NFRC 100, NFRC 200	C303.1, C303.1.3; ASHRAE 90.1-5.5; 5.6 OR 11; 5.8.2	
IIA4	FENESTRATION AIR LEAKAGE: WINDOWS AND SLIDING OR SWINGING DOOR ASSEMBLIES, EXCEPT SITE-BUILT WINDOWS AND/OR DOORS, SHALL BE VISUALLY INSPECTED TO VERIFY THAT INSTALLED ASSEMBLIES ARE LISTED AND LABELED BY THE MANUFACTURER TO THE REFERENCED STANDARD. FOR CURTAIN WALL, STOREFRONT GLAZING, COMMERCIAL ENTRANCE DOORS AND REVOLVING DOORS, THE TESTING REPORTS SHALL BE REVIEWED TO VERIFY THAT THE INSTALLED ASSEMBLY COMPLIES WITH THE STANDARD CITED IN THE APPROVED PLANS.	AS REQUIRED DURING INSTALLATION; PRIOR TO FINAL CONSTRUCTION INSPECTION	NFRC 400, AAMA/WDMA/CSA 101/1.52/4440 ASTM E283; ANSI/DASMA 105	C402.4.3; ASHRAE 90.1-5.4.3.2	
IIA5	FENESTRATION AREAS: DIMENSIONS OF WINDOWS, DOORS AND SKYLIGHTS SHALL BE VERIFIED BY VISUAL INSPECTION.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C402.3; ASHRAE 90.1-5.5.4.2, 5.6 OR 11	
IIA6	AIR SEALING AND INSULATION - VISUAL INSPECTION: OPENINGS AND PENETRATIONS IN THE BUILDING ENVELOPE, INCLUDING SITE-BUILT FENESTRATION AND DOORS, SHALL BE VISUALLY INSPECTED TO VERIFY THAT A CONTINUOUS AIR BARRIER AROUND THE ENVELOPE FORMS AN AIR-TIGHT ENCLOSURE. THE PROGRESS INSPECTOR SHALL VISUALLY INSPECT TO VERIFY THAT MATERIALS AND/OR ASSEMBLIES HAVE BEEN TESTED AND MEET THE REQUIREMENTS OF THE RESPECTIVE STANDARDS, OR THAT THE BUILDING IS TESTED AND MEETS THE REQUIREMENTS OF THE STANDARD, IN ACCORDANCE WITH THE STANDARD(S) CITED IN THE APPROVED PLANS.	AS REQUIRED DURING CONSTRUCTION	APPROVED CONSTRUCTION DOCUMENTS; ASTM E2178, ASTM E2357, ASTM E1877, ASTM E779, ASTM E283	C402.4; ASHRAE 90.1-5.4.3.1	
IIA7	PROJECTION FACTORS: WHERE THE ENERGY ANALYSIS UTILIZED A PROJECTION FACTOR >0, THE PROJECTION DIMENSIONS OF OVERHANGS, EAVES OR PERMANENTLY ATTACHED SHADING DEVICES SHALL BE VERIFIED FOR CONFORMANCE WITH APPROVED PLANS BY VISUAL INSPECTION.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ENERGY ANALYSIS	C402.3; ASHRAE 90.1-5.5.4, 5.6 OR 11	
IIA8	LOADING DOCK WEATHERSEALS: WEATHERSEALS AT LOADING DOCKS SHALL BE VISUALLY VERIFIED.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C402.4.6; ASHRAE 90.1-5.4.3.3	
IIA9	VESTIBULES: REQUIRED ENTRANCE VESTIBULES SHALL BE VISUALLY INSPECTED FOR PROPER OPERATION.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C402.4.7; ASHRAE 90.1-5.4.3.4	
II B	MECHANICAL AND SERVICE WATER HEATING INSPECTION				
II B1	FIREPLACES: PROVISION OF COMBUSTION AIR AND TIGHT-FITTING FIREPLACE DOORS SHALL BE VERIFIED BY VISUAL INSPECTION.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS; ANSI ANSI Z21.60 (SEE ALSO MC 904), ANSI Z21.50	C402.2.9; BC 2111; MC CHAPTERS 7, 8, 9; FGC CHAPTER 6	
II B2	SHUTOFF DAMPERS: DAMPERS FOR STAIR AND ELEVATOR SHAFT VENTS AND OTHER OUTDOOR AIR INTAKES AND EXHAUST OPENINGS INTEGRAL TO THE BUILDING ENVELOPE SHALL BE VISUALLY INSPECTED TO VERIFY THAT SUCH DAMPERS, EXCEPT WHERE PERMITTED TO BE GRAVITY DAMPERS, COMPLY WITH APPROVED CONSTRUCTION DRAWINGS. MANUFACTURER'S LITERATURE SHALL BE REVIEWED TO VERIFY THAT THE PRODUCT HAS BEEN TESTED AND FOUND TO MEET THE STANDARD.	AS REQUIRED DURING INSTALLATION	APPROVED CONSTRUCTION DOCUMENTS; AMCA 500D	C403.2.4.4; ASHRAE 90.1-6.4.3.4	✓
II B3	HVAC AND SERVICE WATER HEATING EQUIPMENT: EQUIPMENT SIZING, EFFICIENCIES AND OTHER PERFORMANCE FACTORS OF ALL MAJOR EQUIPMENT UNITS, AS DETERMINED BY THE APPLICANT OF RECORD, AND NO LESS THAN 15% OF MINOR EQUIPMENT UNITS, SHALL BE VERIFIED BY VISUAL INSPECTION AND, WHERE NECESSARY, REVIEW OF MANUFACTURER'S DATA. POOL HEATERS AND COVERS SHALL BE VERIFIED BY VISUAL INSPECTION.	PRIOR TO FINAL PLUMBING AND CONSTRUCTION INSPECTION.	APPROVED CONSTRUCTION DOCUMENTS	C403.2, C404.2, C404.7; C406.2; ASHRAE 90.1-6.5, 6.4.1, 6.4.2, 6.8; 7.4, 7.8	✓
II B4	HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS: NO LESS THAN 20% OF EACH TYPE OF REQUIRED CONTROLS AND ECONOMIZERS SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION. SUCH CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO: • THERMOSTATIC • SET POINT OVERLAP RESTRICTION • OFF-HOUR • SHUTOFF DAMPER • SNOW-MELT SYSTEM • DEMAND CONTROL SYSTEMS • OUTDOOR HEATING SYSTEMS • ZONES • ECONOMIZERS • AIR SYSTEMS • VARIABLE AIR VOLUME FAN • SINGLE ZONE COOLING SYSTEMS • HYDRONIC SYSTEMS • HEAT REJECTION EQUIPMENT FAN SPEED • COMPLEX MECHANICAL SYSTEMS SERVING MULTIPLE ZONES • VENTILATION • ENERGY RECOVERY SYSTEMS • HOT GAS BYPASS LIMITATION • TEMPERATURE • SERVICE WATER HEATING • HOT WATER SYSTEM • POOL HEATER AND TIME SWITCHES • EXHAUST HOODS • RADIANT HEATING SYSTEMS • HVAC CONTROL IN GROUP R-1 SLEEPING ROOMS CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY: CONTROLS WHOSE COMPLETE OPERATION CANNOT BE DEMONSTRATED DUE TO PREVAILING WEATHER CONDITIONS TYPICAL OF THE SEASON DURING WHICH PROGRESS INSPECTIONS WILL BE PERFORMED SHALL BE PERMITTED TO BE SIGNED OFF FOR THE PURPOSE OF A TEMPORARY CERTIFICATE OF OCCUPANCY WITH ONLY A VISUAL INSPECTION, PROVIDED, HOWEVER, THAT THE PROGRESS INSPECTOR SHALL PERFORM A SUPPLEMENTAL INSPECTION WHERE THE CONTROLS ARE VISUALLY INSPECTED AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION DURING THE NEXT IMMEDIATE SEASON THEREAFTER. THE OWNER SHALL PROVIDE FULL ACCESS TO THE PROGRESS INSPECTOR WITHIN TWO WEEKS OF THE PROGRESS INSPECTOR'S REQUEST FOR SUCH ACCESS TO PERFORM THE PROGRESS INSPECTION. FOR SUCH SUPPLEMENTAL INSPECTIONS, THE DEPARTMENT SHALL BE NOTIFIED BY THE APPROVED PROGRESS INSPECTION AGENCY OF ANY UNRESOLVED DEFICIENCIES IN THE INSTALLED WORK WITHIN 180 DAYS OF SUCH SUPPLEMENTAL INSPECTION.	AFTER INSTALLATION AND PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION, EXCEPT THAT FOR CONTROLS WITH SEASONALLY DEPENDENT FUNCTIONALITY, SUCH TESTING SHALL BE PERFORMED BEFORE SIGN-OFF FOR ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES; ASHRAE GUIDELINE 1: THE HVAC COMMISSIONING PROCESS WHERE APPLICABLE	C403.2.4, C403.2.5.1, C403.2.11, C403.3, C403.4, C404.3, C404.6, C404.7; ASHRAE 90.1-6.5, 6.4, 6.5, 7.4.4, 7.4.5	✓

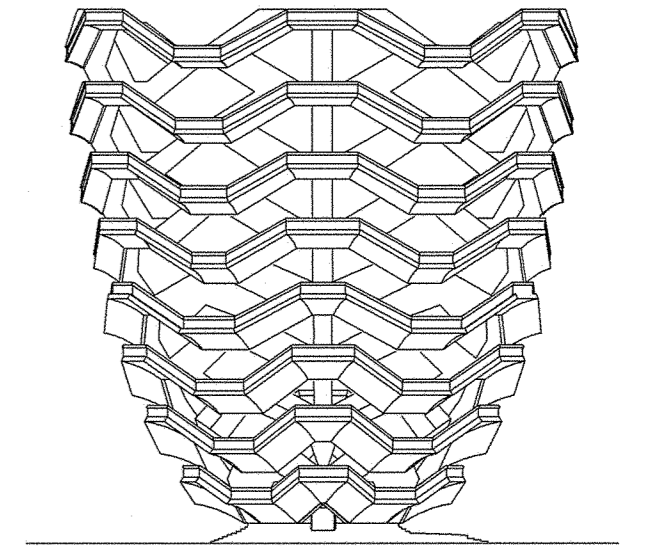
NEW YORK CITY ENERGY CODE COMPLIANCE PROGRESS INSPECTIONS (CONTINUED...)					
	INSPECTION/TEST	PERIODIC (MINIMUM)	REFERENCE STANDARD	ECC/ASHRAE SECTION	REQUIRED
II B5	HVAC INSULATION AND SEALING: INSTALLED DUCT AND PIPING INSULATION SHALL BE VISUALLY INSPECTED TO VERIFY PROPER INSULATION PLACEMENT AND VALUES. JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE VISUALLY INSPECTED FOR PROPER SEALING.	AFTER INSTALLATION AND PRIOR TO CLOSING SHAFTS, CEILINGS AND WALLS	APPROVED CONSTRUCTION DOCUMENTS; SMACNA DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE	C403.2.7, C403.2.8, C404.5; MC 603.9; ASHRAE 90.1-6.3, 6.4.4, 6.8.2, 6.8.3; 7.4.3	✓
II B6	AIR LEAKAGE TESTING FOR HIGH-PRESSURE DUCT SYSTEMS: FOR DUCT SYSTEMS DESIGNED TO OPERATE AT STATIC PRESSURES IN EXCESS OF 3 INCHES W.G. (746 PA), REPRESENTATIVE SECTIONS, AS DETERMINED BY THE PROGRESS INSPECTOR, TOTALING AT LEAST 25% OF THE DUCT AREA, PER ECC C403.2.7.1.3, SHALL BE TESTED TO VERIFY THAT ACTUAL AIR LEAKAGE IS BELOW ALLOWABLE AMOUNTS.	AFTER INSTALLATION AND SEALING AND PRIOR TO CLOSING SHAFTS, CEILINGS AND WALLS	APPROVED CONSTRUCTION DOCUMENTS; SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL	C403.2.7.1.3; ASHRAE 90.1-6.4.4.2.2	
II C	ELECTRICAL POWER AND LIGHTING SYSTEMS				
II C1	ELECTRICAL ENERGY CONSUMPTION: THE PRESENCE AND OPERATION OF INDIVIDUAL METERS OR OTHER MEANS OF MONITORING INDIVIDUAL APARTMENTS SHALL BE VERIFIED BY VISUAL INSPECTION FOR ALL APARTMENTS AND WHERE REQUIRED IN A COVERED TENANT SPACE.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.7	
II C2	LIGHTING IN DWELLING UNITS: LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE VISUALLY INSPECTED TO VERIFY COMPLIANCE WITH HIGH-EFFICIENCY REQUIREMENTS	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.5.1; ASHRAE 90.1-9.1.1	
II C3	INTERIOR LIGHTING POWER: INSTALLED LIGHTING SHALL BE VERIFIED FOR COMPLIANCE WITH THE LIGHTING POWER ALLOWANCE BY VISUAL INSPECTION OF FIXTURES, LAMPS, BALLASTS AND TRANSFORMERS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.5; C406.3; ASHRAE 90.1-9.4.3, 9.2, 9.5, 9.6; 1RCNY §101-07(c)(3)(V)(C)4	✓
II C4	EXTERIOR LIGHTING POWER: INSTALLED LIGHTING SHALL BE VERIFIED FOR COMPLIANCE WITH SOURCE EFFICACY AND/OR THE LIGHTING POWER ALLOWANCE BY VISUAL INSPECTION OF FIXTURES, LAMPS, BALLASTS AND RELEVANT TRANSFORMERS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.6; ASHRAE 90.1-9.4.3; 1RCNY §101-07(c)(3)(V)(C)4	✓
II C5	LIGHTING CONTROLS: EACH TYPE OF REQUIRED LIGHTING CONTROLS, INCLUDING: • OCCUPANT SENSORS • MANUAL INTERIOR LIGHTING CONTROLS • LIGHT-REDUCTION CONTROLS • AUTOMATIC LIGHTING SHUT-OFF • DAYLIGHT ZONE CONTROLS • SLEEPING UNIT CONTROLS • EXTERIOR LIGHTING CONTROLS SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED FOR FUNCTIONALITY AND PROPER OPERATION.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES	C405.2, ASHRAE 90.1-9.4.1 (AS MODIFIED BY SECTION ECC A102)	✓
II C6	EXIT SIGNS: INSTALLED EXIT SIGNS SHALL BE VISUALLY INSPECTED TO VERIFY THAT THE LABEL INDICATES THAT THEY DO NOT EXCEED MAXIMUM PERMITTED WATTAGE.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C405.4; ASHRAE 90.1-9.4.2	✓
II C7	ELECTRIC MOTORS (INCLUDING BUT NOT LIMITED TO FAN MOTORS): WHERE REQUIRED BY THE CONSTRUCTION DOCUMENTS FOR ENERGY CODE COMPLIANCE, MOTOR LISTING OR LABELS SHALL BE VISUALLY INSPECTED TO VERIFY THAT THEY COMPLY WITH THE RESPECTIVE ENERGY REQUIREMENTS IN THE CONSTRUCTION DOCUMENTS.	PRIOR TO FINAL ELECTRICAL AND CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	C403.2.10; ASHRAE 90.1-10.4	✓
II D	OTHER				
II D1	MAINTENANCE INFORMATION: MAINTENANCE MANUALS FOR MECHANICAL SERVICE HOT WATER AND ELECTRICAL EQUIPMENT AND SYSTEMS REQUIRING PREVENTIVE MAINTENANCE SHALL BE REVIEWED FOR APPLICABILITY TO INSTALLED EQUIPMENT AND SYSTEMS BEFORE SUCH MANUALS ARE PROVIDED TO THE OWNER. LABELS REQUIRED FOR SUCH EQUIPMENT OR SYSTEMS SHALL BE INSPECTED FOR ACCURACY AND COMPLETENESS.	PRIOR TO SIGN-OFF OR ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ELECTRICAL DRAWINGS WHERE APPLICABLE; ASHRAE GUIDELINE 4: PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS.	C303.3, C408.2.5.2; ASHRAE 90.1-4.2.2.3, 6.7.2.2, 8.7.2, 9.7.2.2	✓

NOTES:

- IN ACCORDANCE WITH SECTIONS BC 109.9 AND ECC 104.2.3, WHERE AN INSPECTION OR TEST FAILS, THE CONSTRUCTION SHALL BE CORRECTED, AND SHALL BE MADE AVAILABLE FOR REINSPECTION AND/OR RETESTING BY THE PROGRESS INSPECTOR UNTIL IT COMPLIES.
- IN ACCORDANCE WITH ARTICLE 116 OF TITLE 28 AND SECTION BC 109, CONSTRUCTION SHALL BE SCHEDULED TO ALLOW REQUIRED PROGRESS INSPECTIONS TO TAKE PLACE, AND THAT ROOFS, CEILINGS, EXTERIOR WALLS, INTERIOR WALLS, FLOORS, FOUNDATIONS, BASEMENTS AND ANY OTHER CONSTRUCTION SHALL NOT BE COVERED OR ENCLOSED UNTIL REQUIRED PROGRESS INSPECTIONS ARE COMPLETED OR THE PROGRESS INSPECTOR INDICATES THAT SUCH COVERING OR ENCLOSURE MAY PROCEED, AT EACH STAGE OF CONSTRUCTION, AS APPLICABLE.

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000

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JAROS BAUM & BOLLES

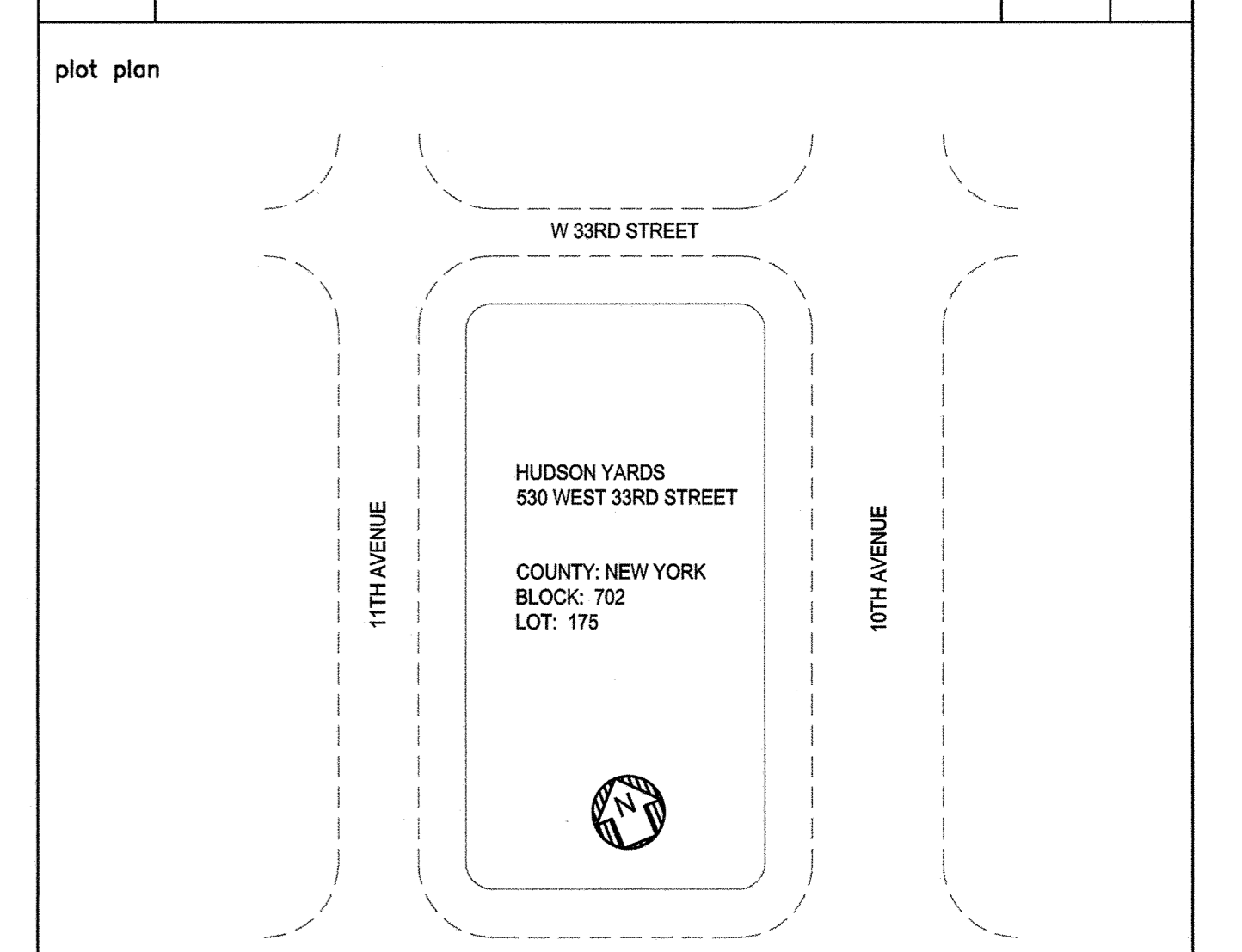
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PACE PLUMBING CORP.

41 BOX STREET HAROLD BLOCK
BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
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BUILDING DEPARTMENT NOTE

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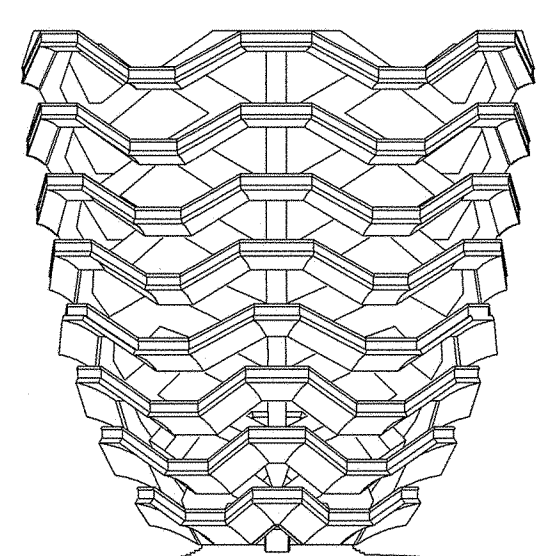
Darman Titus
APPROVED
DATE: 05/20/16
NYC ECC COMPLIANCE COVER SHEET No. 2
drawn by: MG
scale: N.T.S.
date: 5/06/16
project no.: 14986
rev: 0
EN-002.00
12 OF 23

INTERIOR LIGHTING DESIGN ENERGY ANALYSIS		
OCCUPANCY : BACK OF HOUSE PROJECT IS BACK OF HOUSE SPACES TO SUPPORT EXTERIOR STAIRWELL.		
NYCECC - 2014		
ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE-PREScribed VALUE
LIGHTING POWER DENSITY	12899 W	15748 W
INTERIOR LIGHTING CONTROL NARRATIVE		
LIGHTING FIXTURES ARE TO BE CONTROLLED VIA MANUAL ON/AUTO-OFF TIMER SWITCH SET FOR 30 MINUTE INTERVALS.		

EXTERIOR LIGHTING DESIGN ENERGY ANALYSIS		
OCCUPANCY : EXTERIOR STAIR PROJECT IS FOR 16 LEVEL EXTERIOR STAIRWELL.		
NYCECC - 2014		
ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE-PREScribed VALUE (LIGHTING ZONE: 4)
EXTERIOR LIGHTING POWER	134 W	2094W (794 W + 1300 W SUPPLEMENTAL)
EXTERIOR LIGHTING CONTROL NARRATIVE		
ALL EXTERIOR LIGHTING SHALL BE PROVIDED WITH A CONTROL THAT AUTOMATICALLY TURNS OFF THE LIGHTING WHEN DAYLIGHT IS AVAILABLE VIA PHOTO SENSOR ON THE EXTERIOR.		
ALL STAIRWELL LIGHTING SHALL BE UN-SWITCHED NIGHT LIGHTS FOR 24/7 HOUR OPERATION.		

HUDSON YARDS VESSEL

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RELATED COMPANIES

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PACE PLUMBING CORP.

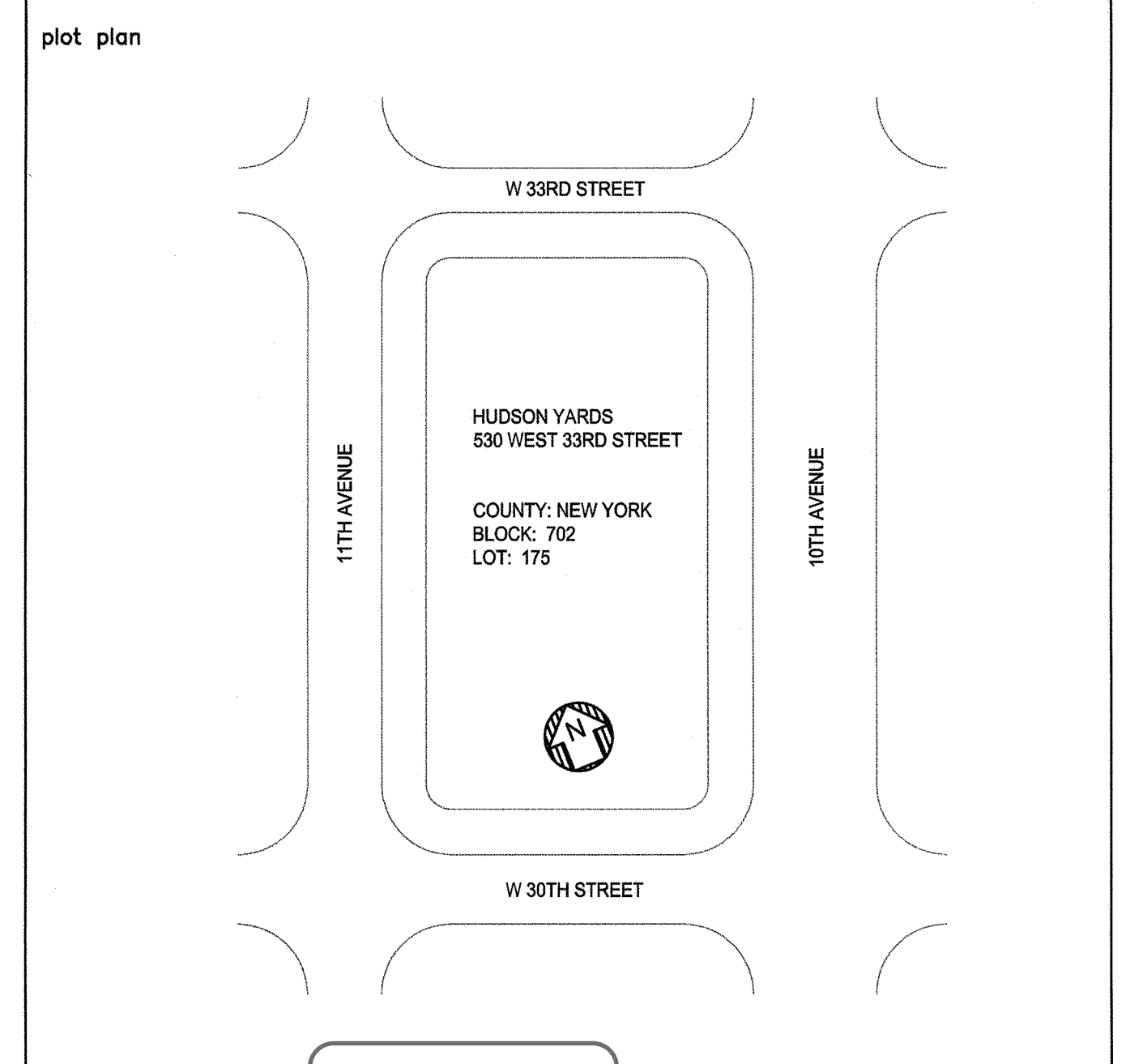
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BROOKLYN, NEW YORK 11222
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HAROLD BLOCK
MASTER PLUMBER LIC # 0195

LIGHTING FIXTURE SCHEDULE										
TYPE	SYMBOL	DESCRIPTION	UNITS	LAMPS			CONTROL GEAR		TOTAL WATTS PER UNIT	LOCATION
				QTY PER FIXTURE	TYPE	WATTS	VOLTS	TYPE		
PRE06	⊖	HI-OUTPUT QUAD LED FIXTURE	EA	1	LED	237W	120V/ 277V	ELECTRONIC	237W	PLATFORM
STE04	—	NON-DIMMABLE OUTDOOR RATED SURFACE MOUNT LED LIGHT	LF	1	LED	4W	120V/ 277V	ELECTRONIC	4W	STAIRWELL LIGHTING
STE15	—	DIMMABLE OUTDOOR RATED SURFACE MOUNT LED	LF	1	LED	4W	120V/ 277V	ELECTRONIC	4W	STAIRWELL LIGHTING
DIF232	□	NON-DIMMABLE LIGHT FIXTURE FOR BOH SPACE	EA	2	FLR	32W	120V/ 277V	ELECTRONIC	64W	MER/EMR/LV RM
EXIT	⊙	EXIT LIGHT	FACE	1	LED	2.7W	120V/ 277V	ELECTRONIC	2.7W	MER/LV RM

SYMBOL LIST (POWER AND LIGHTING)	
SYMBOL	DESCRIPTION
S ^z	STAND ALONE WALL MOUNTED TIMER SWITCH WITH INTEGRAL ASTRONOMICAL TIME CLOCK BOTTOM LETTER DENOTES ZONE

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NYC ECC COMPLIANCE WITH LIGHTING CONFORMANCE

SHEET No. 1

drawn by AP scale N.T.S. date 5/06/16

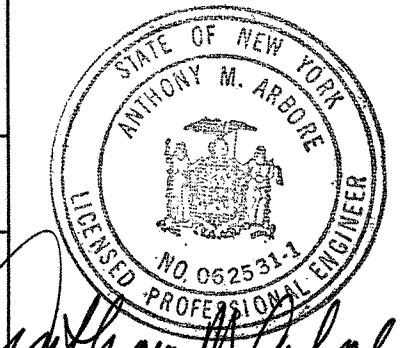
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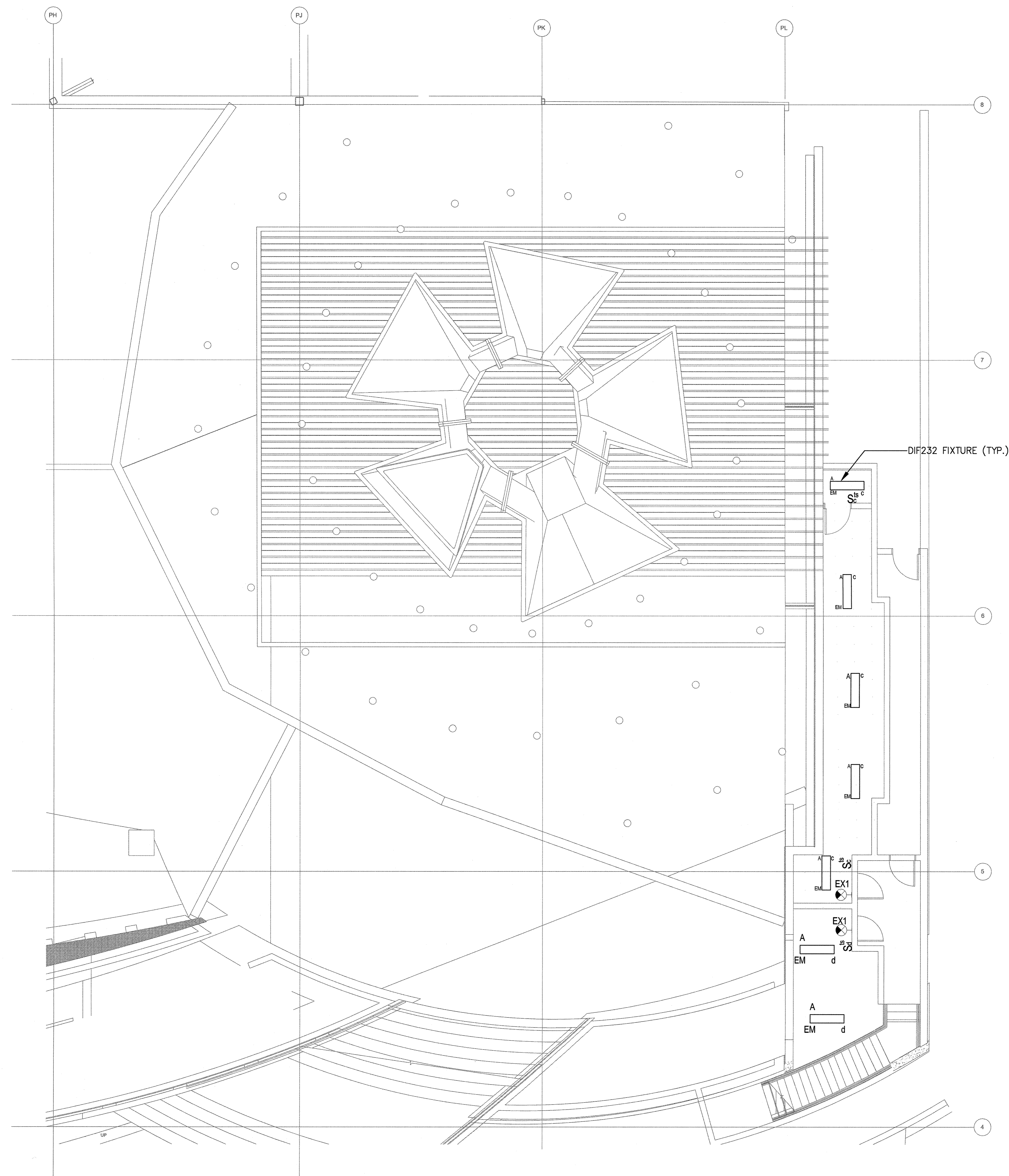
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rev 0

EN-100.00

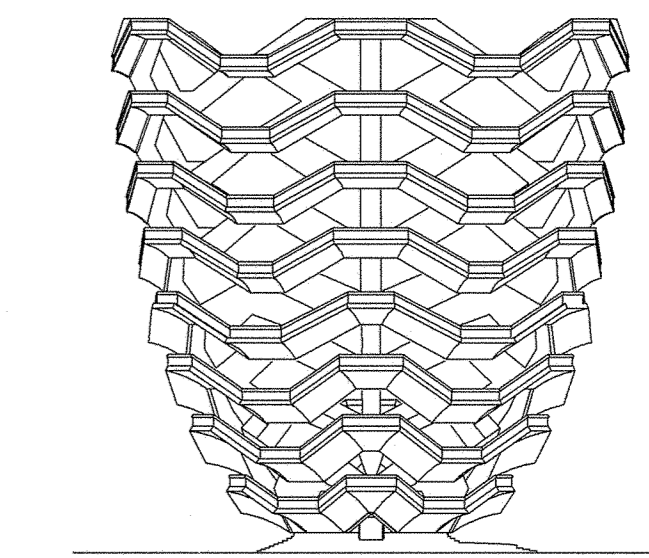
3 OF 23





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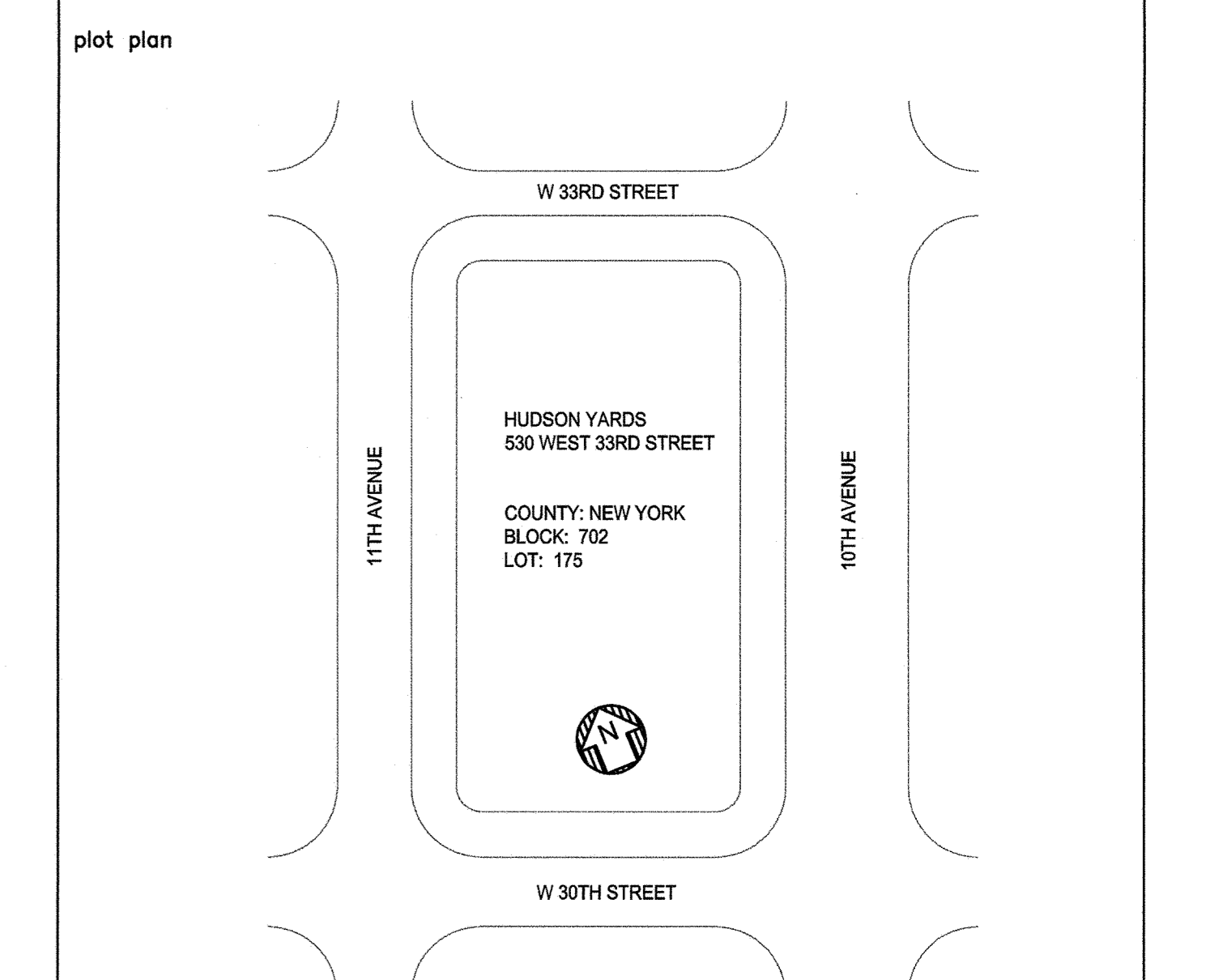
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PACE PLUMBING CORP.

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NYC ECC COMPLIANCE CERTIFICATION CONFORMANCE SHEET No. 2

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date 5/06/16

project no. 14986

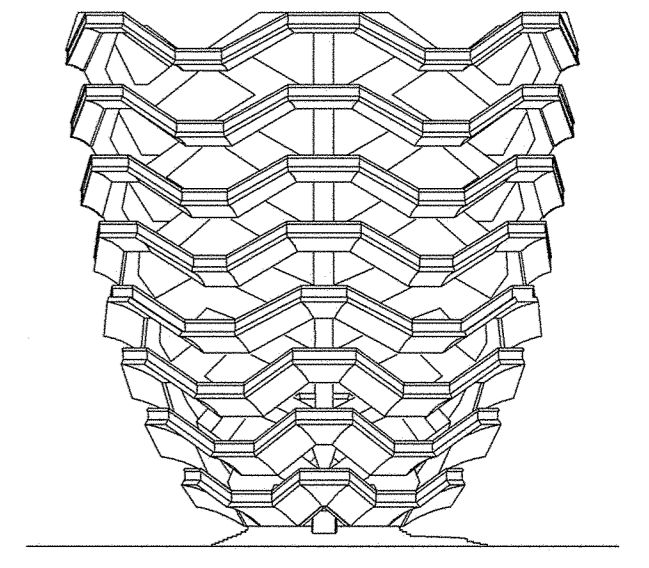
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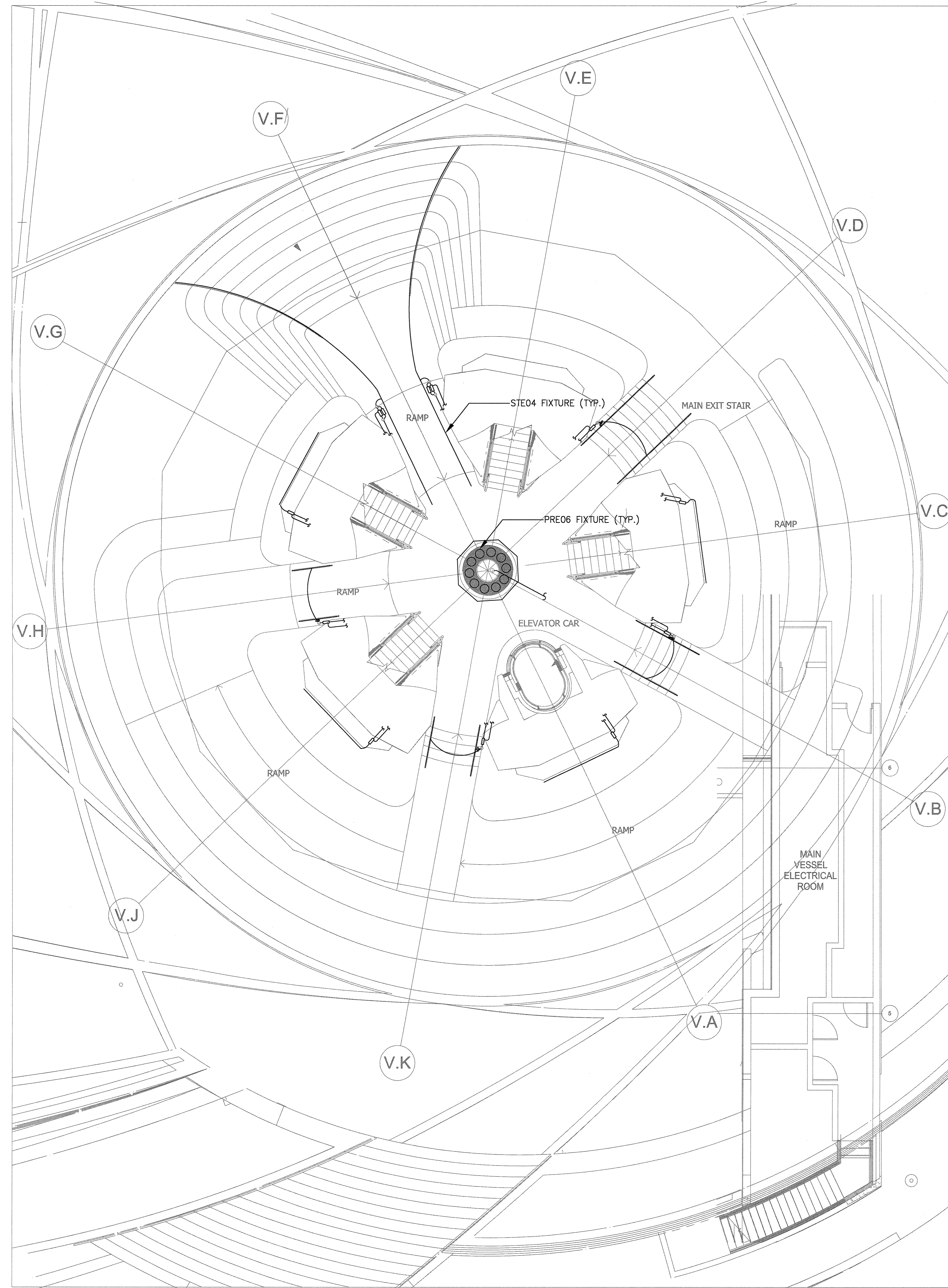


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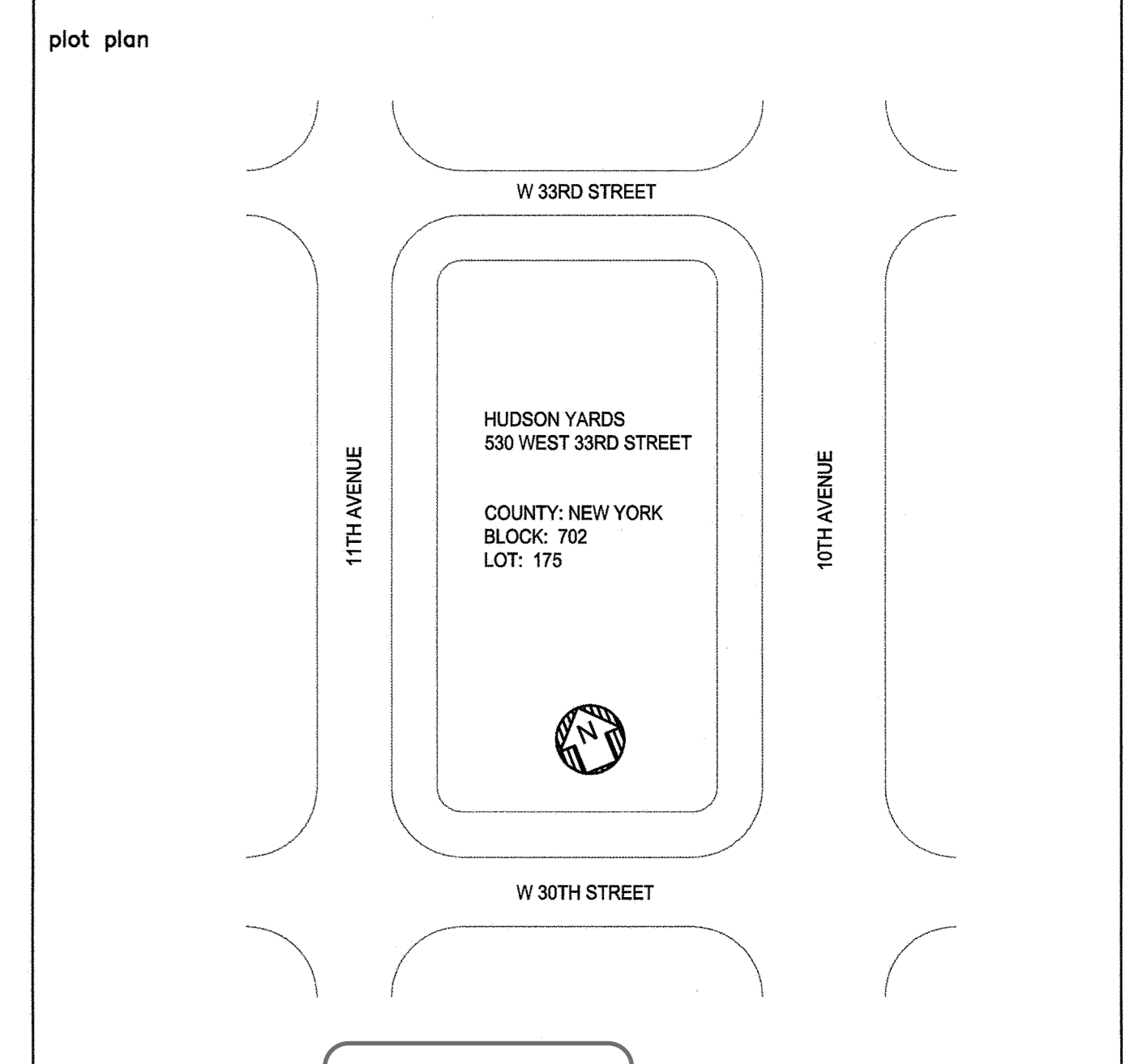
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APPROVED

NYC ECC COMPLIANCE LIGHTING CONFORMANCE

SHEET No. 3

scale 3/16"=1'-0"

drawn by AP

date 5/06/16

project no. 14986

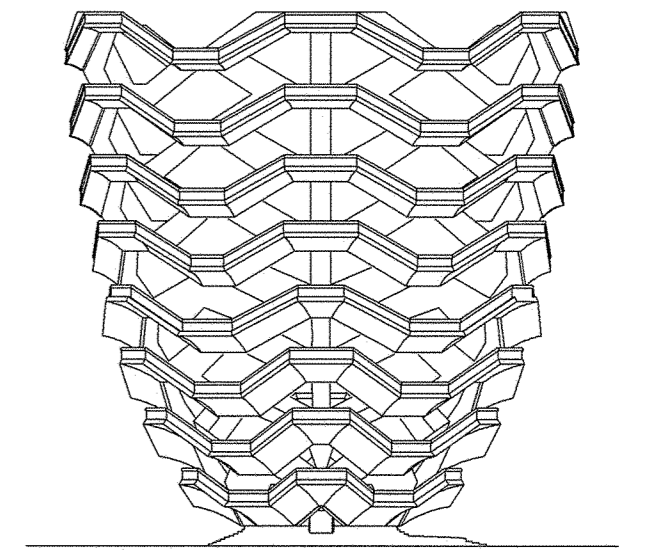
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5 OF 23

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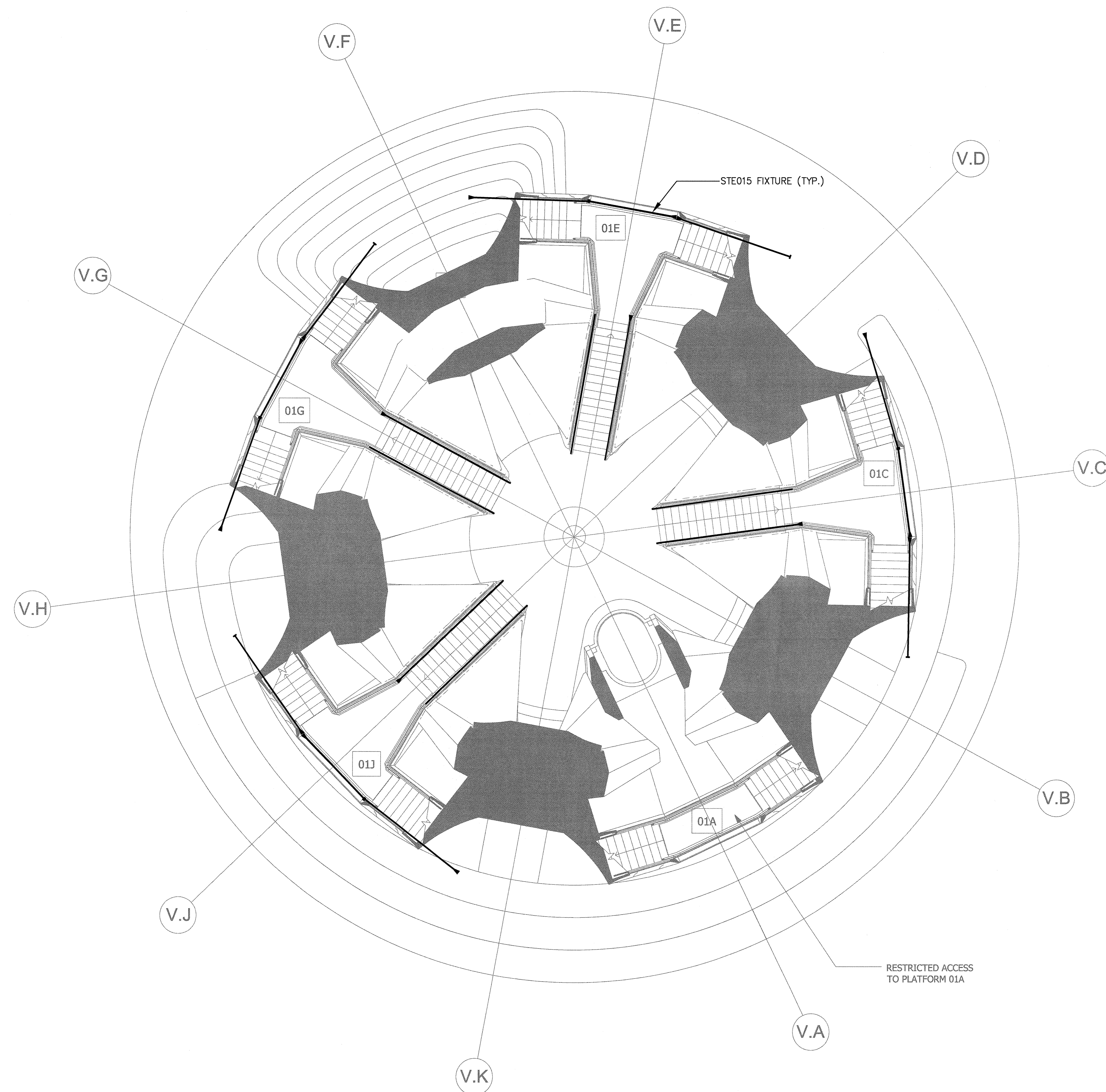
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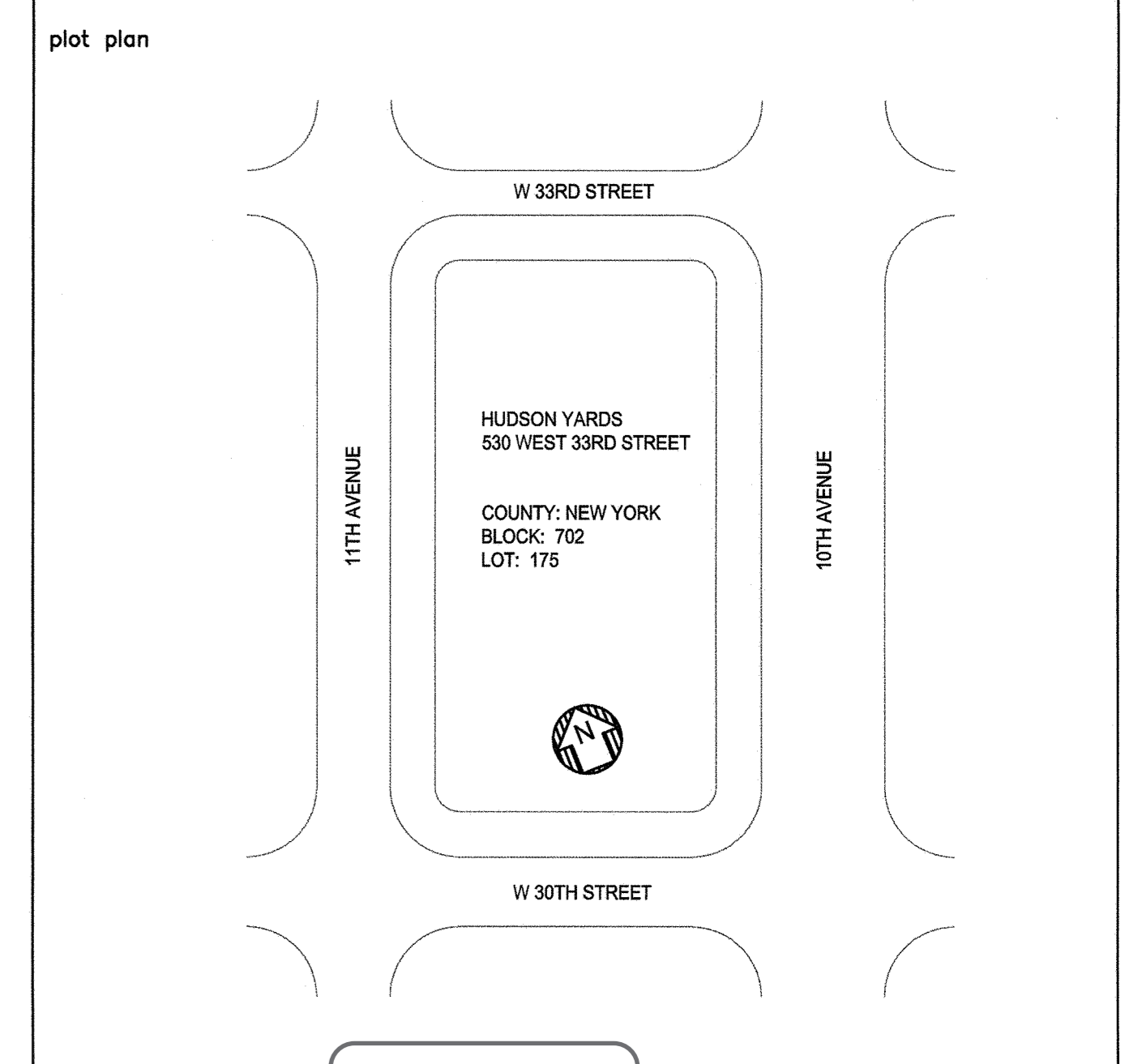
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NYC ECC COMPLIANCE LIGHTING CONFORMANCE

SHEET No. 4

Scale: 3/16"=1'-0"

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Date: 5/06/16

Project no.: 14986

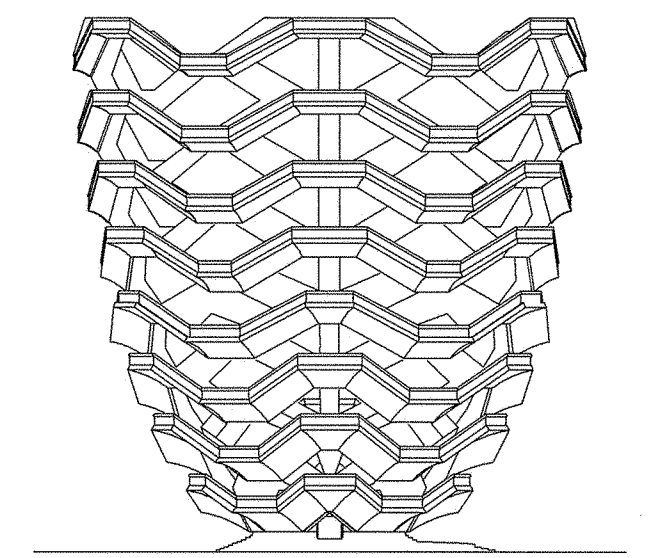
Rev: 0

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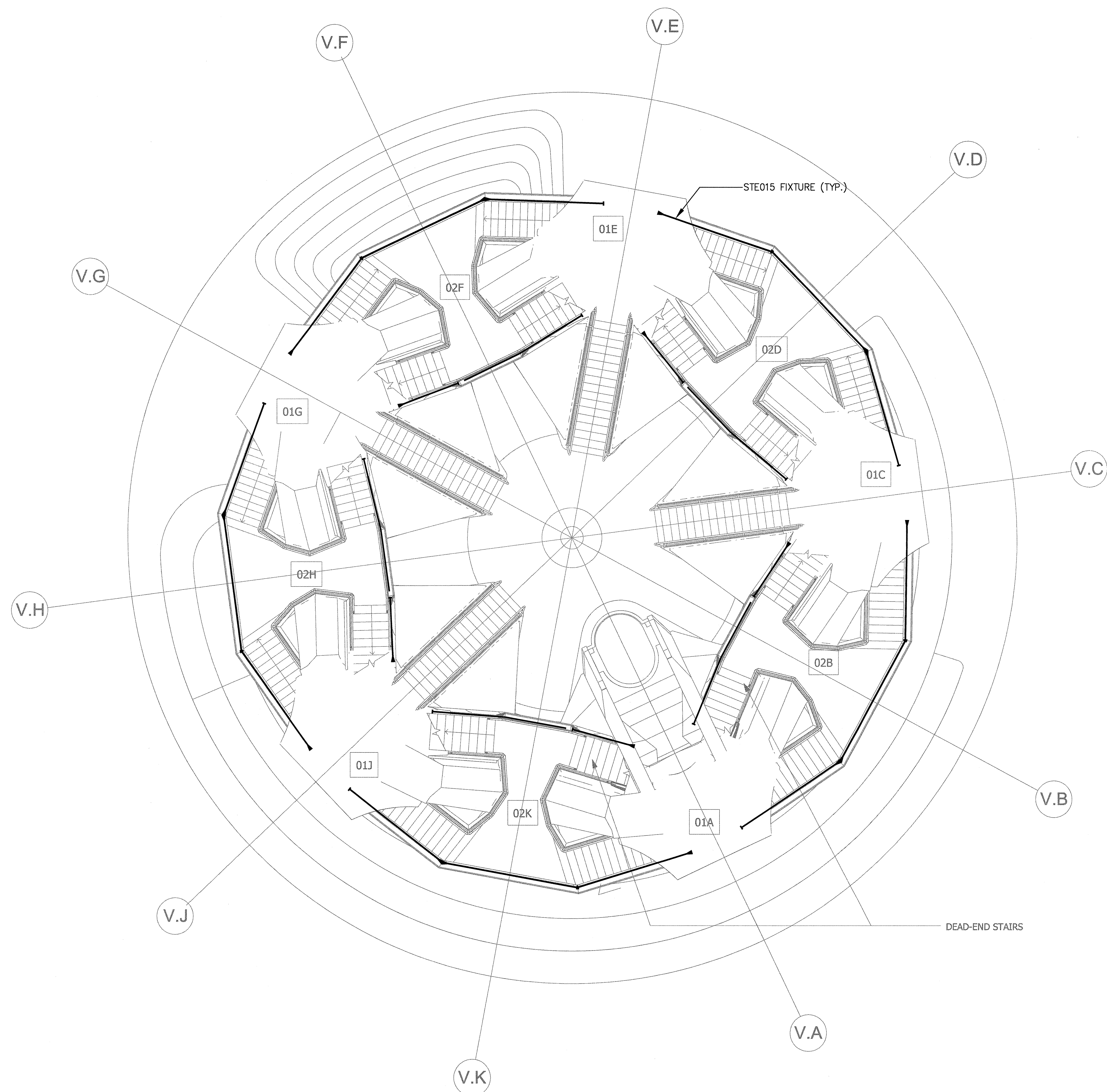
60 COLUMBUS CIRCLE
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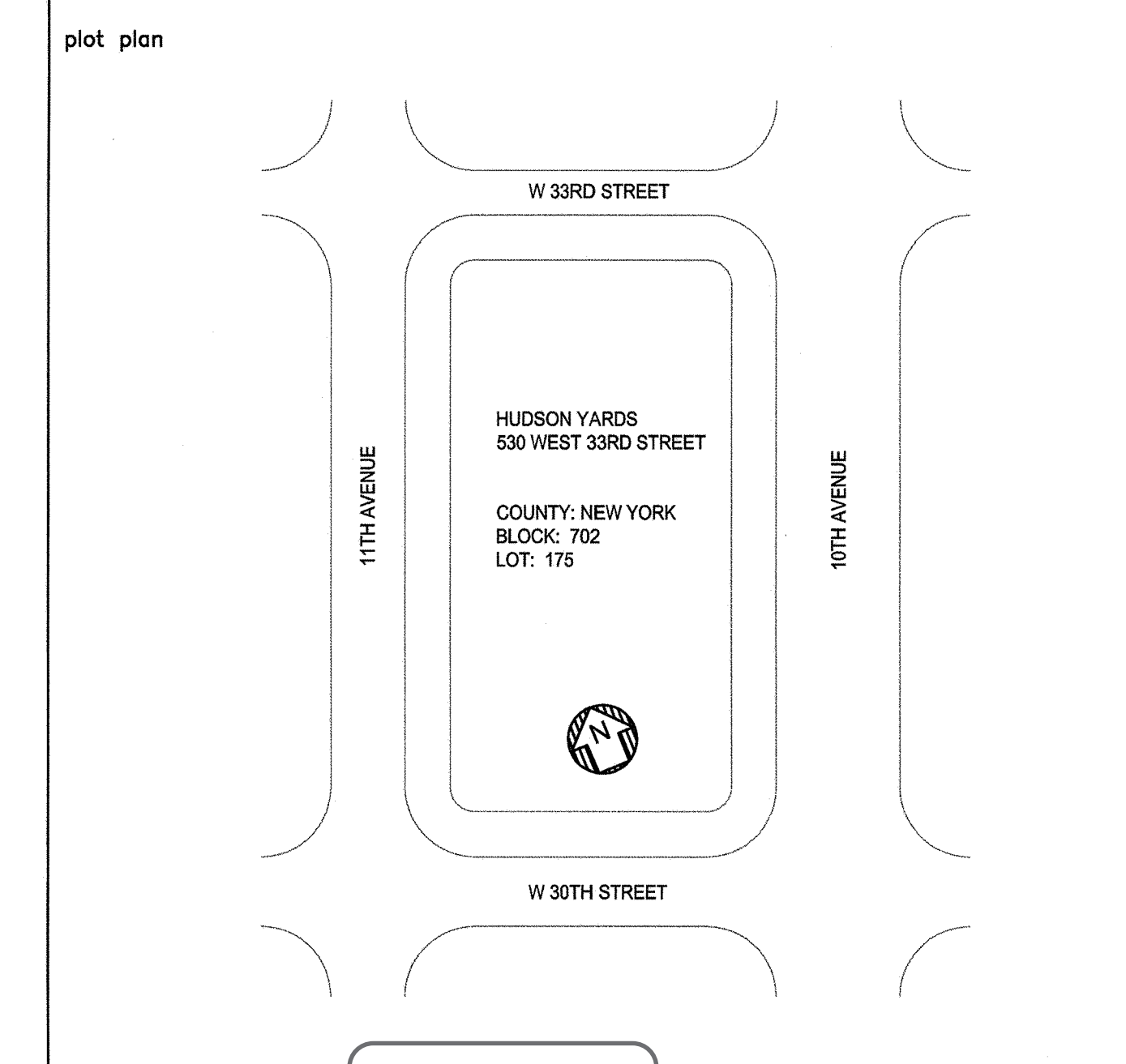
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NYC ECC COMPLIANCE LISTING CONFORMANCE

SHEET No. 5

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date 5/06/16

project no. 14986

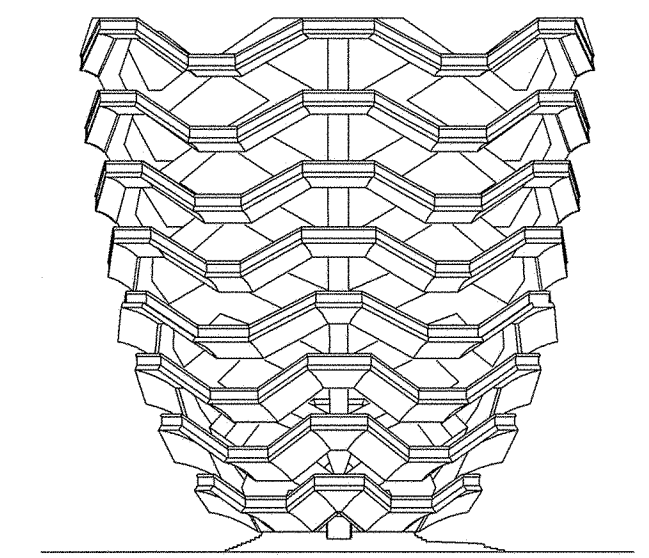
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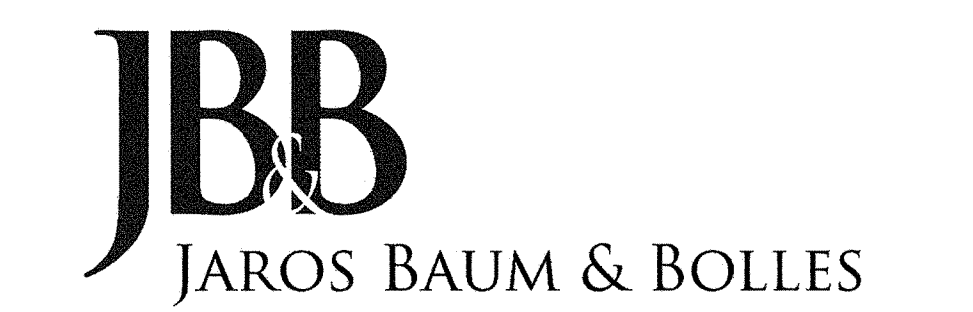
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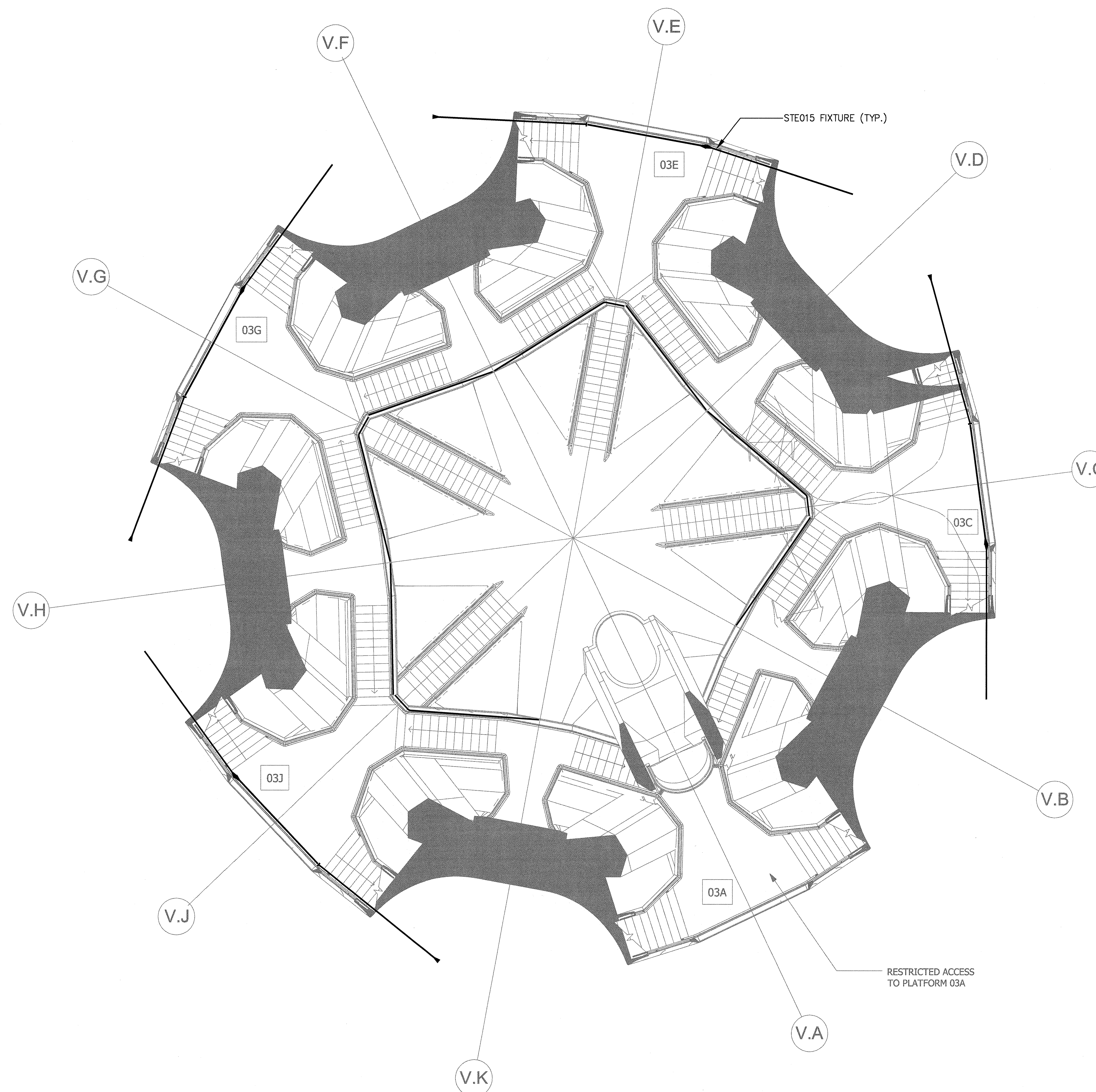
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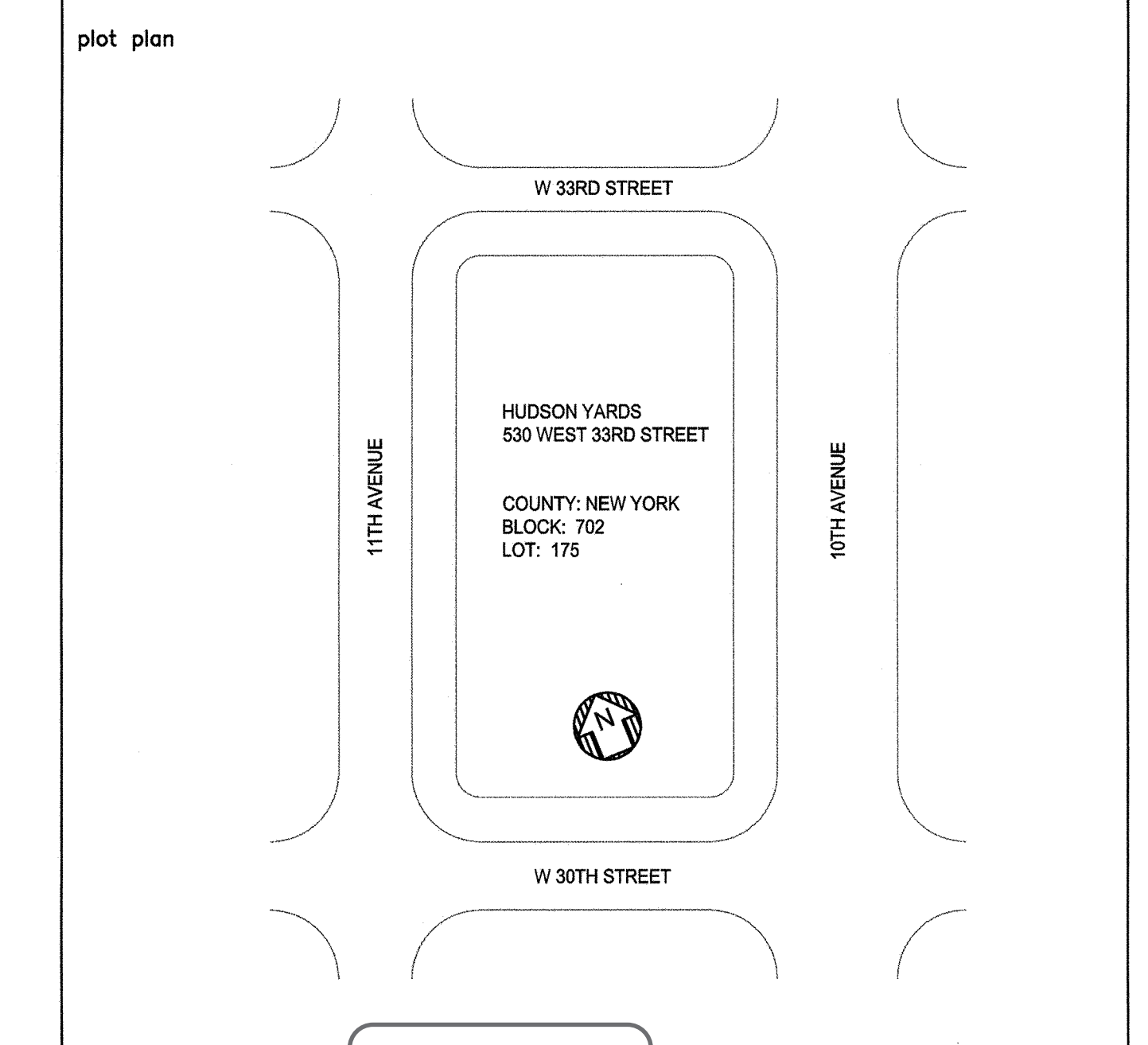
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APPROVED

NYC ECC COMPLIANCE, LIGHTING CONFORMANCE

SHEET No. 6

drawn by: AP scale: 3/16"=1'-0" date: 5/06/16

checked by: [Signature] date: [Blank]

project no.: 14986 rev: 0

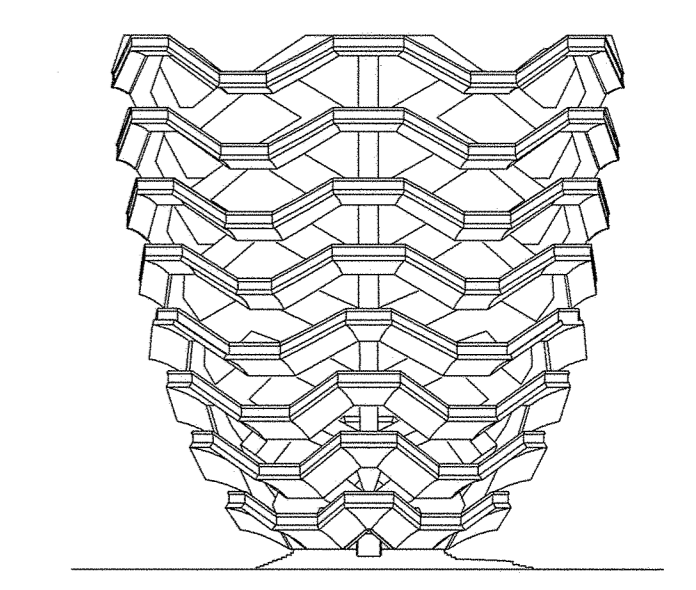
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RELATED COMPANIES

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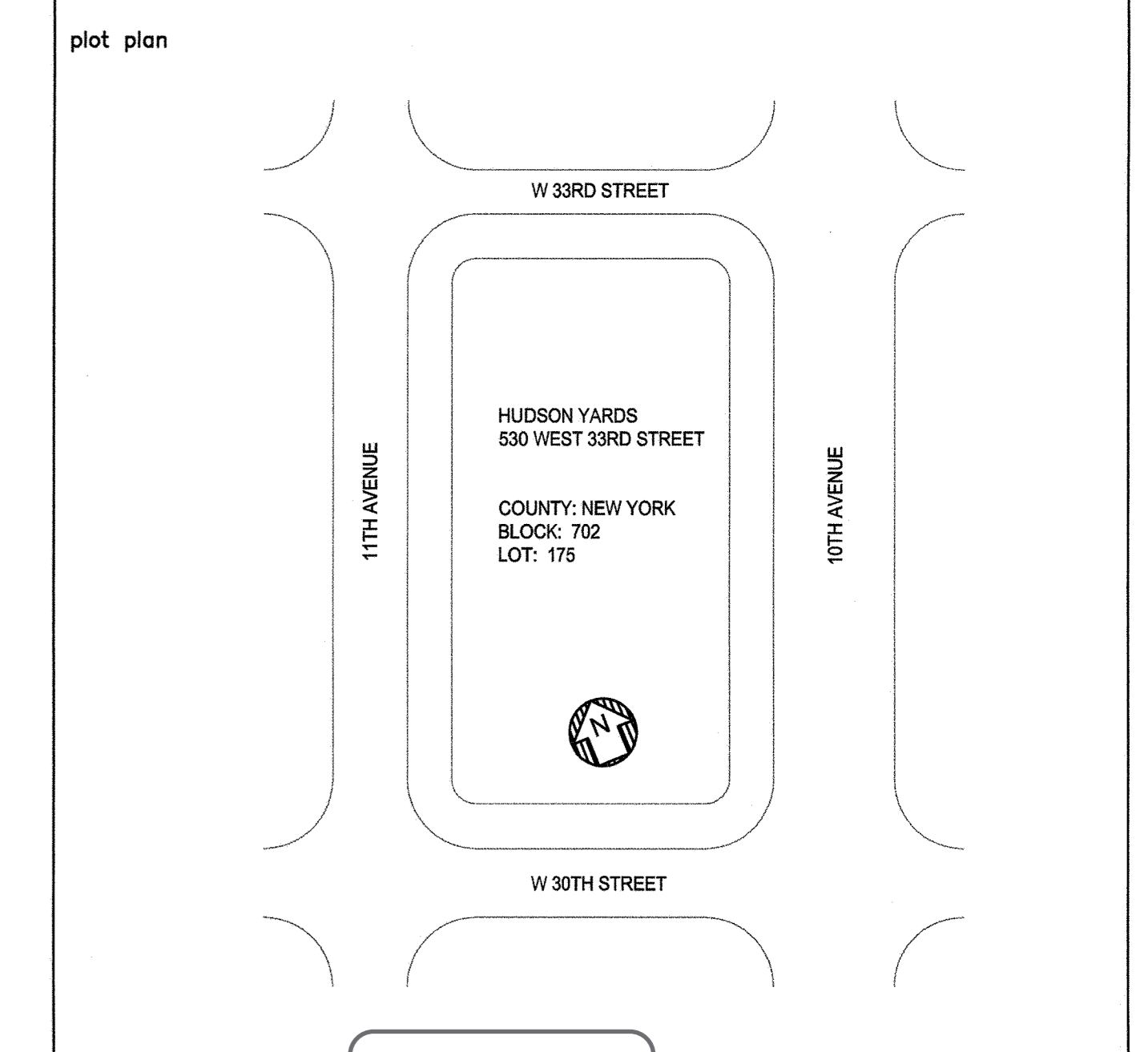
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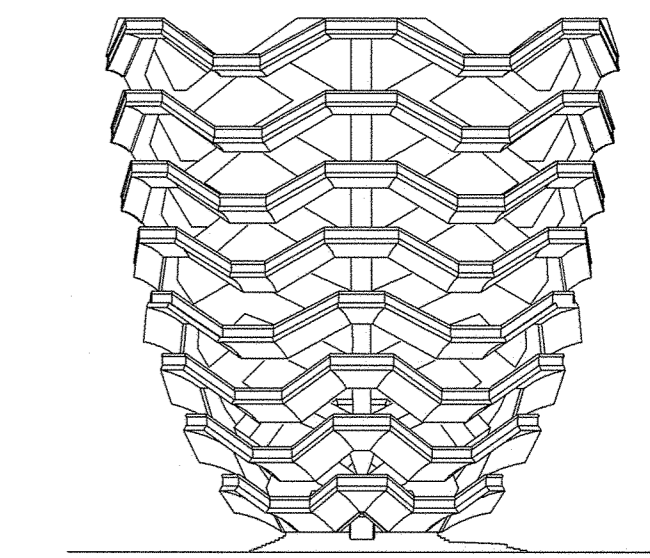
PROFESSIONAL'S STATEMENT
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SHEET No. 7
NYC ECC COMPLIANCE, LIGHTING CONFORMANCE
Scale: 3/16"=1'-0"
date: 5/06/16 project no.: 14986 rev: 0
EN-106.00
AP: [Signature] DP: [Signature]
1 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
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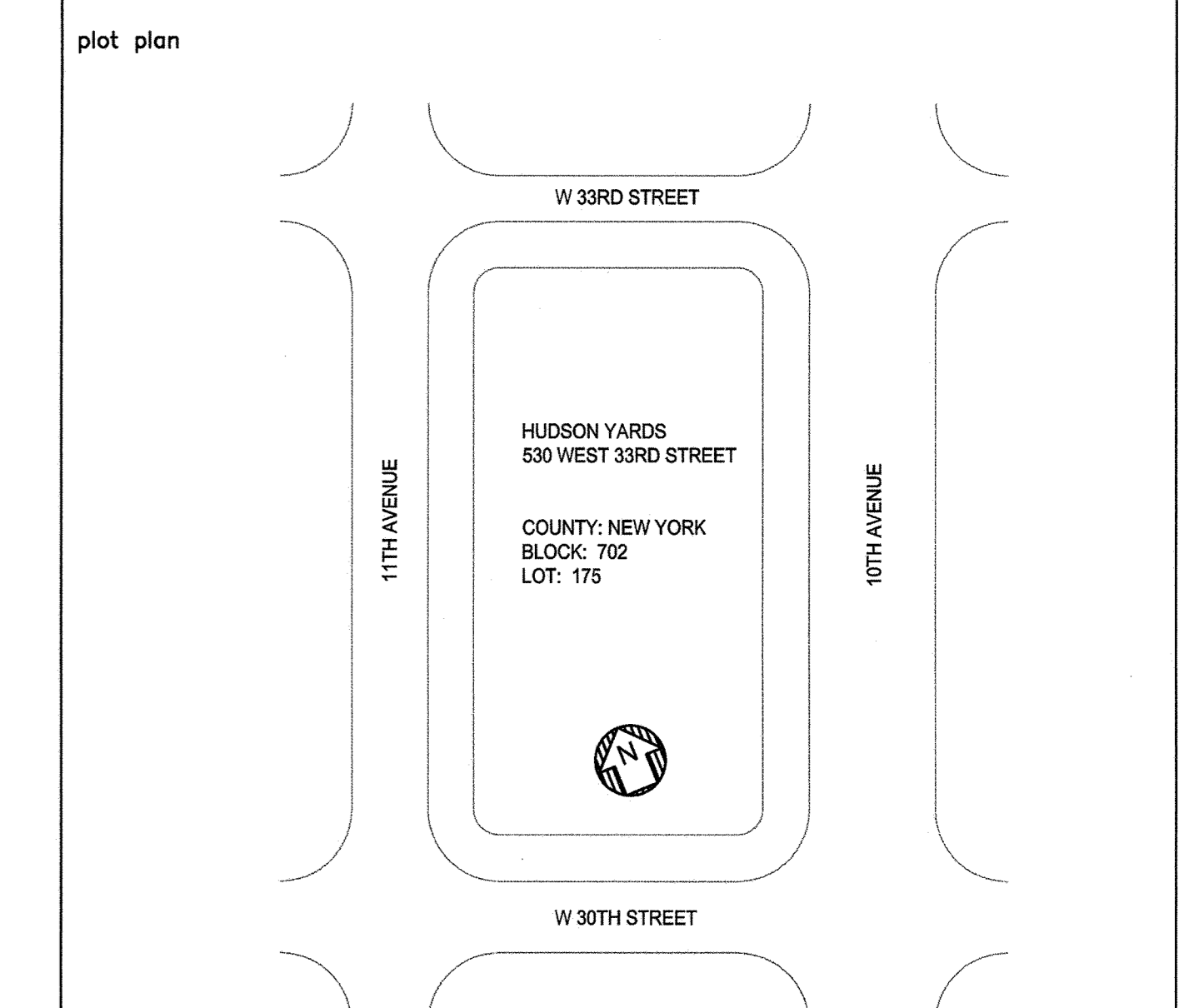
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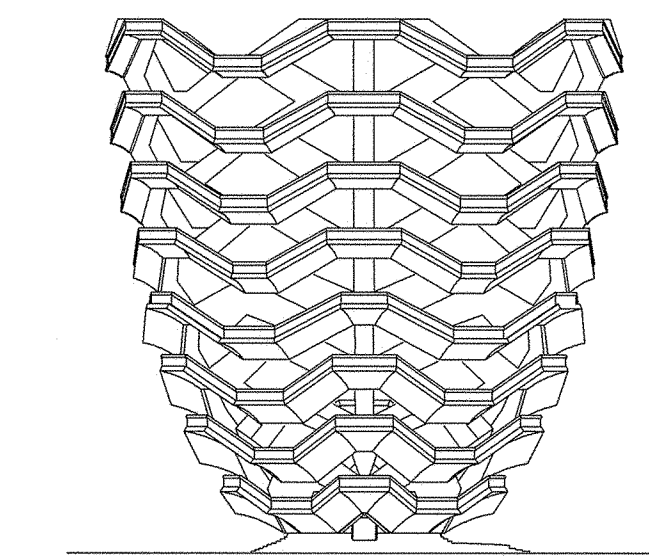
PROFESSIONAL'S STATEMENT
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SHEET No. 8
NYC ECC COMPLIANCE LIGHTING CONFORMANCE
drawn by AP scale 3/16"=1'-0" checked by DH
date 5/06/16 project no. 14986 rev 0
EN-107.00
Damian Titus
APPROVED
NYC DEPT OF BUILDINGS
OFFICE OF THE DEPUTY COMMISSIONER
PLUMBING PROFESSIONAL
10 OF 23

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530 WEST 33RD STREET, NEW YORK, NY



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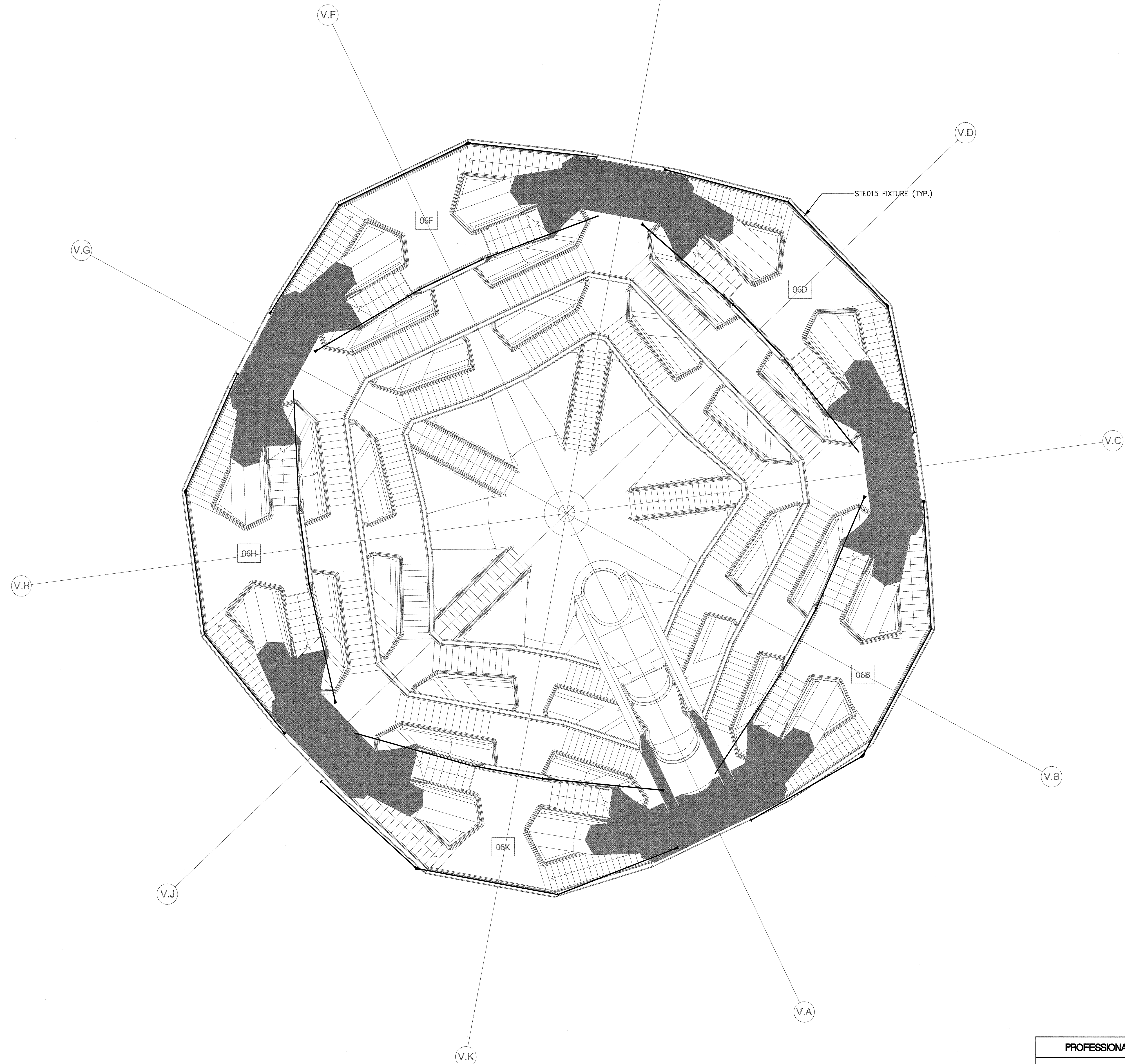
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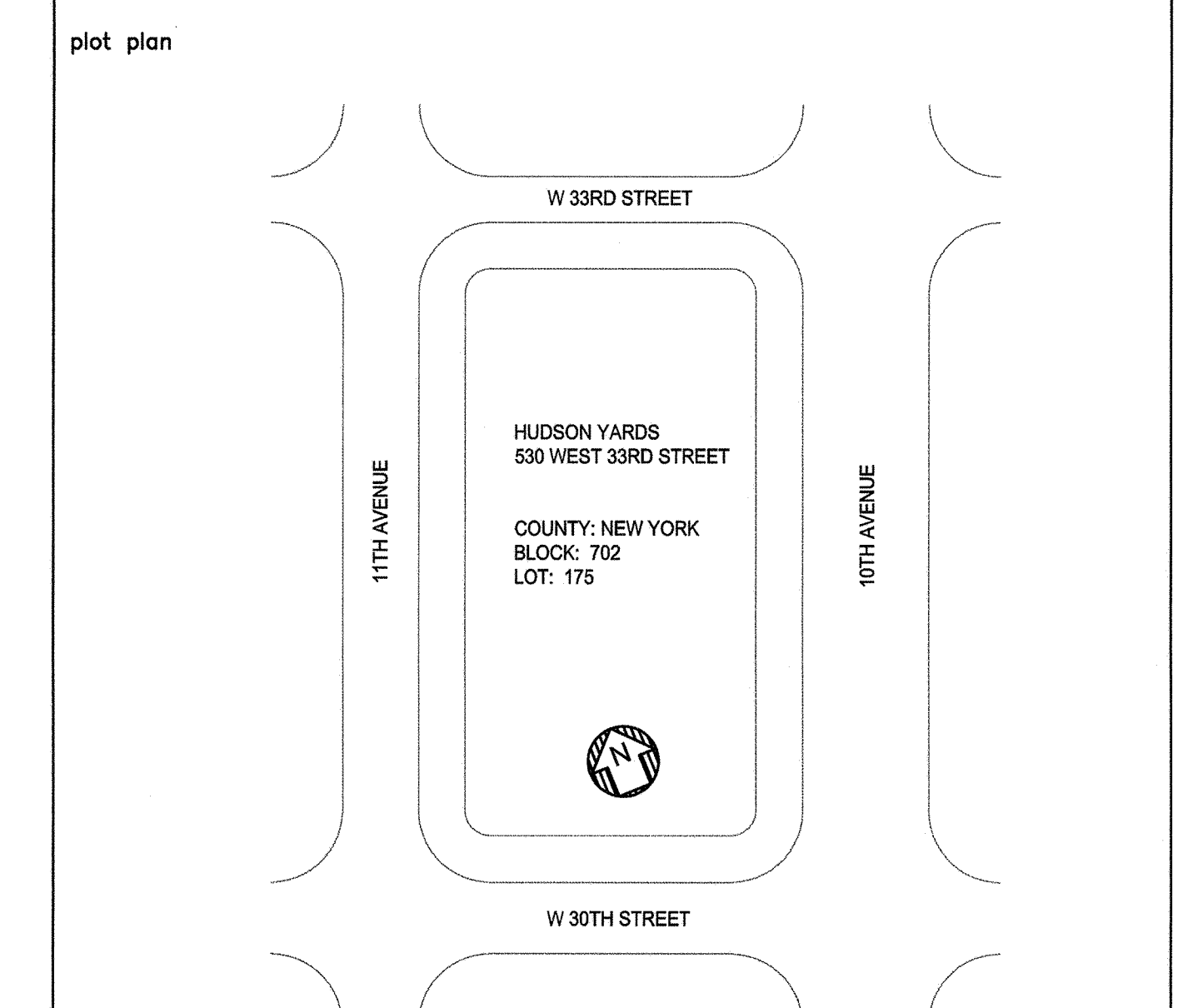
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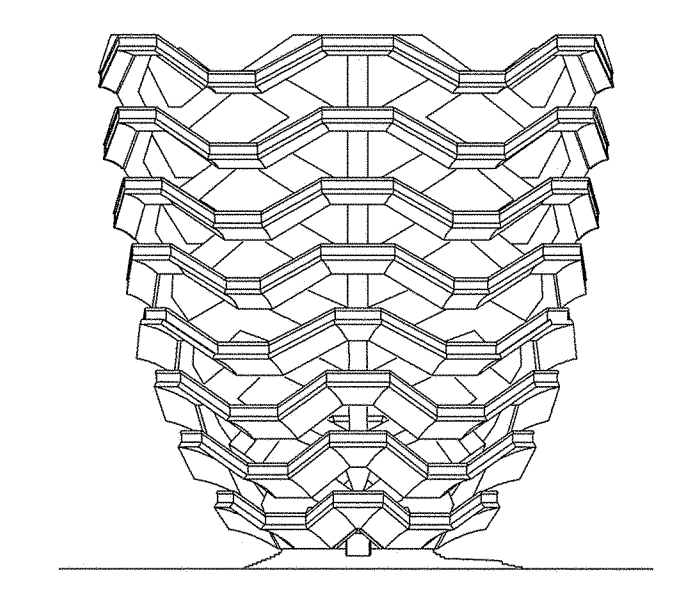
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 NYC ECC COMPLIANCE LISTING CONFORMANCE
 SHEET No. 9
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530 WEST 33RD STREET, NEW YORK, NY



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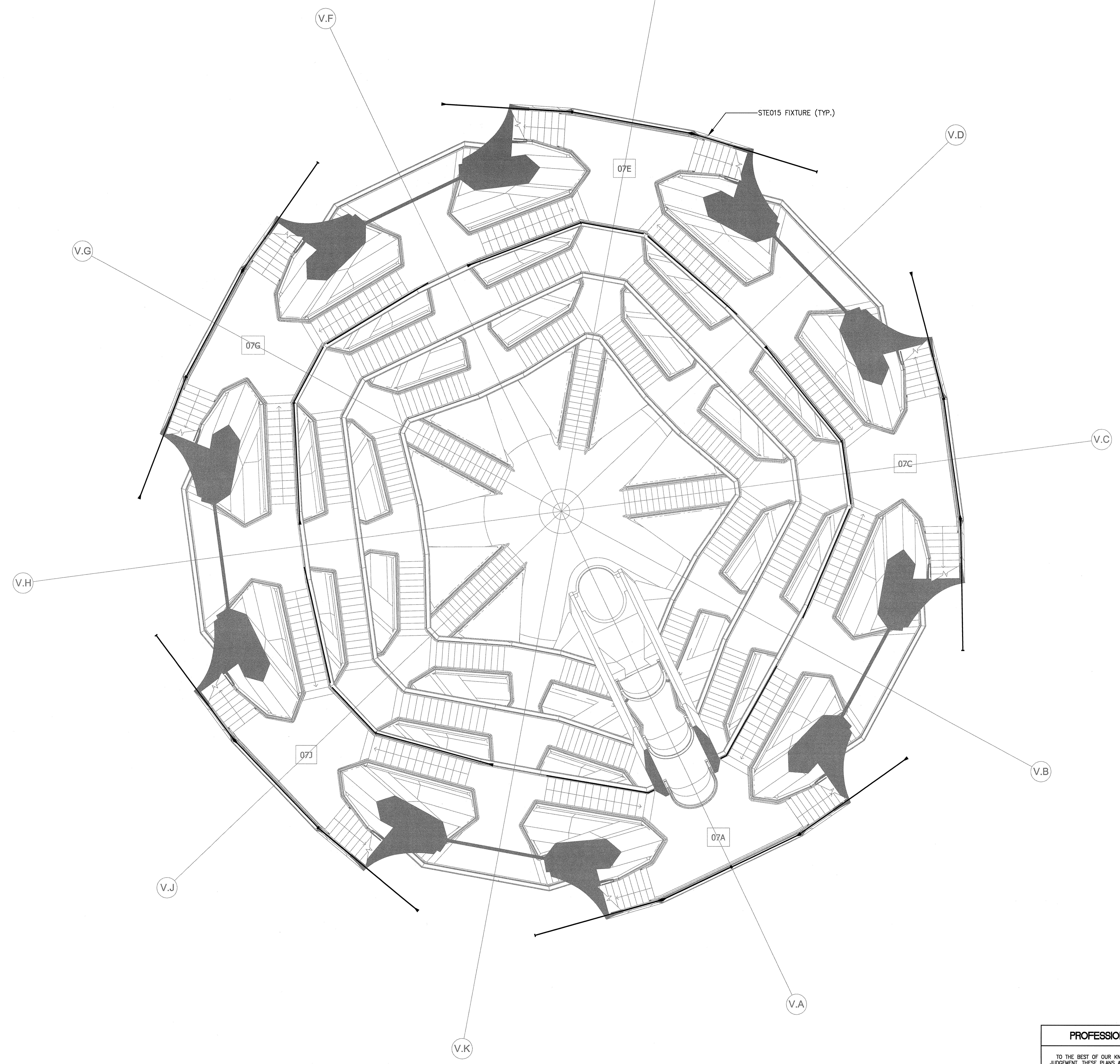
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



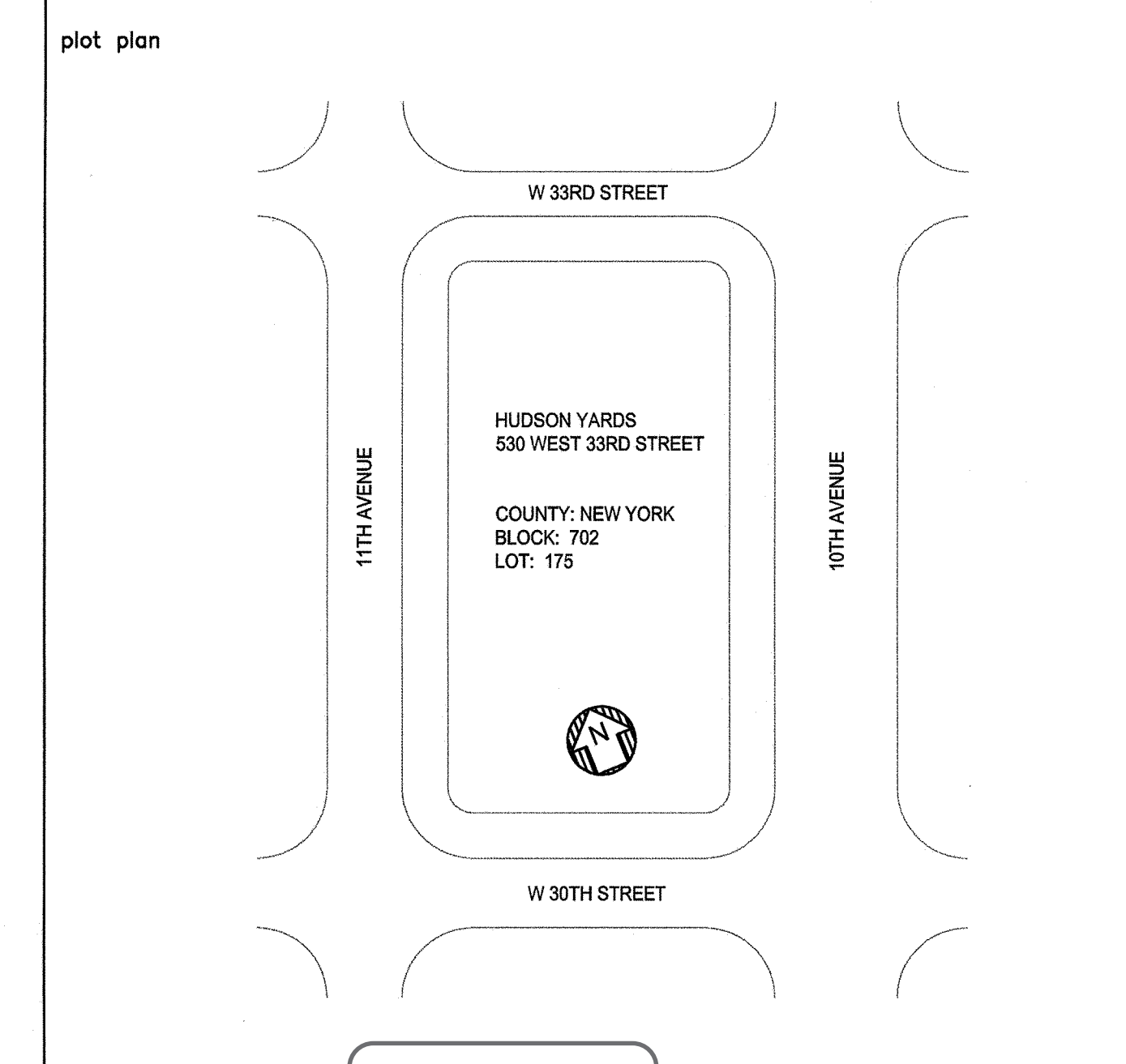
80 PINE STREET | NEW YORK, NY 10005 | T 212.530.9300 | WWW.JBB.COM

PACE PLUMBING CORP.

41 BOX STREET HAROLD BLOCK
BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
TEL: 718-389-6100



REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	



PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2014 NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE

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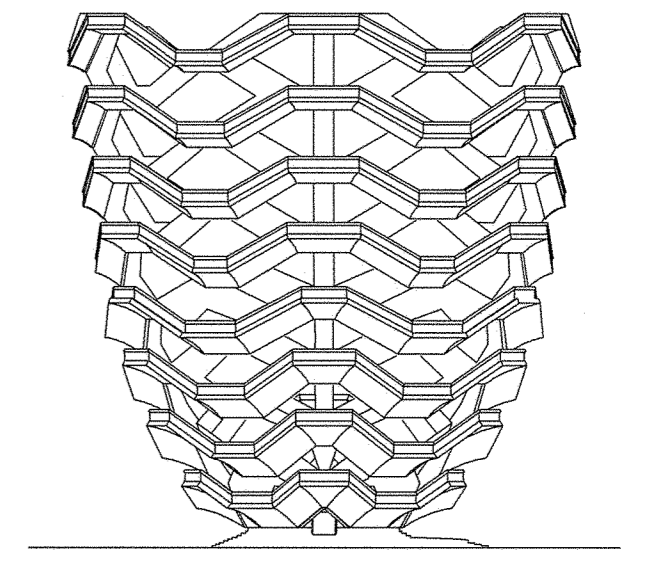
HUDSON YARDS VESSEL
SHEET No. 10
NYC ECC COMPLIANCE LIGHTING CONFORMANCE

drawn by AP scale 3/16"=1'-0" date 5/06/16
checked by [signature] date [blank]
project no. 14986 rev 0
EN-109.00

12 OF 23

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530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

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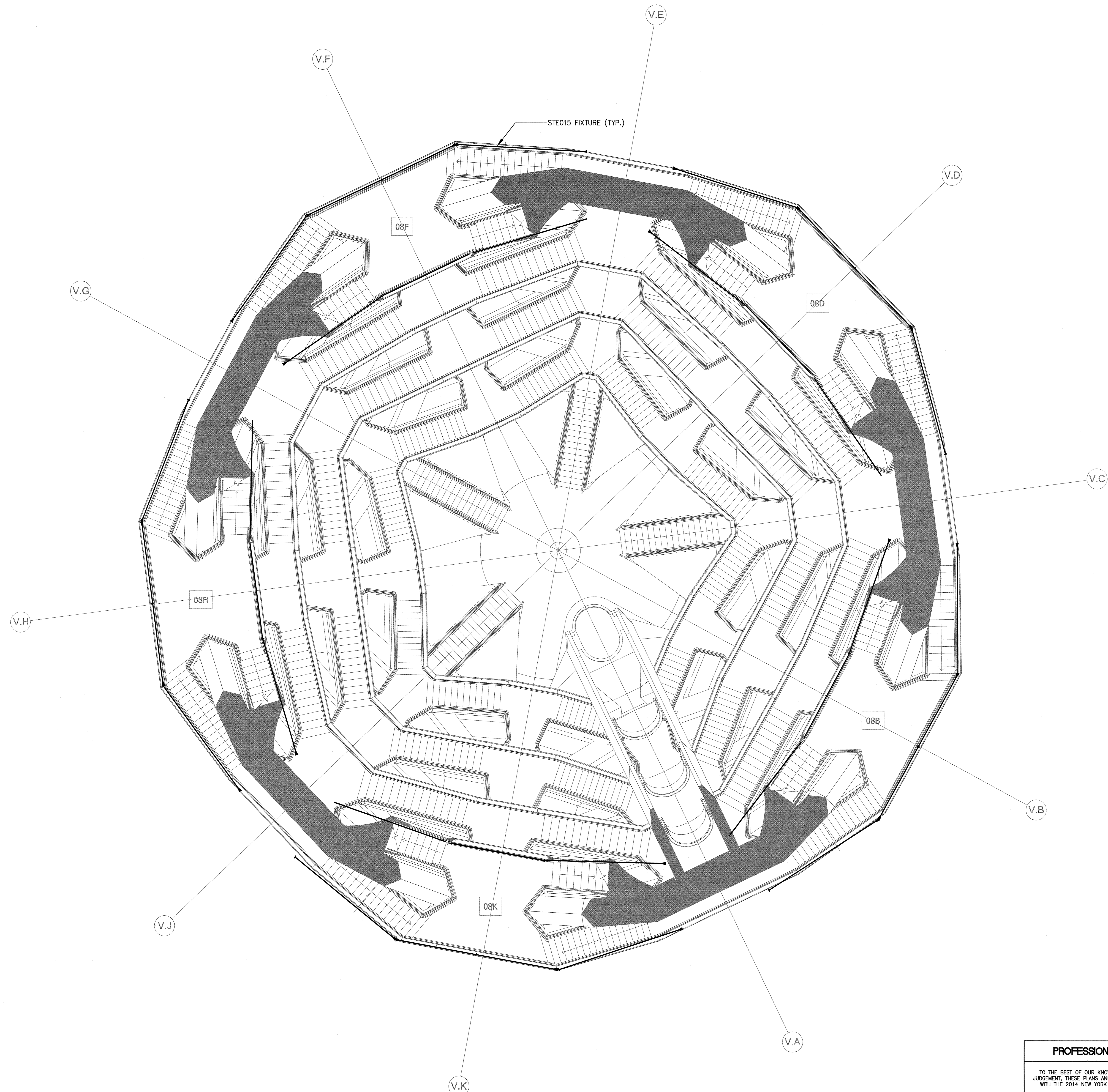


JAROS BAUM & BOLLES

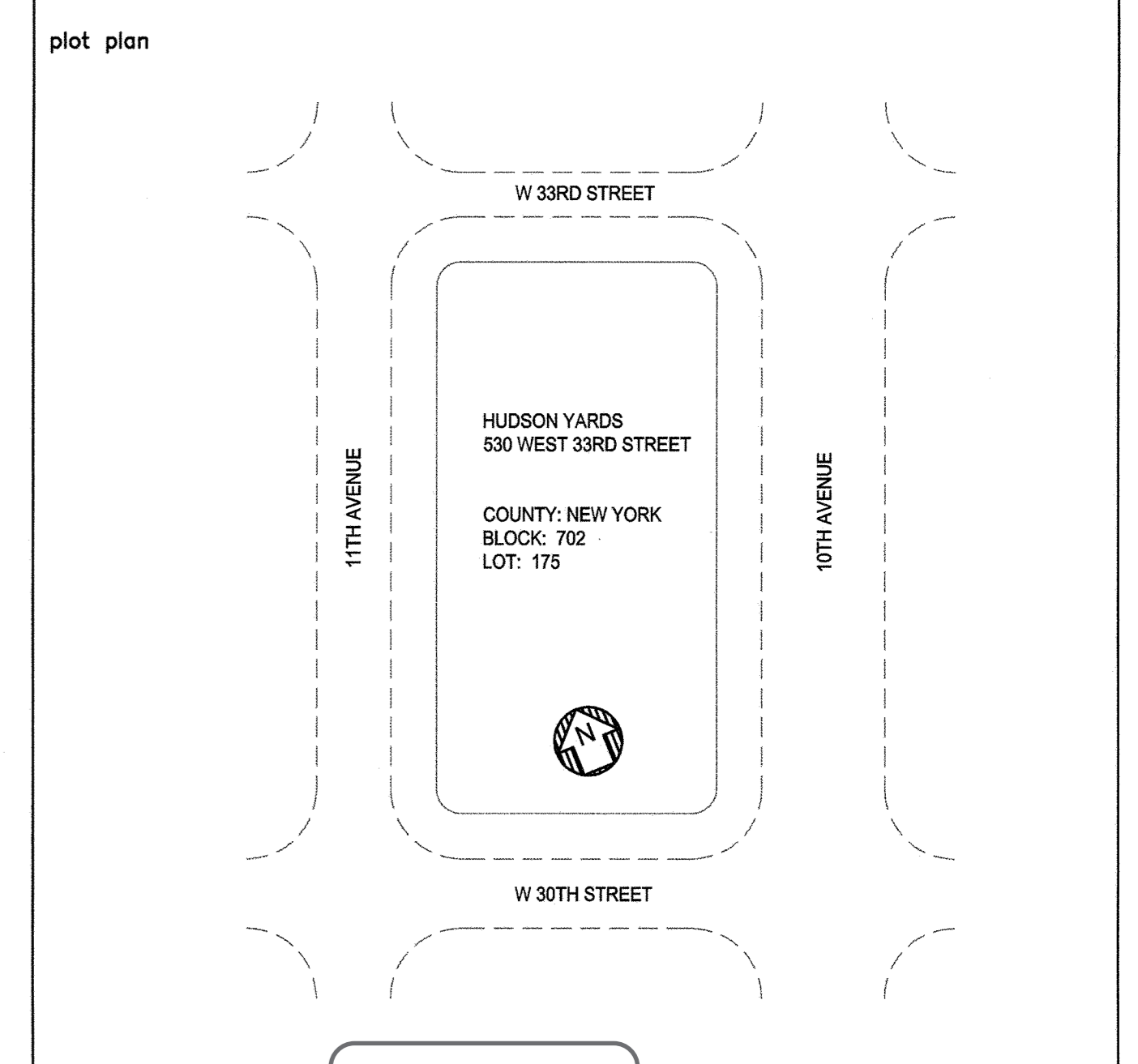
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41 BOX STREET BROOKLYN, NEW YORK 11222 TEL: 718-389-6100
HAROLD BLOCK MASTER PLUMBER LIC # 0195



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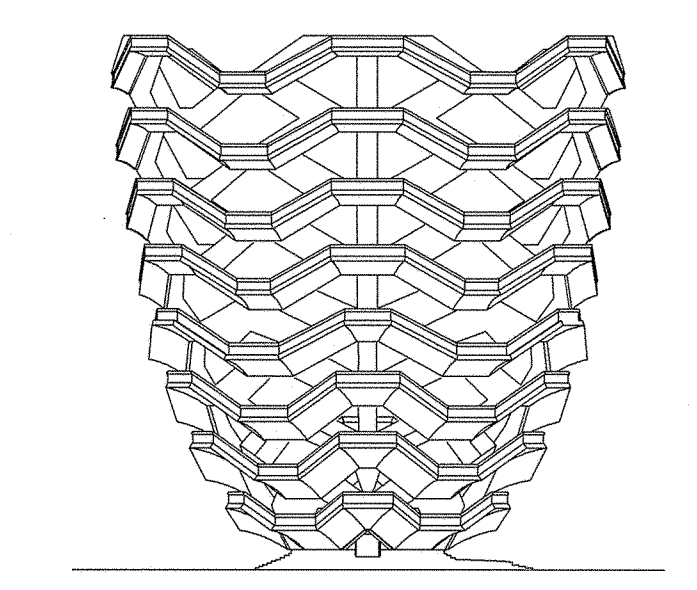
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HUDSON YARDS VESSEL
SHEET No. 11
NYC ECC COMPLIANCE, LIGHTING CONFORMANCE
drawn by: AP scale: 3/16"=1'-0" checked by: DH
date: 5/06/16 project no.: 14986 rev: 0
EN-110.00

Damian Titus
ARCHITECT

HUDSON YARDS VESSEL

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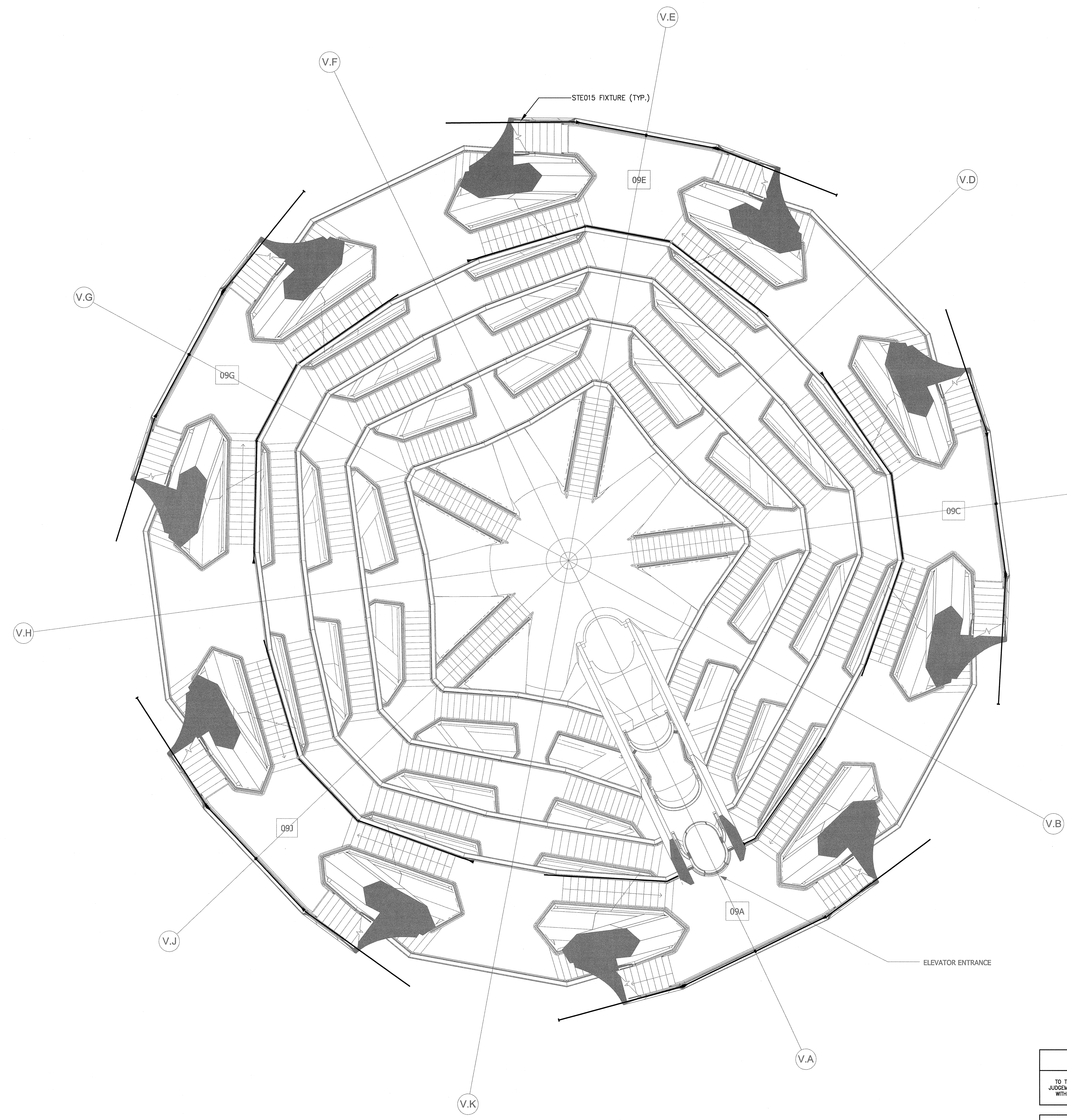


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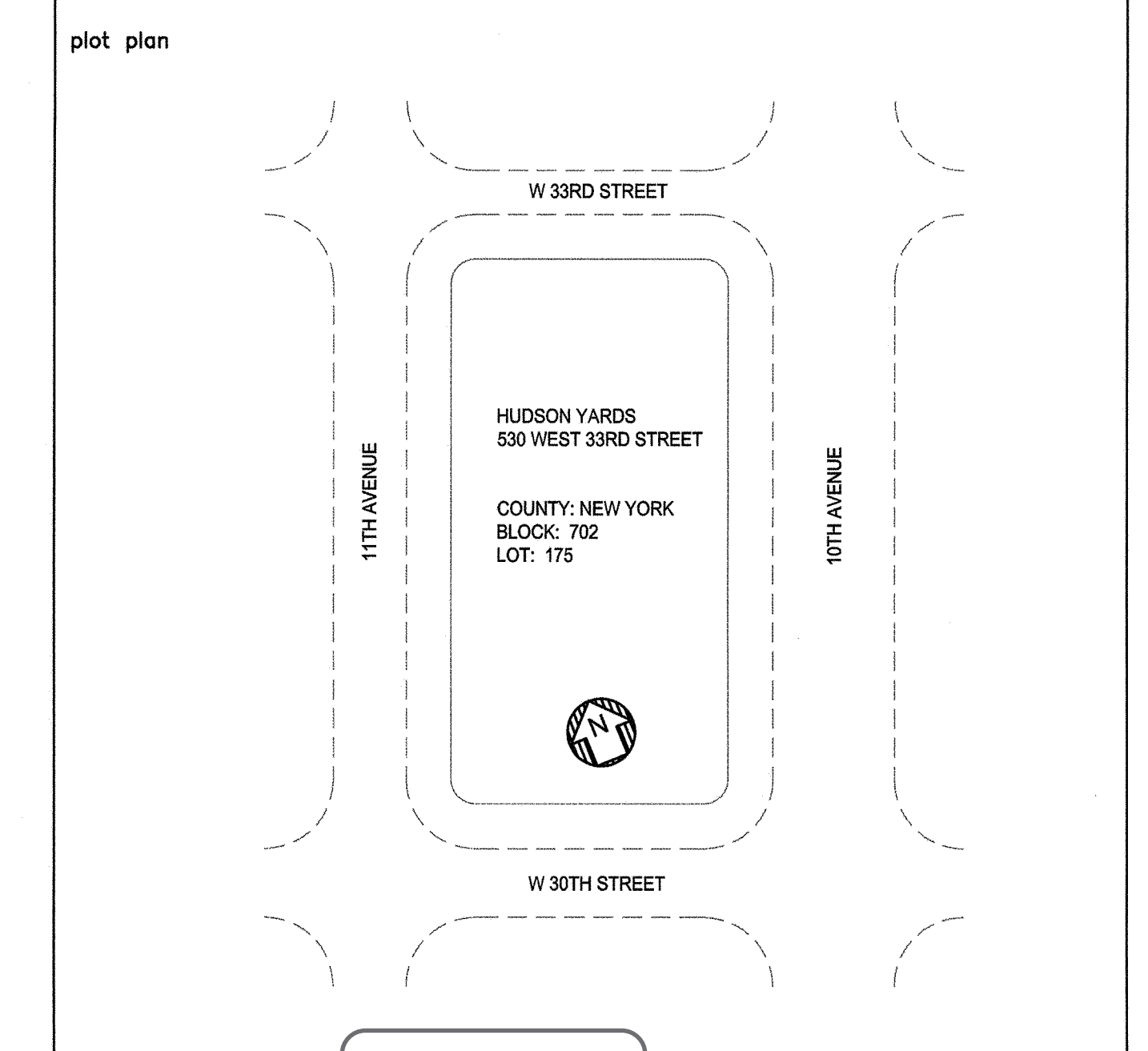
60 COLUMBUS CIRCLE
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41 BOX STREET BROOKLYN, NEW YORK 11222 TEL: 718-389-6100
HAROLD BLOCK MASTER PLUMBER LIC # 0195



REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	



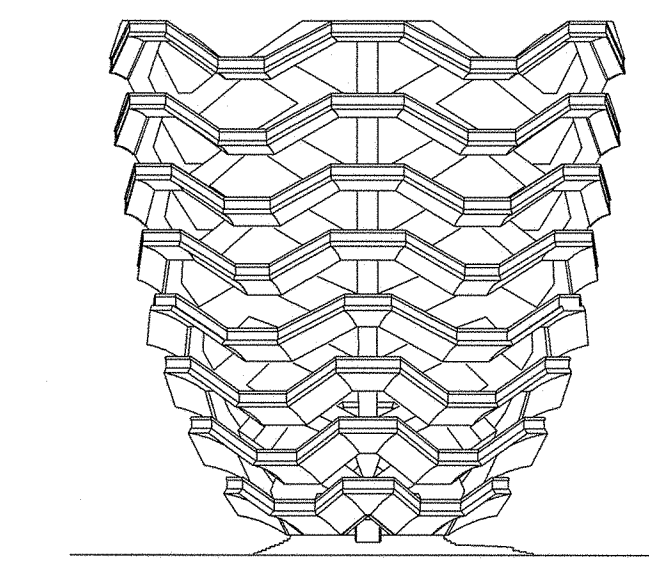
PROFESSIONAL'S STATEMENT
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HUDSON YARDS VESSEL
SHEET No. 11
NYC ECC COMPLIANCE LIGHTING CONFORMANCE
DRAWN BY: AP DATE: 5/06/16
SCALE: 3/16"=1'-0"
CHECKED BY: BH
PROJECT NO.: 14986
REV: 0
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14 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

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NEW YORK, NEW YORK 10023
TEL: 212-801-1000

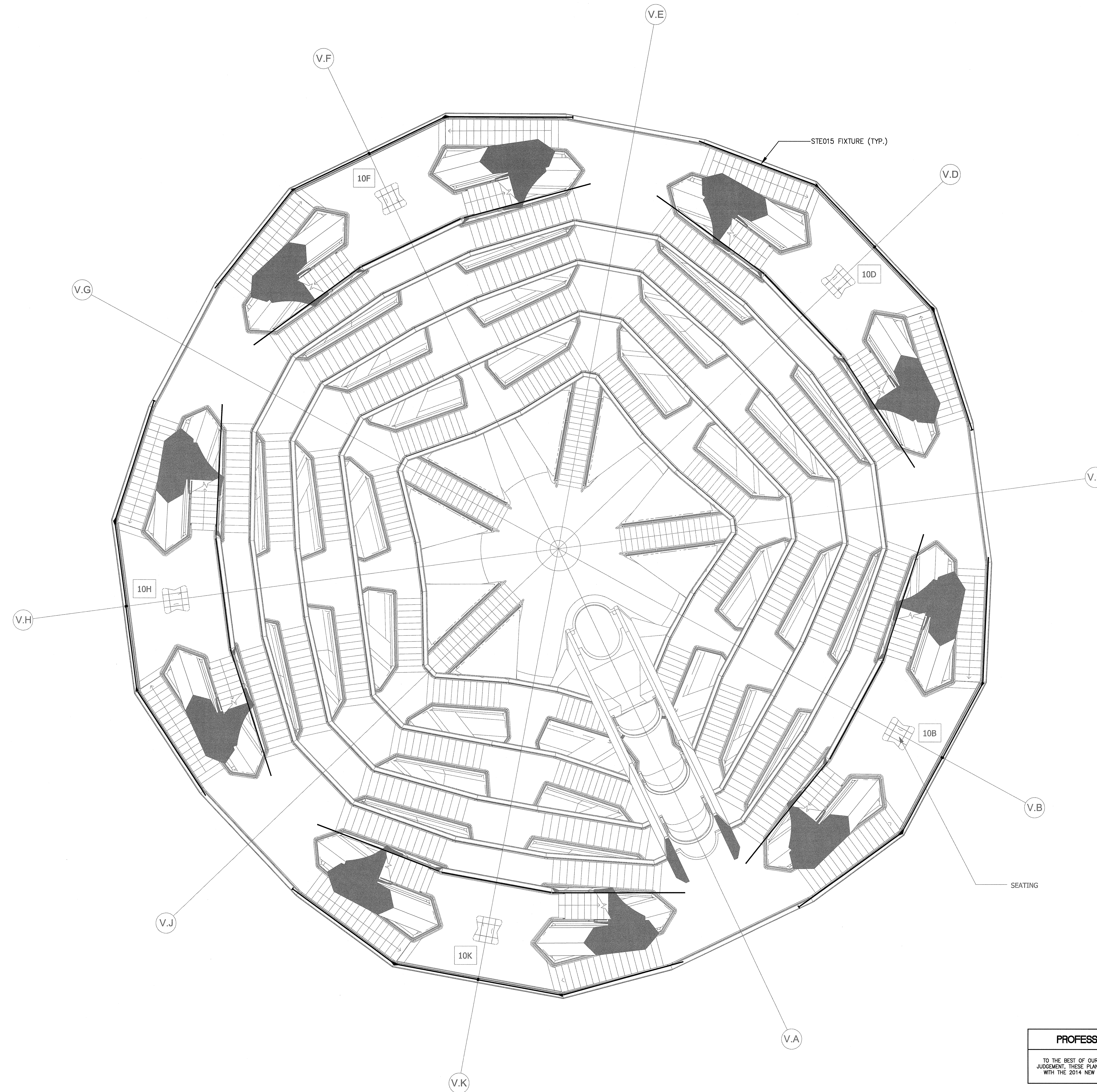
JBB

JAROS BAUM & BOLLES

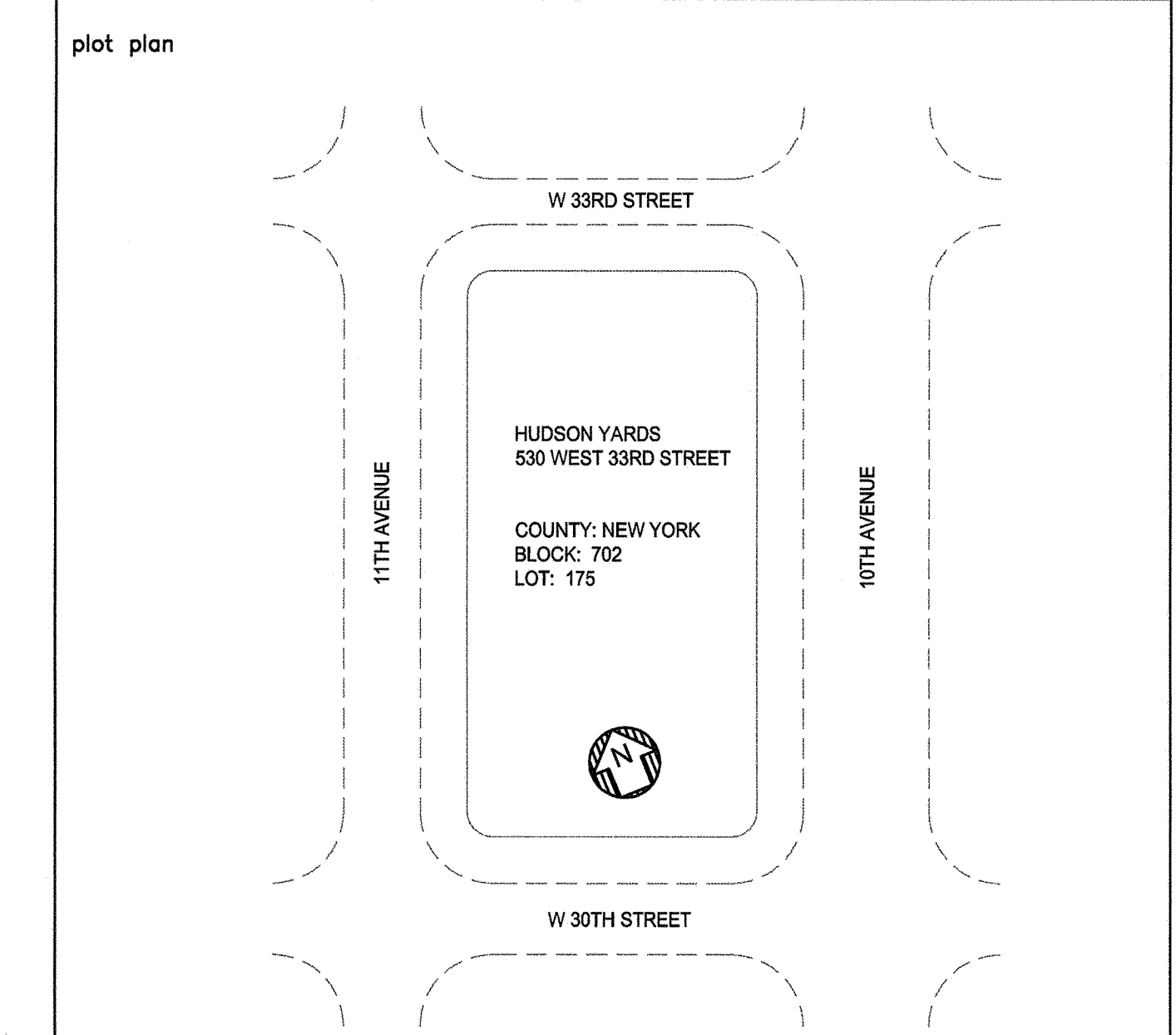
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PACE PLUMBING CORP.

41 BOX STREET HAROLD BLOCK
BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
TEL: 718-389-6100



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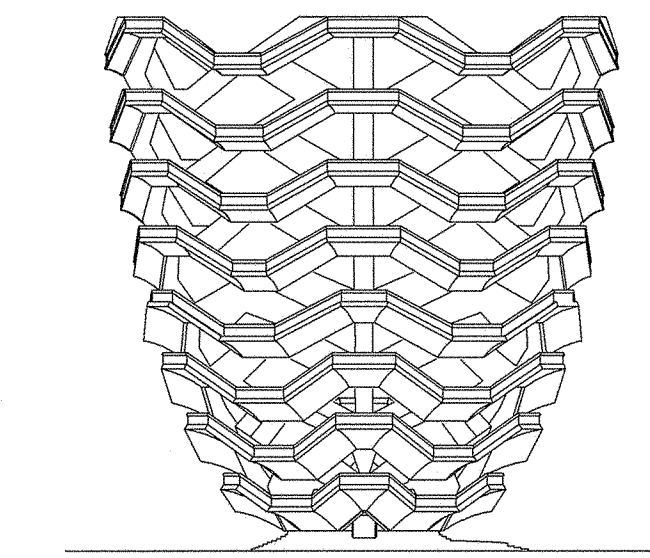
PROFESSIONAL'S STATEMENT
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HUDSON YARDS VESSEL
NYC ECC COMPLIANCE LIGHTING CONFORMANCE
SHEET No. 13
drawn by AP scale 3/16"=1'-0" checked by DH
date 5/06/16 project no. 14986 rev 0
EN-112.00
15 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000

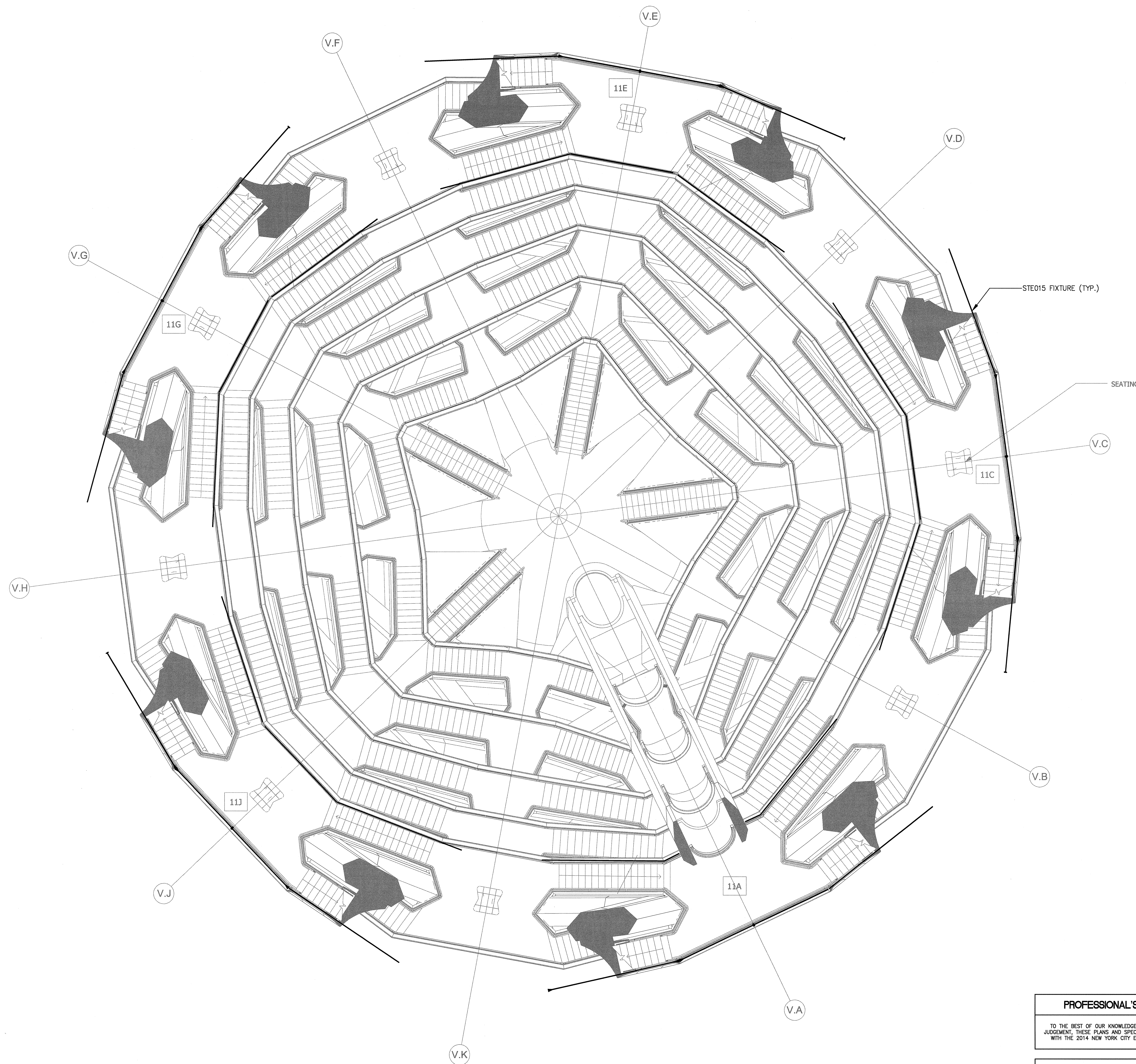
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JAROS BAUM & BOLLES

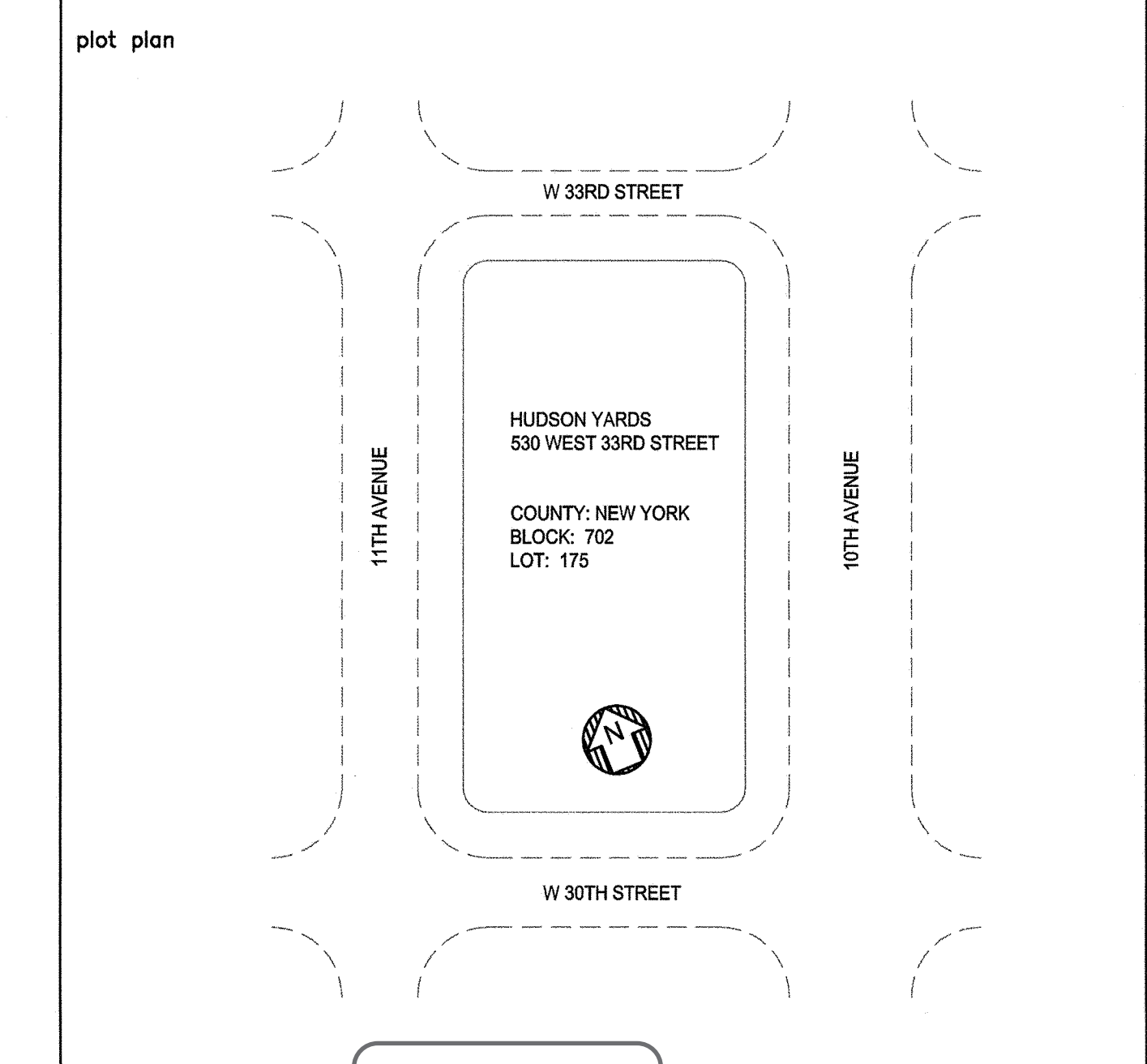
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41 BOX STREET HAROLD BLOCK
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HUDSON YARDS VESSEL

APPROVED

NYC ECC COMPLIANCE LIGHTING CONFORMANCE

SHEET No. 14

drawn by: AP scale: 3/16"=1'-0" checked by: DH

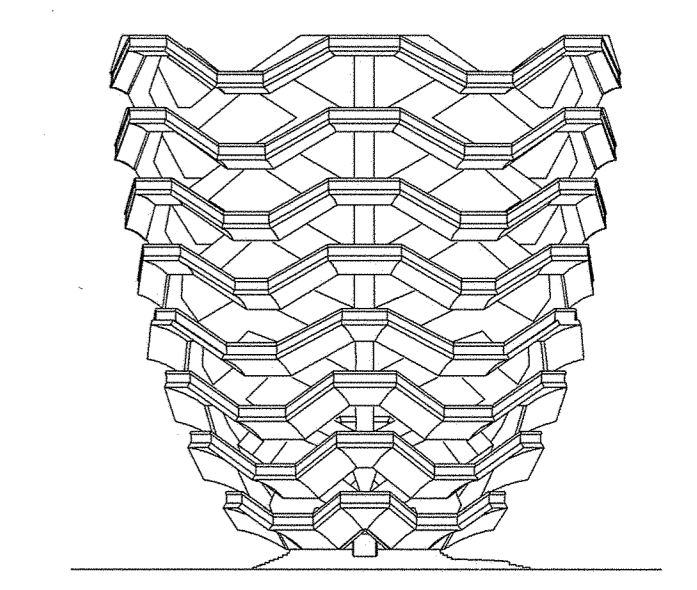
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EN-113.00

16 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

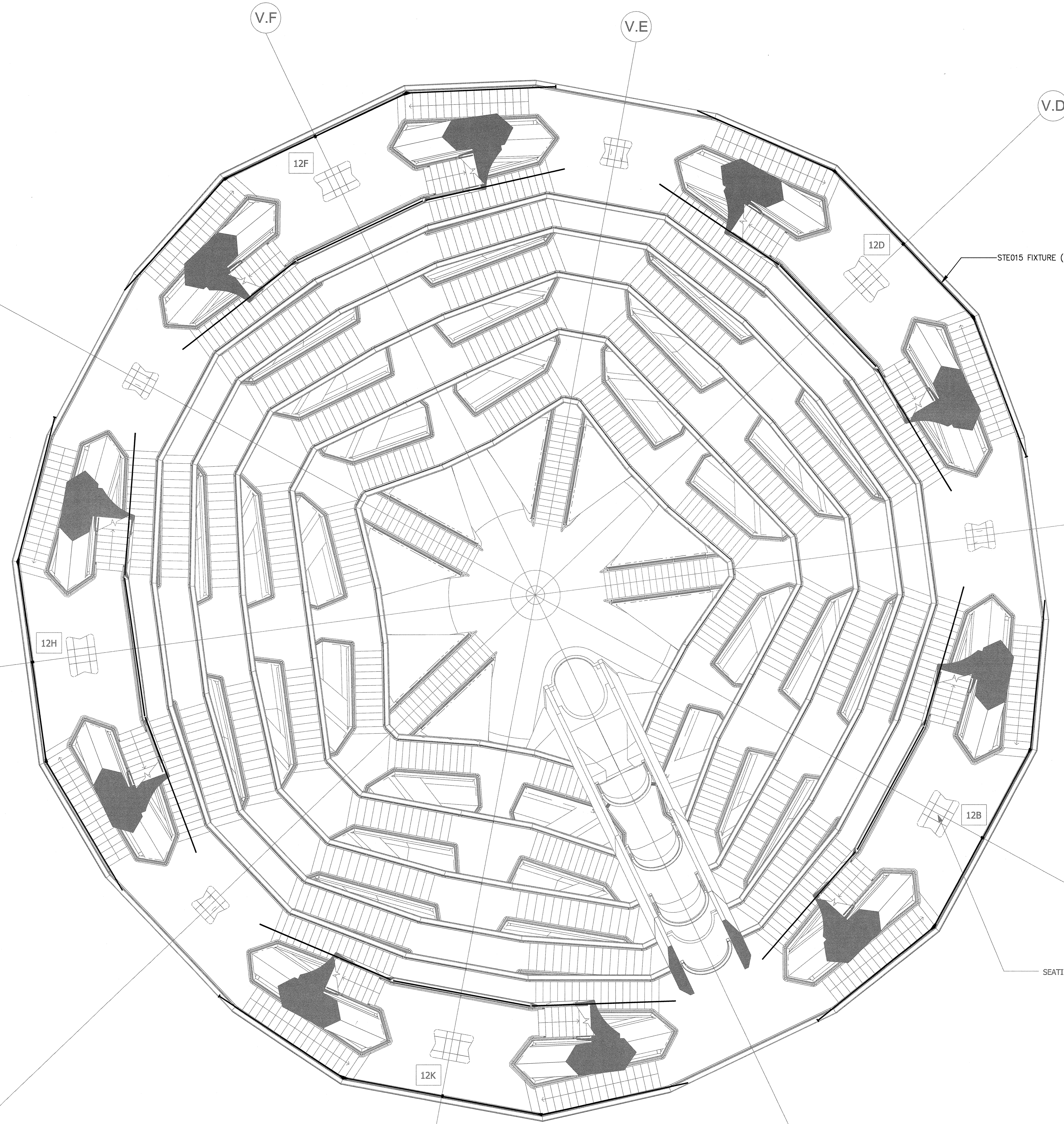
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



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PACE PLUMBING CORP.

41 BOX STREET HAROLD BLOCK
BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
TEL: 718-389-6100



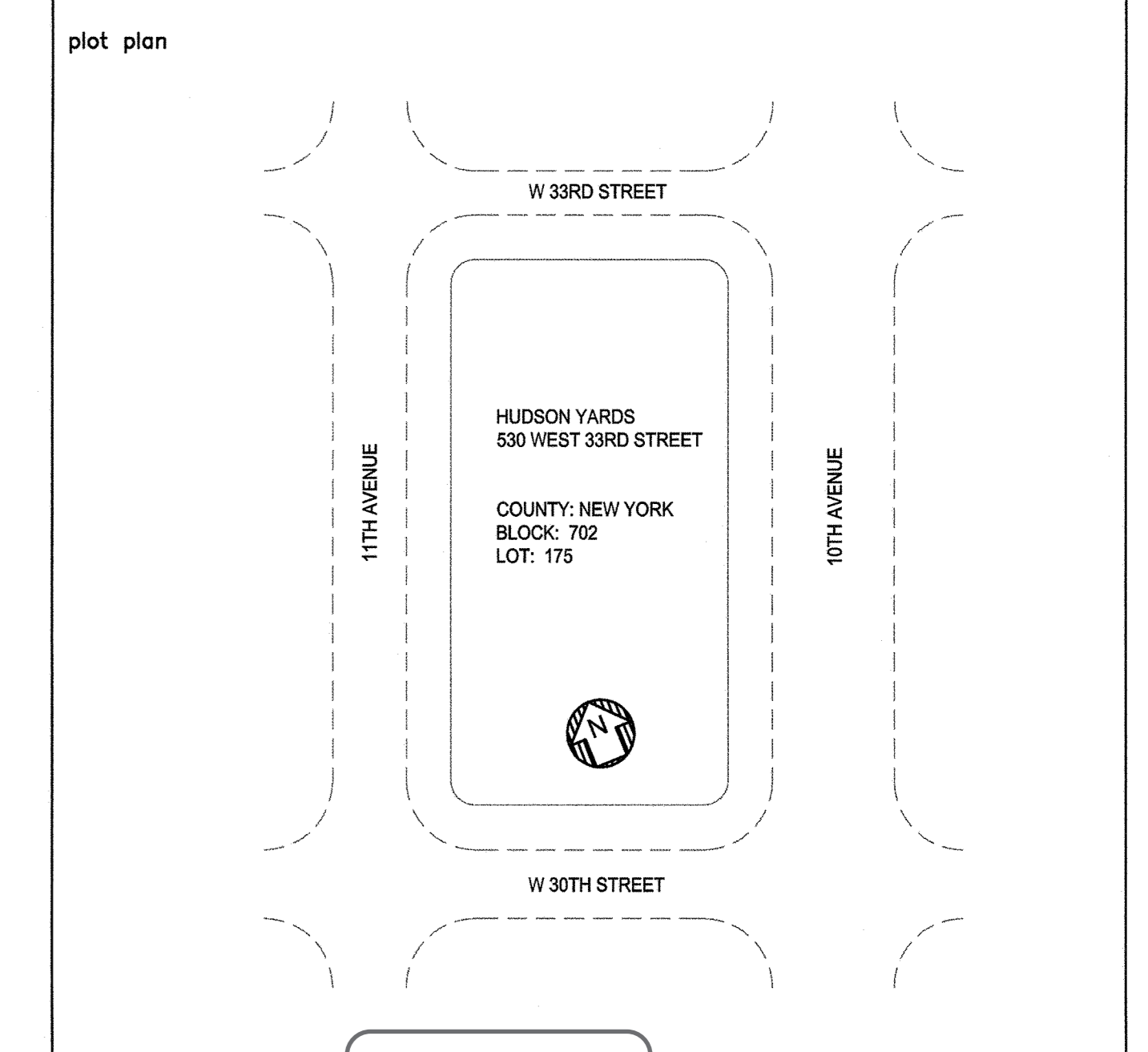
STE015 FIXTURE (TYP.)

SEATING

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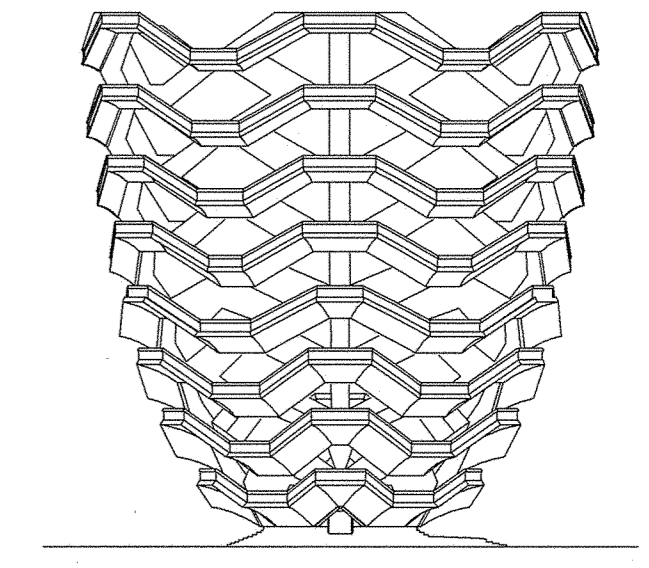
REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	



HUDSON YARDS VESSEL
NYC ECC COMPLIANCE, LIGHTING CONFORMANCE
SHEET No. 15
drawn by AP scale 3/16"=1'-0" checked by JBN
date 5/06/16 project no. 14986 rev 0
EN-114.00
Damian Titus
APPROVED
STATE OF NEW YORK
COUNTY OF NEW YORK
JASON M. BOLLES
REGISTERED PROFESSIONAL ARCHITECT
No. 065531
17 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

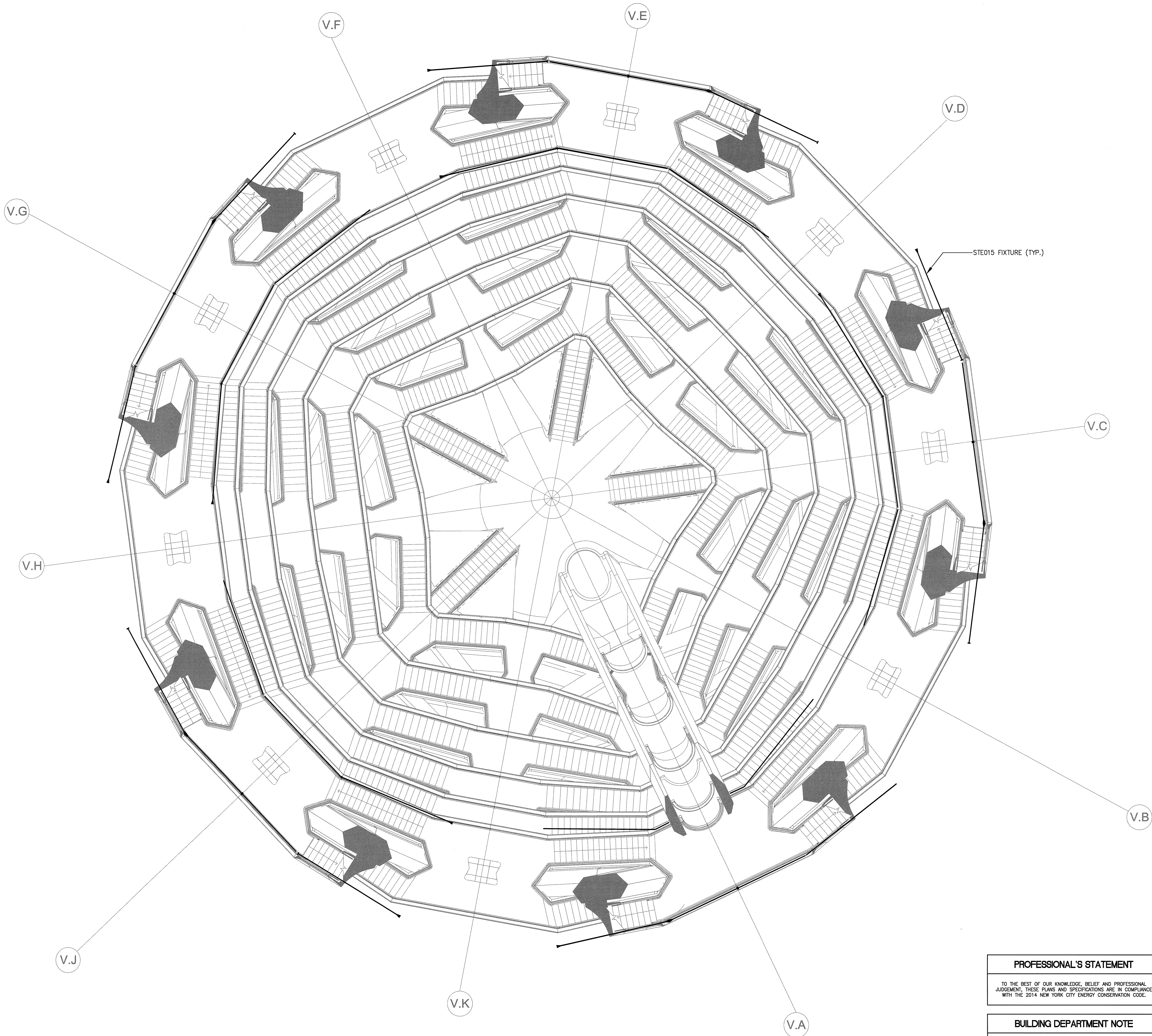
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



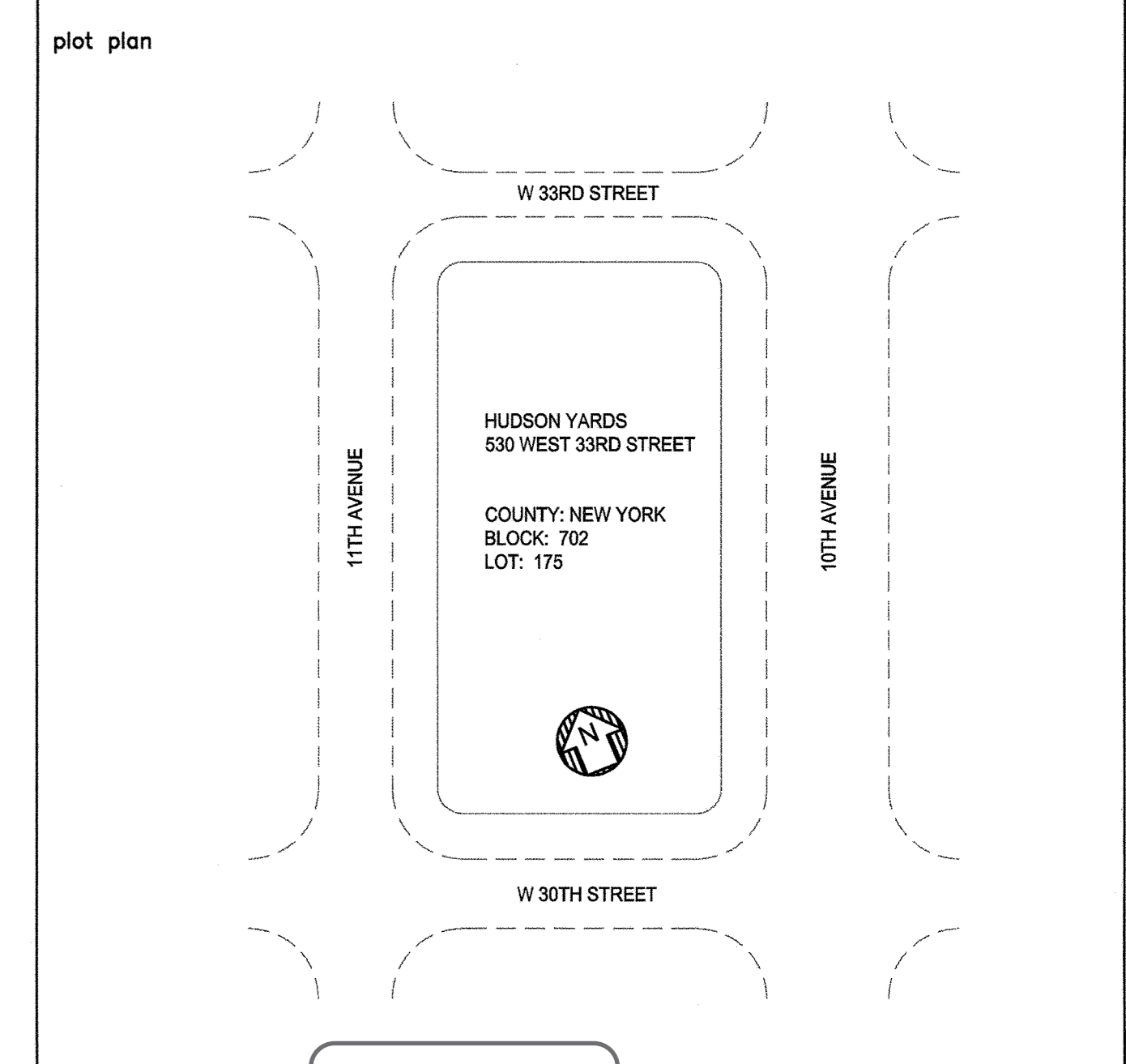
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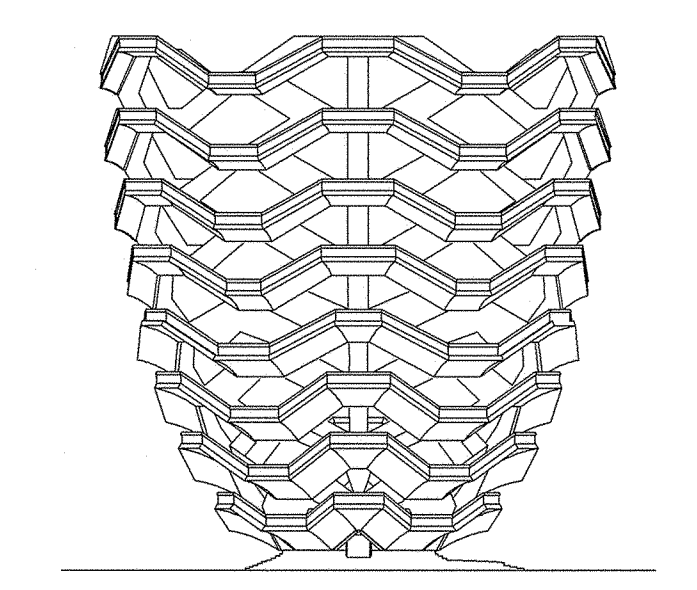
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HUDSON YARDS VESSEL
NYC ECC COMPLIANCE LIGHTING CONFORMANCE
SHEET No. 16
drawn by AP scale 3/16"=1'-0" checked by DH
date 5/06/16 project no. 14986 rev 0
EN-115.00
Damian Titus
APPROVED
STATE OF NEW YORK
COUNTY OF NEW YORK
JAMES J. MURPHY
PLUMBING ENGINEER

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



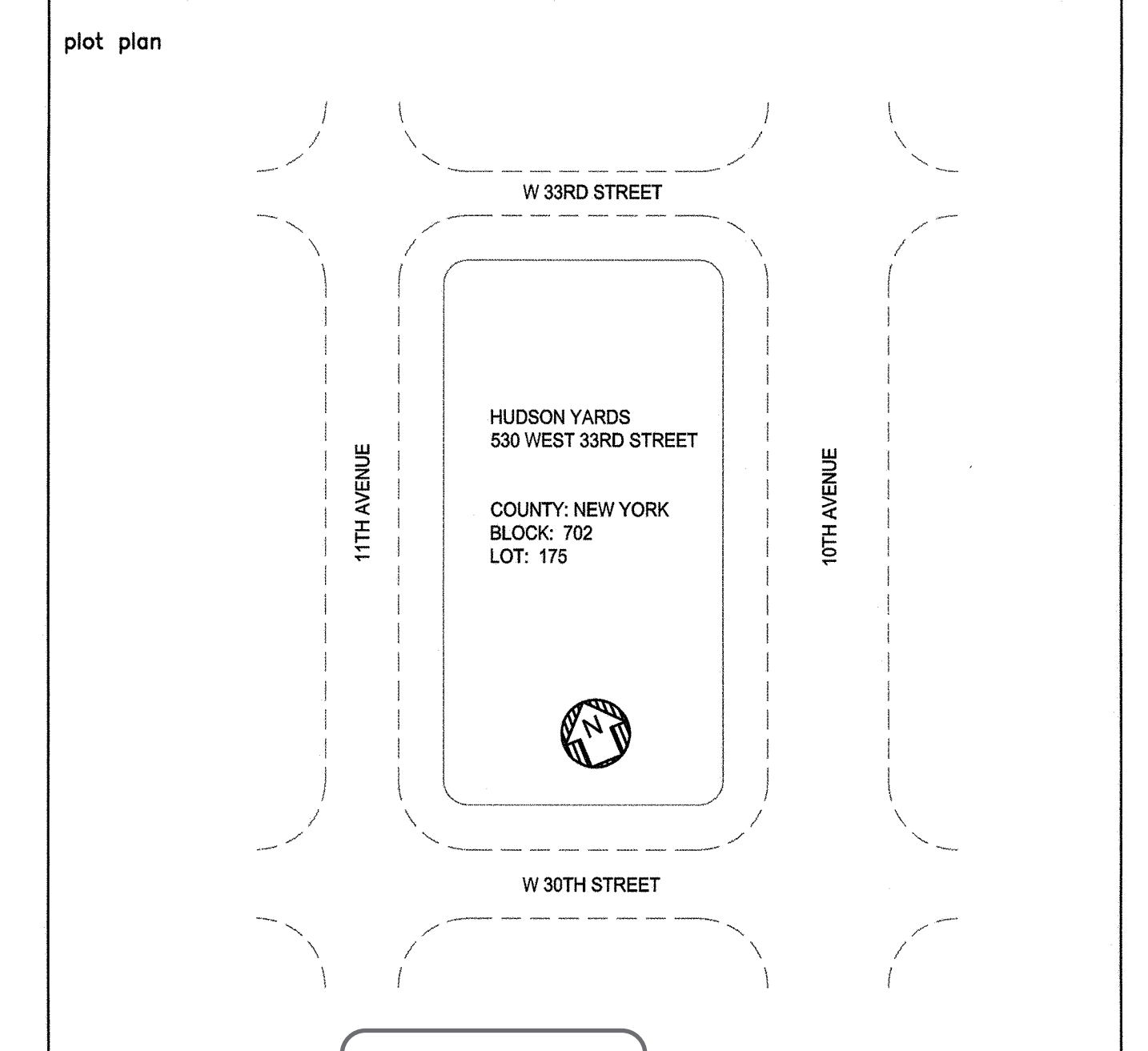
JAROS BAUM & BOLLES
80 PINE STREET | NEW YORK, NY 10005 | T 212.530.9300 | WWW.JBB.COM

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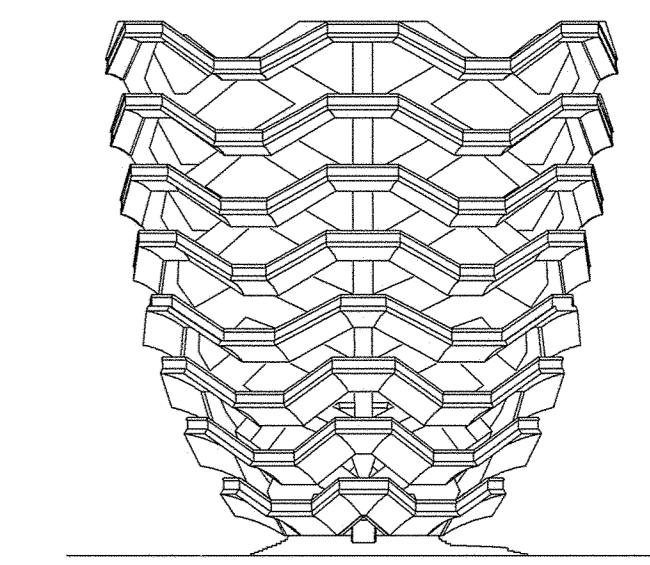
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NYC ECC COMPLIANCE LIGHTING CONFORMANCE
SHEET No. 17
drawn by AP scale 3/16"=1'-0" checked by DH
date 5/06/16 project no. 14986 rev 0
EN-116.00
19 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



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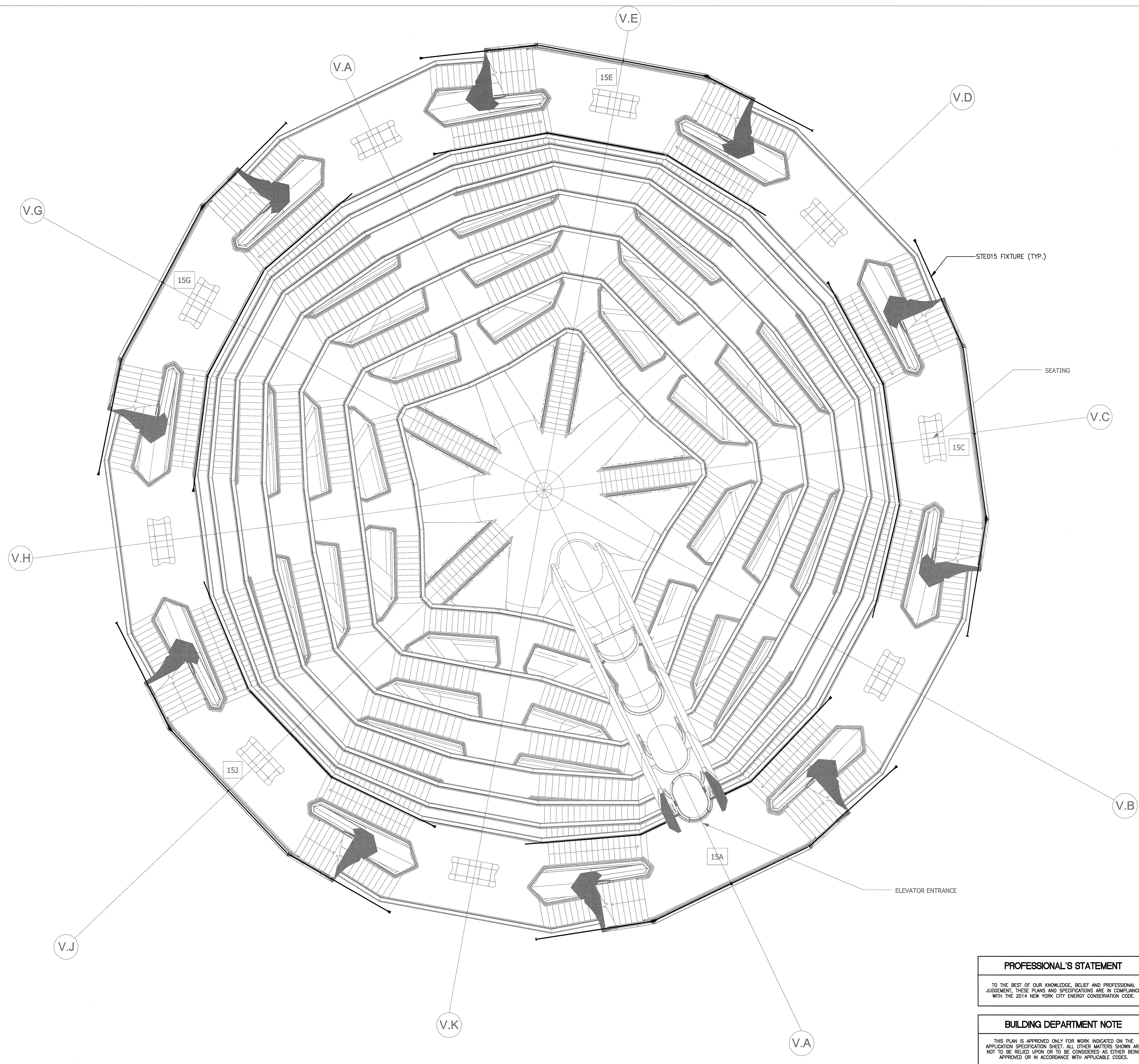
60 COLUMBUS CIRCLE
 NEW YORK, NEW YORK 10023
 TEL: 212-601-1000



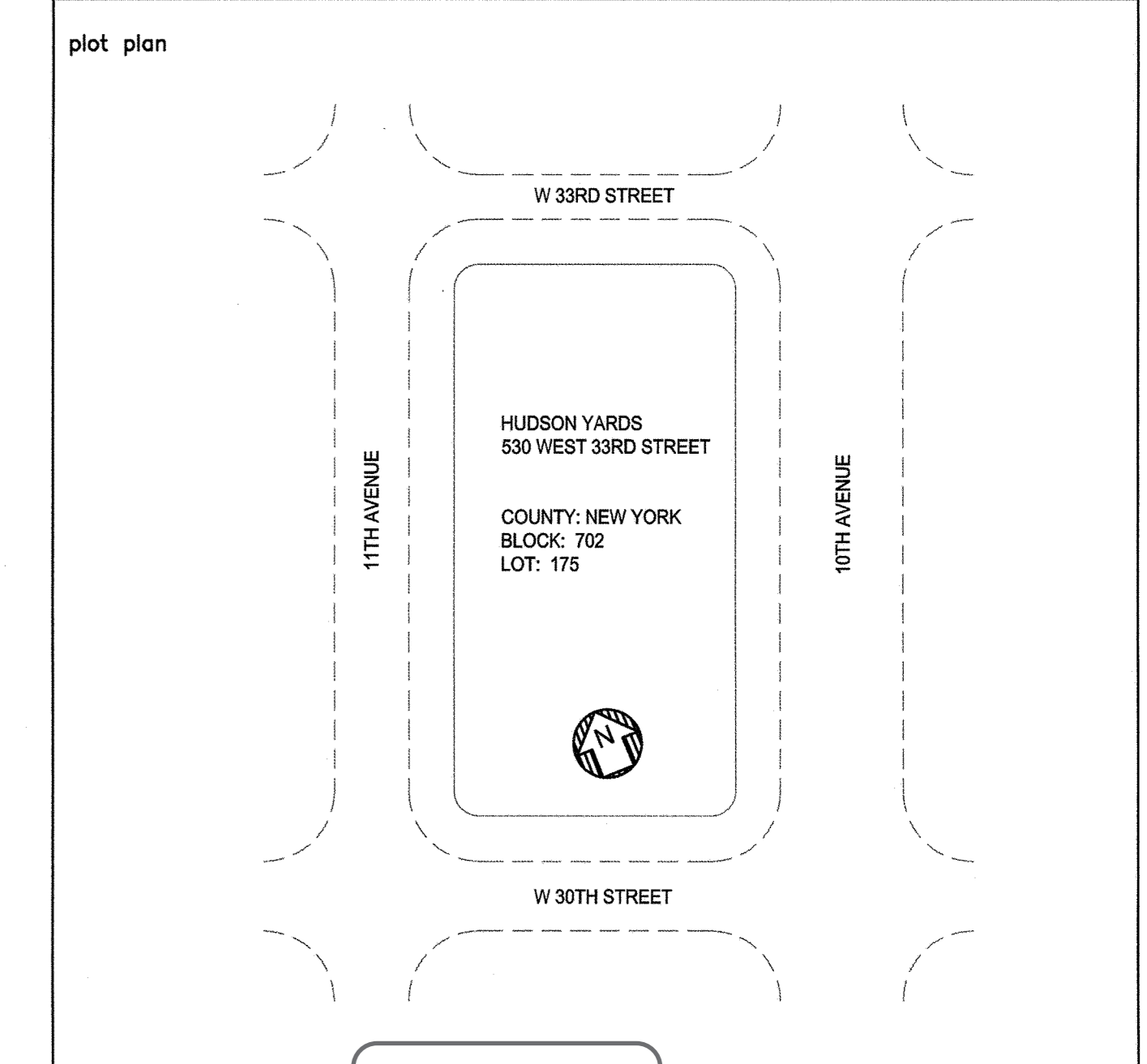
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PACE PLUMBING CORP.

41 BOX STREET BROOKLYN, NEW YORK 11222
 TEL: 718-389-6100
 HAROLD BLOCK MASTER PLUMBER LIC # 0195



REV. #	REVISION DESCRIPTION	DATE	BY
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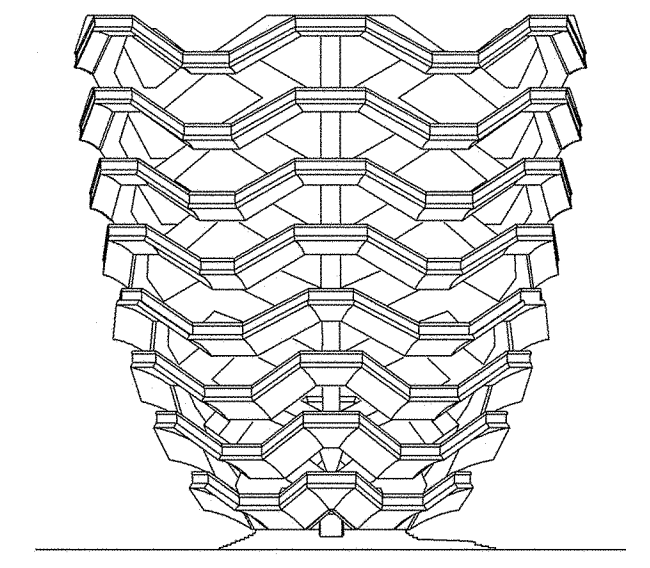
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HUDSON YARDS VESSEL
 SHEET No. 18
 NYC ECC COMPLIANCE LIGHTING CONFORMANCE
 drawn by AP scale 3/16"=1'-0" checked by DH
 date 5/06/16 project no. 14986 rev 0
 EN-117.00
 20 OF 23

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



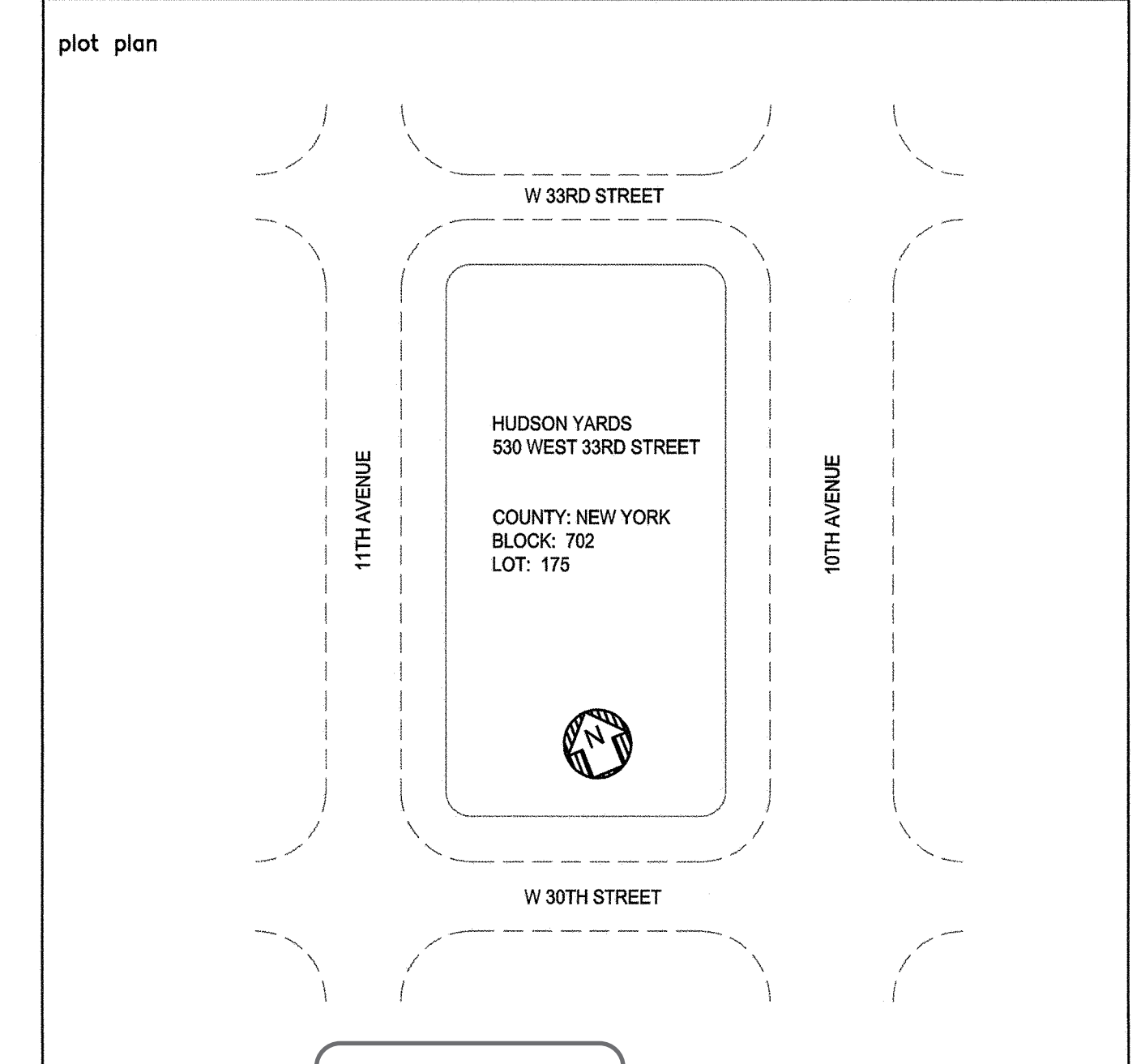
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41 BOX STREET HAROLD BLOCK
BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
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REV. #	REVISION DESCRIPTION	DATE	BY
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HUDSON YARDS VESSEL
NYC ECC COMPLIANCE LIGHTING CONFORMANCE
SHEET No. 19
drawn by: [signature] scale: 3/16"=1'-0" checked by: [signature] date: 5/06/16
project no. 14986 rev. 0
EN-118.00
[Professional Seal: Damian Titus, State of New York, License No. 14986]

COMcheck Software Version 4.0.3.0
Interior Lighting Compliance Certificate

A	B	C	D
Area Category	Floor Area (sq ft)	Allowed Watts / ft ²	Allowed Watts (B X C)
1.MER Space (Common Space Types:Electrical/mechanical)	325	1.10	424
Total Allowed Watts =			424

A	B	C	D	E
Fixture ID / Description / Lamp / Wattage Per Lamp / Ballast	Lamps / Fixture	# of Fixtures	Wattage	(C X D X E)
1.MER Space (Common Space Types:Electrical/mechanical)	1	7	60	420
Total Proposed Watts =			420	

Interior Lighting PASSES: Design 1% better than code

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2014 New York Energy Conservation Construction Code requirements in COMcheck Version 4.0.3.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Daniel Habelt - Associate Engineer Signature Date: 06/01/16

Name - Title Signature Date

Project Title: Hudson Yards - Vessel Report date: 06/01/16
Data filename: \global.anp.com\americas\jbb\NY-V23000234747-004 Internal Project Data\4-04 Calculations\4-04-12 COMcheck\NY Vessel COMcheck_Updated.cck Page 1 of 14

COMcheck Software Version 4.0.3.0
Exterior Lighting Compliance Certificate

A	B	C	D	E
Area/Space Category	Quantity	Allowed Watts / Unit	Trailable Wattage	Allowed Watts (B X C)
Vessel Landings/Stairs Level 1-2 (Stairway)	3159/92	1	Yes	3159
Vessel Landings/Stairs Level 3-4 (Stairway)	4232/92	1	Yes	4232
Vessel Podium (Stairway)	1441/92	1	Yes	1441
Vessel Landings/Stairs Level 7-8 (Stairway)	4593/92	1	Yes	4593
Vessel Landings/Stairs Level 9-10 (Stairway)	4746/92	1	Yes	4746
Vessel Landings/Stairs Level 11-12 (Stairway)	4770/92	1	Yes	4770
Vessel Landings/Stairs Level 13-14 (Stairway)	4913/92	1	Yes	4913
Vessel Landings/Stairs Level 15-16 (Stairway)	5174/92	1	Yes	5174
Total Trailable Watts (a) =			36656	
Total Allowed Watts (b) =			36666	
Total Allowed Supplemental Watts (a) =			600	

Proposed Exterior Lighting Power

A	B	C	D	E
Fixture ID / Description / Lamp / Wattage Per Lamp / Ballast	Lamps / Fixture	# of Fixtures	Wattage	(C X D X E)
Vessel Landings/Stairs Level 1-2 (Stairway 3159 ft ²)	1	374	4	1496
LED 1: ST1E15: Outboard Handrail: Other	1	185	4	740
Vessel Landings/Stairs Level 3-4 (Stairway 3628 ft ²)	1	476	4	1904
LED 1: ST1E15: Handrail at Platform: Other	1	333	4	1332
Vessel Landings/Stairs Level 5-6 (Stairway 4232 ft ²)	1 </td <td>500</td> <td>4</td> <td>2000</td>	500	4	2000
LED 1: ST1E15: Handrail at Platform: Other	1	436	4	1744
Vessel Podium (Stairway 1441 ft ²)	1	10	237	2370
LED 14: ST104: Staircase Lighting: Other	1	137	4	548
Vessel Landings/Stairs Level 7-8 (Stairway 4593 ft ²)				

(a) Wattage trackoffs are only allowed between trailable areas/surfaces.
(b) A supplemental allowance equal to 800 Watts may be applied toward compliance of both non-trailable and trailable areas/surfaces.

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2014 New York Energy Conservation Construction Code requirements in COMcheck Version 4.0.3.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Daniel Habelt - Associate Engineer Signature Date: 06/01/16

Name - Title Signature Date

Project Title: Hudson Yards - Vessel Report date: 06/01/16
Data filename: \global.anp.com\americas\jbb\NY-V23000234747-004 Internal Project Data\4-04 Calculations\4-04-12 COMcheck\NY Vessel COMcheck_Updated.cck Page 2 of 14

A	B	C	D	E
Fixture ID / Description / Lamp / Wattage Per Lamp / Ballast	Lamps / Fixture	# of Fixtures	Wattage	(C X D X E)
LED 6: ST1E15: Outboard Handrail: Other	1	634	4	2536
LED 10: ST1E15: Handrail at Platform: Other	1	464	4	1856
Vessel Landings/Stairs Level 9-10 (Stairway 4746 ft ²)				
LED 12: ST1E15: Outboard Handrail: Other	1	661	4	2644
LED 14: ST1E15: Handrail at Platform: Other	1	542	4	2168
Vessel Landings/Stairs Level 11-12 (Stairway 4770 ft ²)				
LED 10: ST1E15: Outboard Handrail: Other	1	661	4	2644
LED 14: ST1E15: Handrail at Platform: Other	1	542	4	2168
Vessel Landings/Stairs Level 13-14 (Stairway 4913 ft ²)				
LED 11: ST1E15: Outboard Handrail: Other	1	700	4	2800
LED 14: ST1E15: Handrail at Platform: Other	1	591	4	2364
Vessel Landings/Stairs Level 15-16 (Stairway 5174 ft ²)				
LED 10: ST1E15: Outboard Handrail: Other	1	711	4	2844
LED 20: ST1E15: Handrail at Platform: Other	1	200	4	800
Total Trailable Proposed Watts =			38942	

Exterior Lighting PASSES: Design 4% better than code

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2014 New York Energy Conservation Construction Code requirements in COMcheck Version 4.0.3.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Daniel Habelt - Associate Engineer Signature Date: 06/01/2016

Name - Title Signature Date

Project Title: Hudson Yards - Vessel Report date: 06/01/16
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COMcheck Software Version 4.0.3.0
Mechanical Compliance Certificate

Project Information

Energy Code: 2014 New York Energy Conservation Construction Code	Project Title: Hudson Yards - Vessel	Location: New York County, New York
Climate Zone: 4a	Project Type: New Construction	

Additional Efficiency Package
High efficiency HVAC Systems that do not meet the performance requirement will be identified in the mechanical requirements checklist report.

Mechanical Systems List

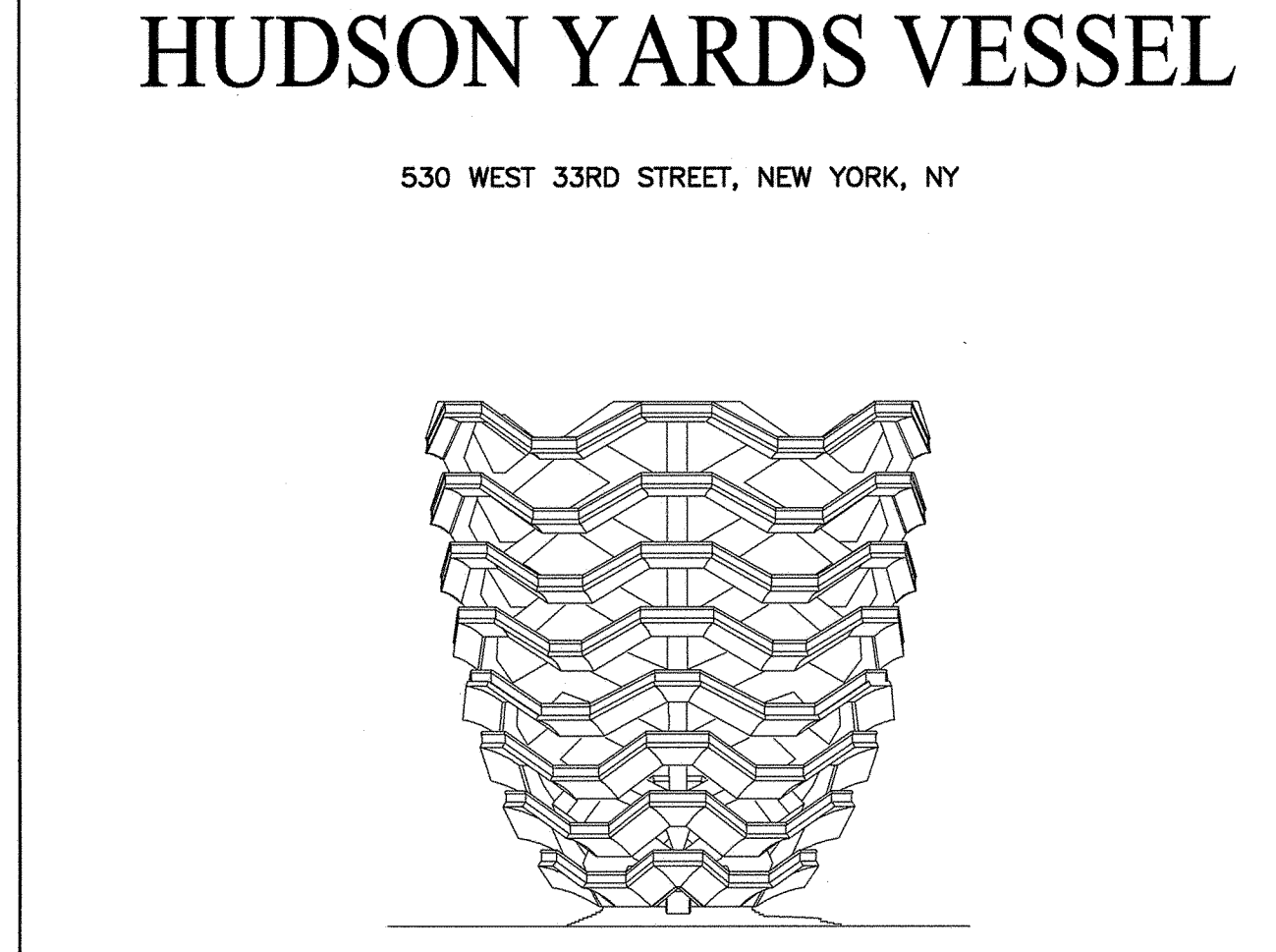
System Type & Description	Compliance
1. HVAC System 1 (Multi-Zone of Perimeter System): Cooling: 1 each - Hydronic Cal. Capacity = 84 kBtu/h, No Economizer, Economizer exception: High Efficiency Equipment No minimum efficiency required option. Fan System: FAN SYSTEM 1 [FCU1] - Compliance (Motor nameplate HP method) - Passes	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable
FAN: FAN 1 Supply, Constant Volume, 2409 CFM, 1.0 motor nameplate hp	
2. HVAC System 2 (Multi-Zone of Perimeter System): Cooling: 1 each - Hydronic Cal. Capacity = 80 kBtu/h, No Economizer, Economizer exception: High Efficiency Equipment No minimum efficiency required option. Fan System: FAN SYSTEM 2 [FCU2] - Compliance (Motor nameplate HP method) - Passes	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable
FAN: FAN 2 Supply, Constant Volume, 3460 CFM, 1.5 motor nameplate hp	

Mechanical Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2014 New York Energy Conservation Construction Code requirements in COMcheck Version 4.0.3.0 and to comply with the mandatory requirements listed in the Inspection Checklist.

Daniel Habelt - Associate Engineer Signature Date: 06/01/2016

Name - Title Signature Date

Project Title: Hudson Yards - Vessel Report date: 06/01/16
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RELATED COMPANIES

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TEL: 718-389-6100

HAROLD BLOCK MASTER PLUMBER LIC # 0195

COMcheck Software Version 4.0.3.0
Inspection Checklist

Requirements: 3.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req. ID	Plan Review	Complex?	Comments/Assumptions
C103.2 (IR67)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	All design heating and cooling loads for equipment sizing are determined in accordance with C203.2.1 calculated using an approved HVAC software with design parameters specified in Chapter 7.
C103.2 (IR64)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Refer to lighting schedules and plans.
C103.2 (IR61)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Refer to lighting schedules and plans.
C406 (IR63)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Footing / Foundation Inspection	Complex?	Comments/Assumptions
C403.2.4 (IR59)	Freeze protection and snow/ice melting systems sensors for future connection to controls.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.

Additional Comments/Assumptions:

Section # & Req. ID	Mechanical Rough-In Inspection	Complex?	Comments/Assumptions
C403.2.5 (ME59)	Demand control ventilation provided for spaces >= 100 sq. ft. and >= 3.0 cfm/sq. ft. automatic density reset controls by systems with auto economizer, auto modulating outside air damper control, or design airflow >= 5,000 cfm.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4 (IR70)	VAV fan >= 7.5 hp are driven by mechanical or electrical variable speed drive, or driven by vane axial with variable speed blades, or operate with motor demand <= 30% design kW at 30% design flow - calculations required.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
C403.4 (IR71)	VAV fan >= 7.5 hp are driven by mechanical or electrical variable speed drive, or driven by vane axial with variable speed blades, or operate with motor demand <= 30% design kW at 30% design flow - calculations required.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
C403.2 (IR65)	HVAC ducts and plenums insulated, where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Ductwork shall be insulated as per code requirements. Information to be included in specifications.
C403.2 (IR67)	HVAC piping insulation thickness, where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Piping shall be insulated as per code requirements. Information to be included in specifications.
C403.2 (IR68)	HVAC piping insulation thickness, where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Piping shall be insulated as per code requirements. Information to be included in specifications.
C403.2 (IR69)	Piping insulation exposed to weather is protected from damage (due to sun, moisture, wind, etc.).	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2 (IR72)	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2 (IR73)	Ducts and plenums sealed based on static pressure and location.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Ductwork shall be sealed as per code requirements. Information to be included in specifications.
C403.2 (IR74)	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Mechanical Rough-In Inspection	Complex?	Comments/Assumptions
C403.2 (IR66)	HVAC equipment efficiency verified.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
C403.2.5 (ME59)	Demand control ventilation provided for spaces >= 100 sq. ft. and >= 3.0 cfm/sq. ft. automatic density reset controls by systems with auto economizer, auto modulating outside air damper control, or design airflow >= 5,000 cfm.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4 (IR70)	VAV fan >= 7.5 hp are driven by mechanical or electrical variable speed drive, or driven by vane axial with variable speed blades, or operate with motor demand <= 30% design kW at 30% design flow - calculations required.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
C403.4 (IR71)	VAV fan >= 7.5 hp are driven by mechanical or electrical variable speed drive, or driven by vane axial with variable speed blades, or operate with motor demand <= 30% design kW at 30% design flow - calculations required.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
C403.2 (IR65)	HVAC ducts and plenums insulated, where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Ductwork shall be insulated as per code requirements. Information to be included in specifications.
C403.2 (IR67)	HVAC piping insulation thickness, where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Piping shall be insulated as per code requirements. Information to be included in specifications.
C403.2 (IR68)	HVAC piping insulation thickness, where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Piping shall be insulated as per code requirements. Information to be included in specifications.
C403.2 (IR69)	Piping insulation exposed to weather is protected from damage (due to sun, moisture, wind, etc.).	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2 (IR72)	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2 (IR73)	Ducts and plenums sealed based on static pressure and location.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Ductwork shall be sealed as per code requirements. Information to be included in specifications.
C403.2 (IR74)	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Mechanical Rough-In Inspection	Complex?	Comments/Assumptions
C403.4 (IR66)	VAV fan motors >= 7.5 hp to be driven by variable speed drive, have a vane axial fan with variable pitch blades, or have controls to limit fan motor demand.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4 (IR67)	VAV fan motors >= 7.5 hp to be driven by variable speed drive, have a vane axial fan with variable pitch blades, or have controls to limit fan motor demand.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4 (IR68)	VAV fans have static pressure sensors positioned to setpoint <= 1/3 total design pressure.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4 (IR69)	VAV fans have static pressure sensors positioned to setpoint <= 1/3 total design pressure.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4.2 (IR62A)	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4.2 (IR62B)	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4.3 (IR62C)	Reduce flow in pumping systems >= 10 hp to multiple chillers or boilers when others are shut down.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4.3 (IR62D)	Reduce flow in pumping systems >= 10 hp to multiple chillers or boilers when others are shut down.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2.6 (ME57)	Exhaust air energy recovery on systems meeting Table C403.2.6	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req. ID	Mechanical Rough-In Inspection	Complex?	Comments/Assumptions
C403.2.6 (ME57)	Exhaust air energy recovery systems that can heat water to 85 F or provide 60% of peak hot rejection is installed for preheating of service hot water.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.4.6 (ME51)	Condenser heat recovery systems that can heat water to 85 F or provide 60% of peak hot rejection is installed for preheating of service hot water.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2.11 (ME71)	Unenclosed spaces that are heated use only radiant heat.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.

Additional Comments/Assumptions:

Section # & Req. ID	Rough-In Electrical Inspection	Complex?	Comments/Assumptions
C405.2.1 (EL21)	Automatic controls to shut off all building lighting installed in all buildings.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.1 (EL23)	Individual lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.1 (EL15)	Lighting controls installed to uniformly reduce the lighting load by at least 20%.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.2 (EL10)	Daylight zones provided with individual controls that control the lights independent of general area lighting.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.3 (EL17)	Sleeping units have at least one master switch at the main entry door that controls snoot luminaires and switched receptacles.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C405.2.2 (EL18)	Occupancy sensors installed in required spaces.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.2 (EL20)	Primary sighted areas are equipped with required lighting controls.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.2 (EL21)	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.4 (EL25)	Automatic lighting controls for exterior lighting installed.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.2.3 (EL47)	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Lighting controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.3 (EL19)	Fluorescent luminaires with odd numbered lamp configurations that are within 10 feet centers to center of recess mounted) or are within 1 foot edge to edge of pendant or surface mounted) shall be tandem wired.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Wiring requirements shall be provided in compliance with code requirements. Information shall be included in specifications.
C405.4 (EL61)	Exit signs do not exceed 5 watts per face.	<input type="checkbox"/> Complies <input checked="" type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Exit sign requirements shall be provided in compliance with code requirements. Information shall be included in and architectural drawings.

Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.4 [F1361]	Thermostatic controls have a 5'f deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	HVAC controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C403.2.4 [F1201]	Temperature controls have setback/override restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	HVAC controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C403.2.4 [F1361]	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	HVAC controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C403.2.4 [F1461]	Automatic Controls: Setback to 55°F (heat) and 65°F (cool), 7-day clock, 2-hour occupant override, 10-hour backup.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	HVAC controls shall be provided in compliance with code requirements. Information shall be included in specifications.
C403.2.4 [F1411]	Individual heating and cooling air distribution systems with a total design supply air capacity > 10,000 cfm, served by one or more supply fans, have optimum start controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C403.2.4 [F1811]	Individual heating and cooling air distribution systems with a total design supply air capacity > 10,000 cfm, served by one or more supply fans, have optimum start controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Not Applicable.
C408.2.5 [F1711]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	As built documentation requirements shall be provided in specifications, in compliance with code requirements.
C303.3 [F181]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	O&M documentation requirements shall be provided in specifications, in compliance with code requirements.
C408.2.5 [F1431]	An air and/or hydronic system balancing report is provided for HVAC systems.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	TAB documentation requirements shall be provided in specifications, in compliance with code requirements.
C408.2.3 [F1301]	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	TAB documentation requirements shall be provided in specifications, in compliance with code requirements.
C403.2 [F1201]	HVAC systems and equipment capacity does not exceed calculated loads.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C508.2.5 [F1611]	Furnished as-built drawings for electric power systems within 30 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	As built documentation requirements shall be provided in specifications, in compliance with code requirements.

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Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
C403.3 [F1171]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	O&M documentation requirements shall be provided in specifications, in compliance with code requirements.
C405.5.2 [F1181]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the interior lighting fixture schedule for values.
C405.5.2 [F1191]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the interior lighting fixture schedule for values.
C408.2.1 [F1281]	Commissioning plan developed by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C408.2.4 [F1291]	Preliminary commissioning report completed and certified by registered design professional or approved agency.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C408.2.5 [F1301]	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C408.2.3 [F1311]	HVAC equipment has been tested to ensure proper operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C408.3 [F1331]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C408.3 [F1481]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Commissioning requirements shall be provided in specifications, in compliance with code requirements.
C406 [F1541]	Efficient HVAC performance, efficient lighting systems, or on-site supply of renewable energy consistent with what is shown the approved plans.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

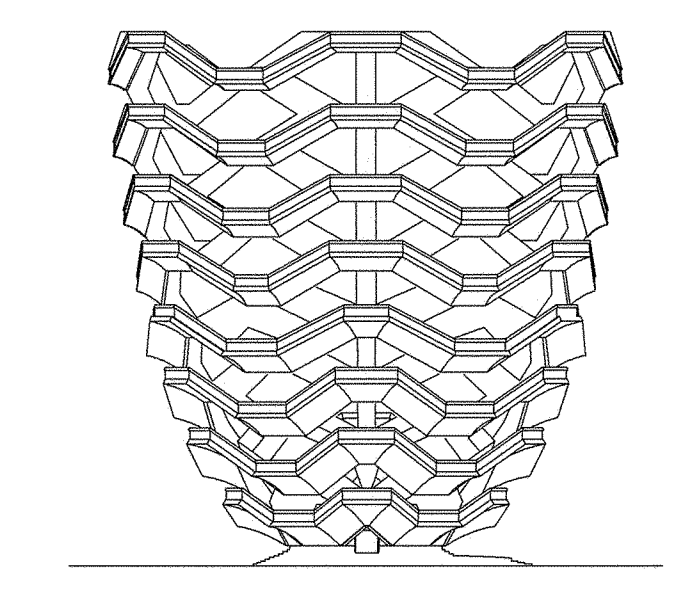
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 Data filename: \global.arup.com\americas\jbb\N-Y230000234747-004 Internal Project Data\4-04 Calculations\4-04-12 COMCheck\HY Vessel ComCheck_Updated.cck Page 13 of 14

Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
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Project Title: Hudson Yards - Vessel Report date: 06/01/16
 Data filename: \global.arup.com\americas\jbb\N-Y230000234747-004 Internal Project Data\4-04 Calculations\4-04-12 COMCheck\HY Vessel ComCheck_Updated.cck Page 14 of 14

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
 NEW YORK, NEW YORK 10023
 TEL: 212-801-1000

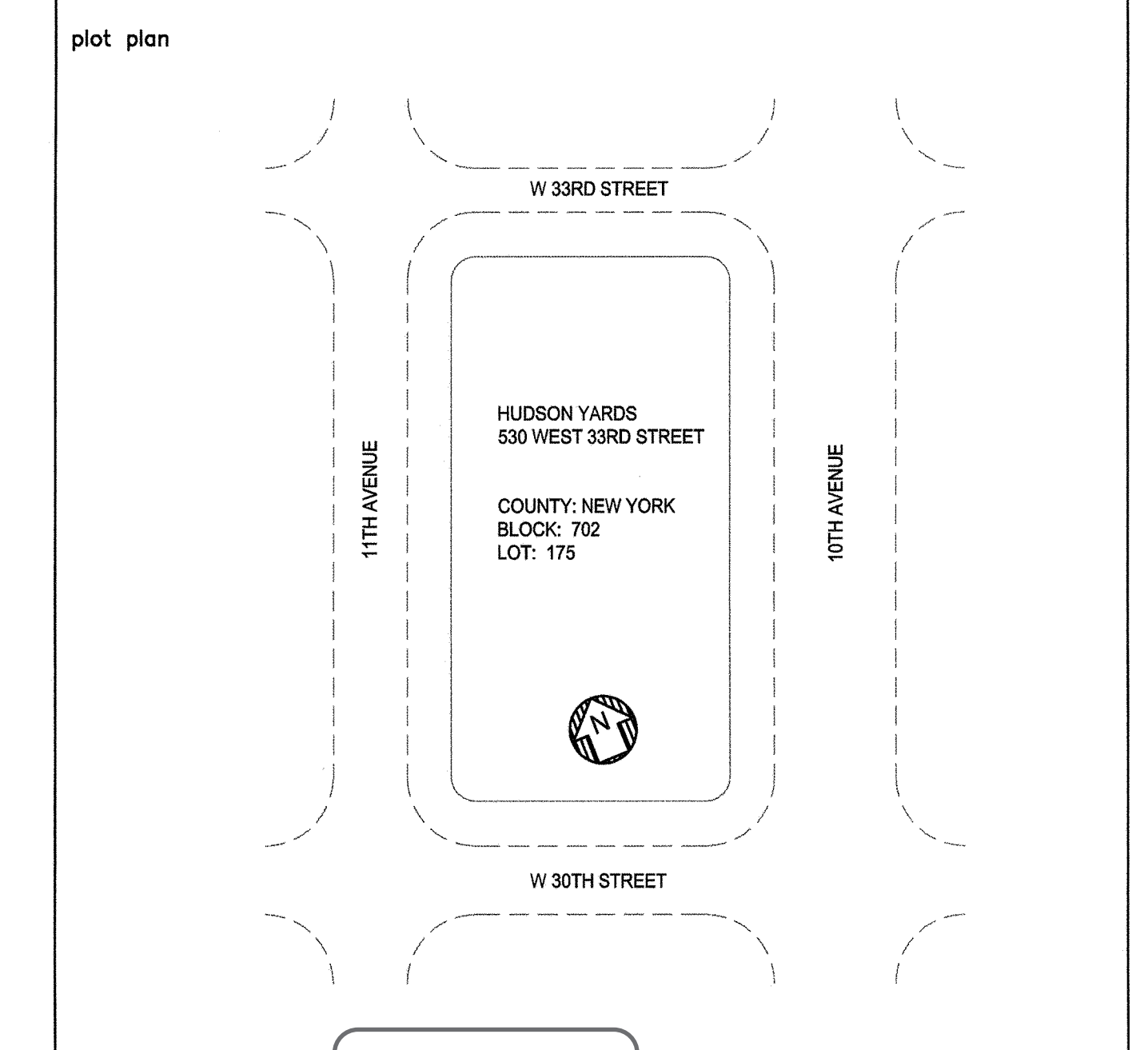


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PAGE PLUMBING CORP.

41 BOX STREET HAROLD BLOCK
 BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
 TEL: 718-389-6100

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0	ISSUED FOR FILING	06/20/16	



PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2014 NEW YORK CITY ENERGY CONSERVATION CODE.

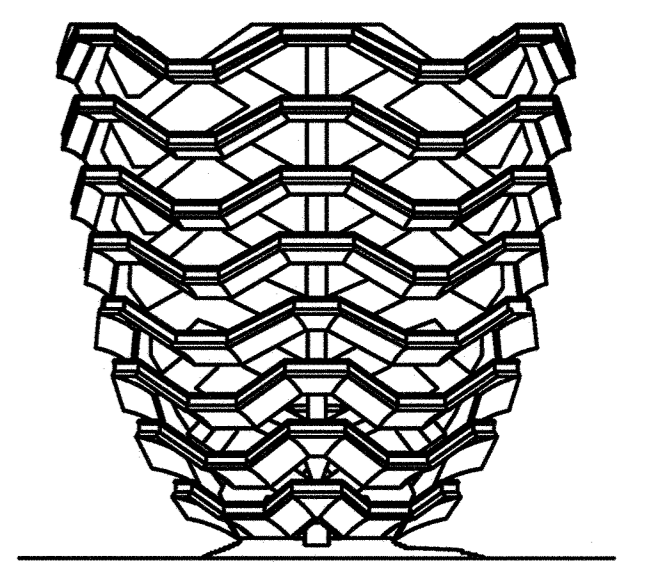
BUILDING DEPARTMENT NOTE

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HUDSON YARDS VESSEL
 SHEET No. 2
 scale N.T.S.
 date 5/06/16
 project no. 14986
 rev 0
 EN-201.00
 23 OF 23

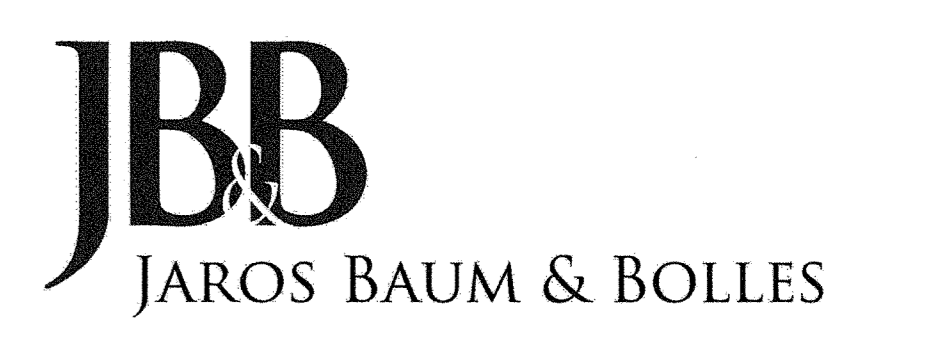
HUDSON YARDS VESSEL

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PACE PLUMBING CORP.

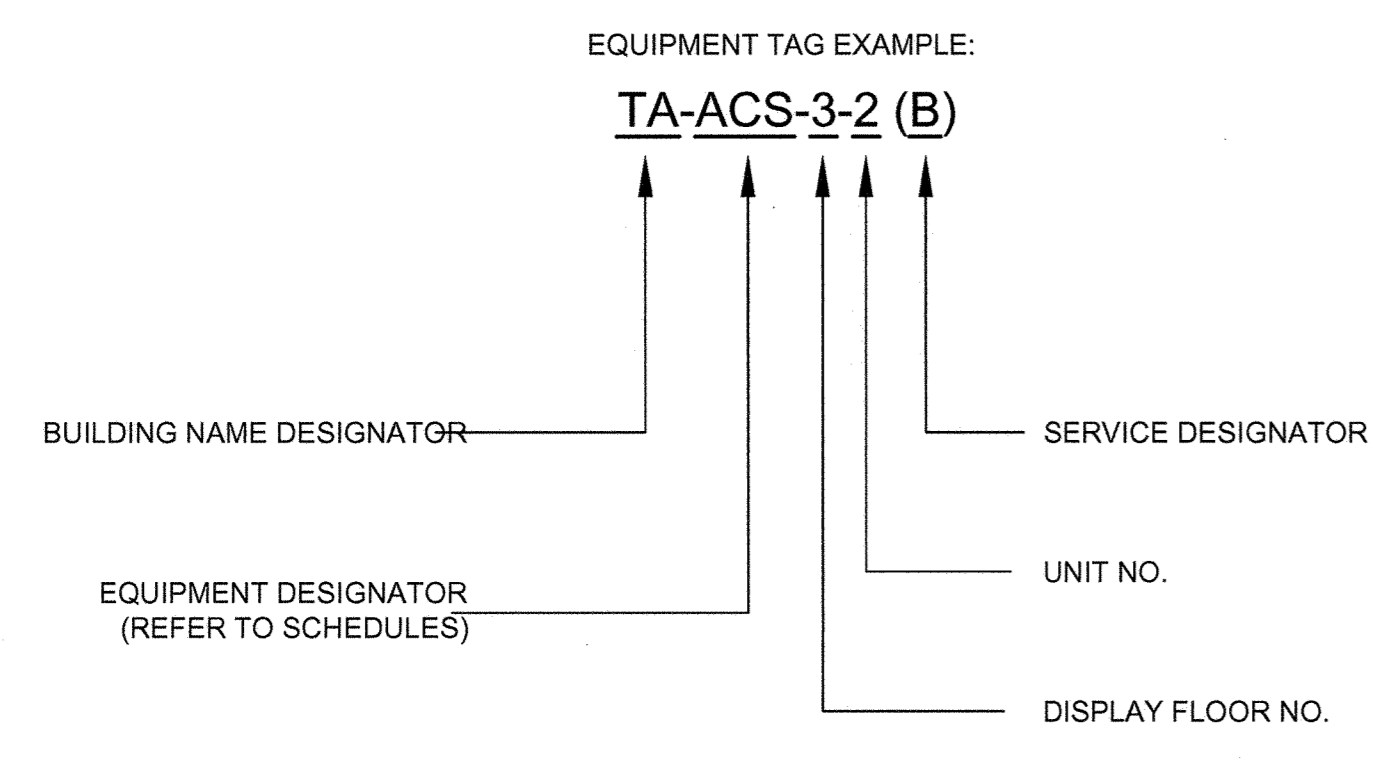
41 BOX STREET BROOKLYN, NEW YORK 11222 HAROLD BLOCK MASTER PLUMBER LIC # 0195
TEL: 718-389-6100

DRAWING LIST			ISSUED FOR FILING
DRAWING No.	DRAWING TITLE		05/20/2016
1	M-001.00	MECHANICAL ABBREVIATIONS, SYMBOLS, GENERAL NOTES, NYC NOTES, DWG LIST	✓
2	M-002.00	SPECIFICATIONS SHEET	✓
3	M-003.00	MECHANICAL SYSTEM SCHEMATIC, SCHEDULES, EQUIPMENT ROOM PLAN	✓
4	M-004.00	MECHANICAL DETAILS SHEET	✓

GENERAL NOTES

- ALL LOW PRESSURE BRANCH DUCWORK (SUPPLY AND RETURN) SHALL BE PROVIDED WITH VOLUME DAMPERS RESPECTIVELY.
- EACH FCU SHALL BE PROVIDED WITH A THERMOSTAT. THERMOSTATS SHALL BE LOCATED AS SHOWN OR AS DIRECTED. FINAL LOCATIONS TO BE VERIFIED WITH THE ARCHITECT. FINISH AND COLOR TO BE SELECTED BY THE ARCHITECT. THERMOSTAT SHOULD BE LOCATED CENTERLINE AT 4'-6" A.F.F. AND 6" FROM EDGE OF DOOR U.O.N. MANUFACTURER'S LOGO SHALL NOT BE EXPOSED.
- FCU SHOWN ON DRAWINGS ARE SCHEMATIC. SEE DETAIL OF INSTALLATION FOR ACTUAL TYPICAL ARRANGEMENT REQUIRED.
- ALL PRESSURE AND TEMPERATURE GAUGES ARE SCHEMATICALLY SHOWN ON THE PLANS. REFER TO THE SPECIFICATIONS FOR EXACT TYPES.
- PROVIDE DUCT AND WALL/CEILING (WHERE APPLICABLE) ACCESS DOORS AT ALL FD'S, SD'S, FSD'S, AND ALD'S.
- DURING CONSTRUCTION ALL DAMAGED FIRE PROOFING AT HANGERS SHALL BE REPAIRED.

KEY TO EQUIPMENT TAGS



BUILDING NAME	DESIGNATOR
TOWER A	TA
TOWER B	TB
TOWER C	TC
TOWER D	TD
TOWER E	TE
RETAL PODIUM	PD
PLATFORM	PL
CULTURAL SHED	CS
LIRR	LR
PLAZA	PZ
ALL BUILDINGS	ERY
VESSEL	VS

SERVICE	DESIGNATOR
BASE BUILDING	B
COGEN	CG
COMMON YARDS	ERY
FINANCIAL SERVICES TENANT	FST
LOADING DOCK	LD
LIRR	LR
OBSERVATION DECK	OD
PLAZA	PZ
RETAL	R
TENANT OFFICE	TO
TIME WARNER	TW

NYCBUILDING CODE NOTES

- GENERAL N.Y.C. BUILDING CODE NOTES
- (THESE DOCUMENTS TO BE IN COMPLIANCE WITH THE CITY OF NEW YORK BUILDING CODE AND THE CITY OF NEW YORK MECHANICAL CODE, EFFECTIVE DECEMBER 31, 2014)
- HEATING VENTILATING AND AIR CONDITIONING MATERIALS, EQUIPMENT AND SYSTEMS SUBJECT TO SPECIAL INSPECTION: **REQUIRED**
 - MECHANICAL SYSTEMS PER BC1704.16; AS REGULATED BY NYC MECHANICAL CODE, CHAPTERS 10, 11 & 12, SECTIONS MC 107, MC 307 AND AS PERFORMED IN ACCORDANCE WITH SECTIONS MC 507.16, MC 1011, MC 1108 AND MC 1208 OF THE NYC MECHANICAL CODE.
 - SMOKE CONTROL SYSTEMS PER BC 1704.15 & BC 909:
 - COVERED MALL.
 - ATRIUM.
 - STAGE & PLATFORM.
 - STAR PRESSURIZATION.
 - UNDERGROUND BUILDING.
 - GROUP I-3 OCCUPANCIES.
 - FUEL-OIL STORAGE AND FUEL OIL PIPING SYSTEMS PER BC 1704.17 AS REGULATED BY MC 1308 OF THE NYC MECHANICAL CODE.
 - HIGH PRESSURE STEAM PIPING (WELDING) PER BC 1704.18 AS REGULATED BY MC 1210 OF THE NYC MECHANICAL CODE.
 - HEATING SYSTEMS PER BC 1704.25 AND TESTED IN ACCORDANCE WITH SECTION MC 1011 OF THE NYC MECHANICAL CODE.
 - CHIMNEYS PER BC 1704.26 AND PERFORMED IN ACCORDANCE WITH MC 810 OF THE NYC MECHANICAL CODE.
 - HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS SUPPORTING THE OPERATION OF EMERGENCY POWER SYSTEMS PER BC 1704.31 & BC 2702.
 - FIRE-RESISTANT PENETRATIONS AND JOINTS PER BC 1704.27
 - POST-INSTALLED ANCHORS (BB# 2014-018, 2014-019) PER BC 1704.32.
 - SEISMIC ISOLATION SYSTEMS PER 1707.7 & 1707.8.
 - ENERGY CODE COMPLIANCE INSPECTIONS PER BC 110.3.5
 - FINAL INSPECTION PER 28-116.2.4.2 AND BC 110.5 AND DIRECTIVE 14 OF 1975 AND 1 RCNY §101-10.
 - UPON COMPLETION OF VENTILATION SYSTEM, A TEST WILL BE CONDUCTED UNDER THE PRESENCE AND DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT QUALIFIED TO CONDUCT SUCH TESTS. THE TESTS SHALL SHOW COMPLIANCE WITH CODE REQUIREMENTS FOR VENTILATION AND PROPER FUNCTION OF ALL OPERATING DEVICES BEFORE THE SYSTEM IS APPROVED.
 - THE LICENSED PROFESSIONAL ENGINEER OR ARCHITECT WHO CONDUCTS THE TEST SHALL FILE THE CERTIFICATE AS TO WHETHER THE SYSTEM COMPLIES WITH APPLICABLE LAWS. THE TEST AND THE REPORT SHALL BE MADE IN A MANNER SATISFACTORY TO THE SUPERINTENDENT.
 - A STATEMENT SHALL BE FILED BY THE OWNER THAT THE SYSTEM OF VENTILATION WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING NORMAL OCCUPANCY OF THE BUILDING AS REQUIRED BY THE APPLICABLE SECTION OF THE CODE.
 - NEW YORK CITY MECHANICAL CODE CHAPTER 4 SECTION 401 SHALL GOVERN THE VENTILATION OF THE SPACES WITHIN THE BUILDING INTENDED TO BE OCCUPIED.
 - MECHANICAL VENTILATION BY A METHOD OF SUPPLY AIR AND RETURN OR EXHAUST AIR SHALL BE PROVIDED AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 4, SECTION 403. THE AMOUNT OF SUPPLY AIR SHALL BE APPROXIMATELY EQUAL TO THE AMOUNT OF RETURN AND EXHAUST AIR. THE SYSTEM SHALL NOT BE PROHIBITED FROM PRODUCING NEGATIVE OR POSITIVE PRESSURE. THE SYSTEM TO CONVEY VENTILATION AIR SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NEW YORK CITY MECHANICAL CODE CHAPTER 6.
 - MECHANICAL VENTILATION SYSTEMS SHALL BE PROVIDED WITH MANUAL OR AUTOMATIC CONTROLS AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 4 SECTION 405.
 - DUCT SYSTEMS USED FOR THE MOVEMENT OF AIR IN AIR CONDITIONING, HEATING, VENTILATING AND EXHAUST SYSTEMS SHALL CONFORM TO PROVISIONS OF NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 601.
 - THE INSTALLATION AND CONSTRUCTION OF DUCTWORK SHALL BE AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 603.
 - PROTECTION OF DUCT PENETRATIONS AND AIR TRANSFER OPENINGS IN ASSEMBLIES REQUIRED TO BE PROTECTED SHALL BE AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 607. FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND CEILING RADIATION DAMPERS SHALL BE PROVIDED AT THE LOCATIONS PRESCRIBED IN SECTIONS 607.5.1 THROUGH 607.5.5. WHERE AN ASSEMBLY IS REQUIRED TO HAVE BOTH FIRE DAMPERS AND SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, OR A FIRE DAMPER AND A SMOKE DAMPER SHALL BE REQUIRED.
 - DUCT AND AIR TRANSFER OPENINGS THAT PENETRATE FIRE RATED PARTITIONS SHALL COMPLY WITH ALL REQUIREMENTS LISTED UNDER THE BUILDING CODE SECTION 716 AS APPLICABLE TO SYSTEM DESIGN.

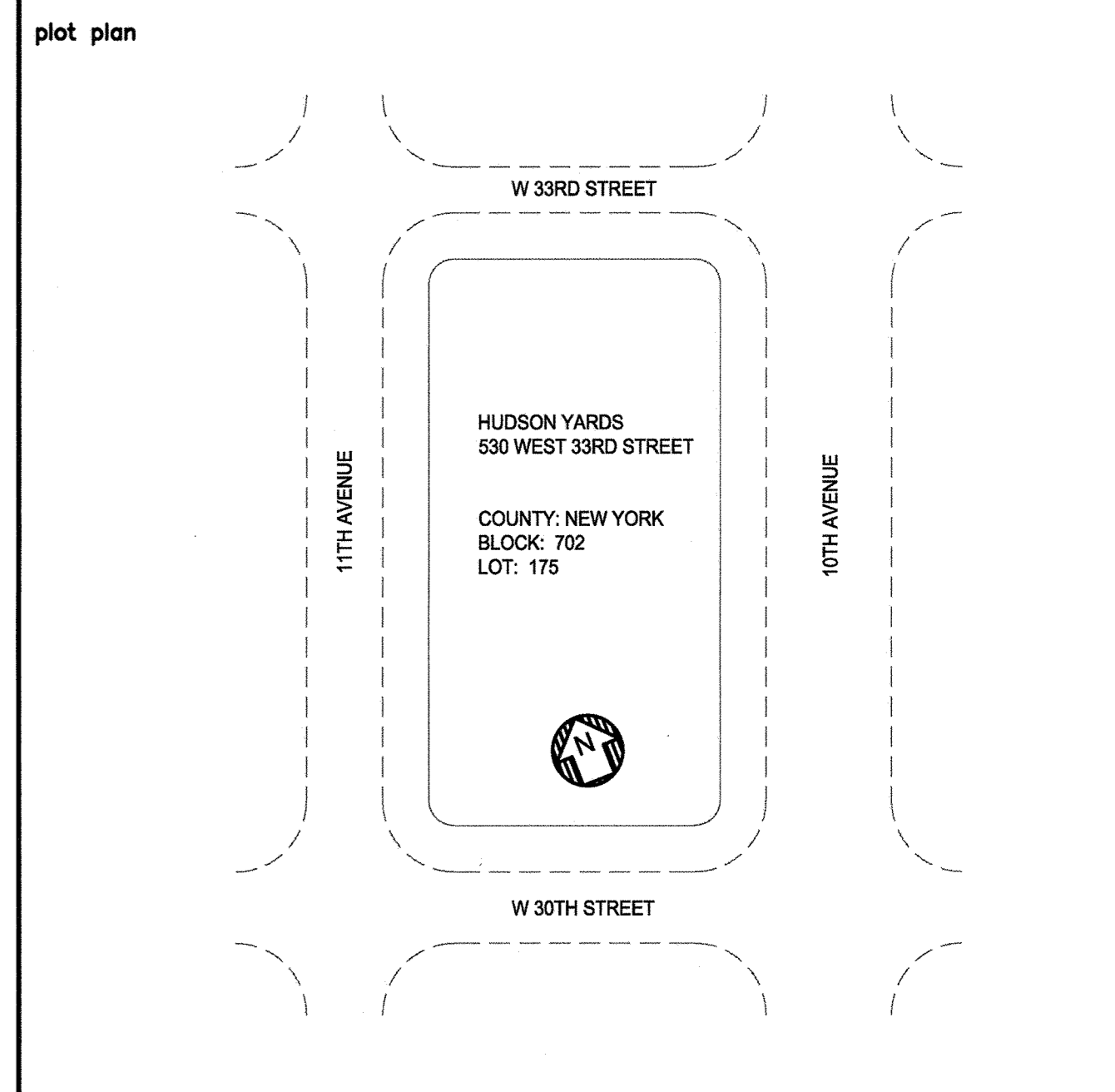
ABBREVIATIONS

ALD	AUTOMATIC LOUVER DAMPER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
DB	DRY BULB TEMPERATURE
EA	EXHAUST AIR
EADB	ENTERING AIR DRY BULB TEMPERATURE
EAWB	ENTERING AIR WET BULB TEMPERATURE
EF	EXHAUST FAN
F	FAHRENHEIT
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPS
FSD	COMBINATION FIRE SMOKE DAMPER
GPM	GALLONS PER MINUTE
GWR	GLYCOL CHILLED WATER RETURN
GWS	GLYCOL CHILLED WATER SUPPLY
HP	HORSEPOWER
IN	INCHES
KW	KILOWATT
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
OA	OUTSIDE AIR
PD	PRESSURE DIFFERENTIAL
PSI	POUNDS PER SQUARE INCH
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SP	STATIC PRESSURE
SS	SUB SURFACE LEVEL
SQ FT	SQUARE FEET
TA	TRANSFER AIR
TYP	TYPICAL
UO/N	UNLESS OTHERWISE NOTED
WB	WET BULB TEMPERATURE
WG	WATER GAGE
WMS	WIRE MESH SCREEN

SYMBOL LIST

	DIRECTION OF FLOW
	EXPANSION JOINT
	UNION
	PUMPED CONDENSATE
	SHUT OFF VALVE (NORMALLY OPEN)
	SHUT OFF VALVE (NORMALLY CLOSED)
	MOTORIZED VALVE
	BALANCING VALVE
	AUTOMATIC CONTROL VALVE
	PIPE TURNING DOWN
	PIPE TURNING UP
	SUPPLY AIR DUCT UP
	EXHAUST OR RETURN AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	EXHAUST OR RETURN AIR DUCT DOWN
	DUCTWORK
	THERMOSTAT
	FAN
	MOTOR
	COMBINATION FIRE/SMOKE DAMPER
	VOLUME DAMPER
	FLEXIBLE CONNECTION
	CONNECT NEW WORK TO EXISTING

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HUDSON YARDS VESSEL

MECHANICAL ABBREVIATIONS, SYMBOLS, GENERAL NOTES, NYC NOTES, DWG LIST

drawn by: MG
date: 5/06/16

scale: NYS Development
project no.: 14986

check by: [Signature]
rev: 0

plot no.: M-001.00

1 OF 4

1. SCOPE OF WORK

A. THE WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, HOISTING, SCAFFOLDING, SUPPORT, SUPERVISION, SERVICES AND OPERATIONS NECESSARY TO COMPLETE THE INSTALLATION OF THE HEATING, VENTILATING AND AIR CONDITIONING WORK SHOWN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: FITOUT OF MER ROOMS SUPPORTING THE VESSEL.

2. GENERAL CONDITIONS - HVAC

A. THE GENERAL CONDITIONS AND THE SUPPLEMENTARY CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AND THE ARCHITECTS AND ENGINEER'S SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT. B. THE ENTIRE INSTALLATION SHALL CONFORM WITH THE MOST RECENTLY REVISED VERSION OF ALL APPLICABLE LAWS, RULES, REGULATIONS, CODES, ORDINANCES OF FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

5. DAMPERS

5.1 GENERAL REQUIREMENTS
A. DAMPERS SHALL BE CONSTRUCTED AND INSTALLED IN STRICT ACCORDANCE WITH THE FOLLOWING:
1. MANUFACTURER'S REQUIREMENTS.
2. UL 33: STANDARD FOR HEAT RESPONSIVE LINKS FOR FIRE-PROTECTION SERVICE.

ON THE SHOP DRAWINGS AND REPORTED TO THE ARCHITECT AND/OR ENGINEER.
B. SHEET METAL DUCT AND PLENUM CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF SMACNA - HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE- SECOND EDITION 1995, WITH THE EXCEPTIONS HEREIN NOTED.
C. SHOP STANDARDS FOR SHEET METAL AND DUCT CONSTRUCTION MUST BE SUBMITTED AND APPROVED PRIOR TO FABRICATION.

- * JACKET VAPOR PERMEABILITY: 0.02 PERMS.
* JACKET PUNCTURE RESISTANCE: 50 UNITS (BEACH).

7. CLEANING, TESTING AND ADJUSTING

A. DURING CONSTRUCTION, PROPERLY PROTECT ALL OPEN ENDS OF PIPING AND DUCTWORK TO PREVENT THE ENTRANCE OF SAND, DIRT AND OTHER FOREIGN MATTER IN ACCORDANCE WITH SMACNA STANDARDS.
B. ALL AC UNITS, FANS, REGISTERS AND DIFFUSERS ARE TO BE BALANCED WITHIN PLUS 10%, MINUS 5% OF THE QUANTITIES SHOWN ON THE PLANS. BALANCING IS TO BE PERFORMED BY AN INDEPENDENT BALANCING AGENCY IN ACCORDANCE WITH A.S.C. OR N.A.A.E. NATIONAL STANDARDS.

8. INSTALLATION

- 1. ALL DUCTWORK AND PIPING SHALL BE PROVIDED WITH PERMANENT PHENOLIC LABELS WITH 1/2" HIGH LABELS AT 5'-0" INTERVALS.
2. ALL EQUIPMENT SHALL HAVE PERMANENT LABELLING.

9. APPROVED MANUFACTURERS

- A. GRILLES: ANEMOSTAT/TITUS
B. FANS: GREENHECK
C. FAN COIL UNITS: IEC
D. COMBINATION FIRE/SMOKE DAMPERS AND AUTOMATIC CONTROL DAMPERS: IMPERIAL/POTTORFF/RUSKIN

10. CONTROLS

A. ALL CONTROL DEVICES, DDC CONTROLLERS, TEMPERATURE SENSORS, CONTROL VALVES, ACTUATORS, SOFTWARE PROGRAMMING, GRAPHICS, POWER AND CONTROL WIRING, AND CONDUIT WIRING SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING:
1. AUTOMATIC CONTROL VALVES SHALL BE SINGLE-SEATED GLOBE VALVES AND SHALL HAVE EQUAL PERCENTAGE FLOW CHARACTERISTICS UNLESS SPECIFIED OTHERWISE. CONTROL VALVES 2 INCHES AND SMALLER SHALL HAVE BRONZE BODIES AND STAINLESS STEEL TRIM AND STEM. END CONNECTIONS SHALL BE THREADED. CONTROL VALVES 2-1/2 IN. AND LARGER IN A SERVICE WHERE PRESSURE DOES NOT EXCEED 125 PSIG AT 350F, SHALL HAVE 125 POUND CAST IRON BODIES. TRIM AND STEM SHALL BE STAINLESS STEEL. END CONNECTIONS SHALL BE FLANGED. VALVES 2-1/2 IN. AND LARGER IN A SERVICE WHERE PRESSURE DOES NOT EXCEED 200 PSIG AT 350F SHALL HAVE 125 POUND CAST IRON BODIES. TRIM AND STEM SHALL BE STAINLESS STEEL. END CONNECTIONS SHALL BE FLANGED. VALVES SHALL HAVE SUFFICIENT STUFFING BOX PROTECTION TO ENSURE AGAINST LEAKAGE AT HYDROSTATIC HEAD INVOLVED.

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Image of the vessel structure

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41 BOX STREET
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HAROLD BLOCK
MASTER PLUMBER LIC # 0195

2) TO EXECUTE THE WORK IN THE BEST AND MOST THOROUGH MANNER AND TO THE SATISFACTION OF THE OWNER, ARCHITECT AND CONSULTING ENGINEERS, WHO WILL JOINTLY INTERPRET THE MEANING OF THE DRAWINGS AND SPECIFICATIONS AND SHALL HAVE THE POWER TO RECTIFY ANY WORK AND MATERIALS WHICH, IN THEIR JUDGMENT, ARE NOT IN FULL ACCORDANCE THEREWITH.

3) TO BE RESPONSIBLE FOR ALL MATERIAL UNTIL COMPLETION AND FINAL ACCEPTANCE. REPLACE ANY MATERIAL AND/OR EQUIPMENT WHICH MAY BE DAMAGED, LOST OR STOLEN AND TO DO OVER AND ABOVE ANY REJECTED WORK WITHOUT ADDITIONAL COST TO THE OWNER. GUARD THE BUILDING AND ITS CONTENTS AGAINST DAMAGE BY THE CONTRACTOR OR HIS EMPLOYEES, AND MAKE GOOD ANY DAMAGE FREE OF CHARGE.

4) THAT HE WILL PROVIDE AND MAINTAIN A SAFE PLACE TO WORK AND THAT HE WILL COMPLY WITH ALL LAWS AND REGULATIONS OF ANY GOVERNMENTAL AUTHORITY HAVING JURISDICTION THEREOF, AND THAT HE AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER, ARCHITECT AND CONSULTING ENGINEERS FROM AND AGAINST ANY LIABILITY, LOSS, DAMAGE OR EXPENSE, INCLUDING ATTORNEY'S FEES, ARISING FROM A FAILURE OR ALLEGED FAILURE ON HIS PART TO FULFILL THE OBLIGATIONS ASSUMED BY HIM OR THEM IN PERFORMANCE OF THE WORK, INCLUDING ANY ACT OR OMISSION ALLEGEDLY RESULTING IN DEATH OR PERSONAL INJURY OR PROPERTY DAMAGE OR IMPROPER CONSTRUCTION, CONSTRUCTION TECHNIQUES, OR THE USE OF IMPROPER OR INAPPROPRIATE MATERIALS, METHODS OR TOOLS.

5) THAT ANY CONTROVERSY OR DISPUTE TO WHICH THE CONTRACTOR, OWNER, ARCHITECT OR CONSULTING ENGINEERS ARE PARTIES SHALL BE SUBMITTED TO ARBITRATION BEFORE THE AMERICAN ARBITRATION ASSOCIATION FOR DECISION IN ACCORDANCE WITH THE RULES OF SUCH ASSOCIATION FOR CONSTRUCTION INDUSTRIES. THE CONTRACTOR AGREES TO MAKE AVAILABLE TO THE CONSULTING ENGINEERS, ON DEMAND, SIGNED COPIES OF THE CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR AND BETWEEN THE CONTRACTOR AND HIS SUBCONTRACTORS. THE CONTRACTOR AGREES THAT BY SUBMITTING A BID WHICH IS ACCEPTED, THIS PARAGRAPH SHALL BE DEEMED A WRITTEN AGREEMENT TO SUBMIT TO ARBITRATION ANY CONTROVERSY THEREAFTER ARISING.

6) PUT WORK IN PLACE AS FAST AS REASONABLY POSSIBLE; AT ALL TIMES, KEEP A COMPETENT FOREMAN IN CHARGE OF THE WORK AND FACILITATE ITS INSPECTION BY THE CONTRACTOR, ARCHITECT AND CONSULTING ENGINEERS.
7) EXCEPT FOR SUCH CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE OWNER, ARCHITECT AND CONSULTING ENGINEERS, IN ACCORDANCE WITH ALTERATIONS OR OPTIONS STATED HEREAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, COMPLETE IN EVERY WAY FOR EFFICIENT AND SATISFACTORY OPERATION WHEN DELIVERED TO THE OWNER.

8) THAT THE MATERIALS WILL BE NEW AND THE WORKMANSHIP SUPPLIED UNDER THESE SPECIFICATIONS WILL BE OF THE BEST GRADE, THE APPARATUS WILL BE ERECTED IN A PRACTICAL AND FIRST CLASS MANNER, IT WILL BE COMPLETE AND READY FOR OPERATION, NOTHING OMITTED IN THE WAY OF LABOR AND MATERIAL REQUIRED TO MAKE IT SO, ALTHOUGH NOT SPECIFICALLY SHOWN IN DETAIL OR MENTIONED HEREIN, AND THAT IT WILL BE DELIVERED IN GOOD WORKING ORDER, COMPLETE AND PERFECT IN EVERY RESPECT WITHOUT ADDITIONAL COST.

9) THAT SUBMISSION OF A BID IS A REPRESENTATION THAT THEY HAVE BEEN THOROUGHLY ACQUAINTED WITH THE WORK INVOLVED AND HAVE OBTAINED AND VERIFIED AT THE BUILDING ALL MEASUREMENTS NECESSARY FOR THE PROPER INSTALLATION OF WORK SHOWN ON THE PLANS AND SPECIFICATIONS AND THAT THEY UNDERSTAND AND NECESSARY FOR THE PROPER INSTALLATION OF THEIR SECTIONS. THE CONTRACTOR SHALL COORDINATE FOR FINISHES ADJACENT TO WORK OF THIS SECTION AND TO ARRANGE TO HAVE VISIBLE PORTIONS OF WORK FIT IN AND HARMONIZE WITH THE FINISH IN A MANNER SATISFACTORY TO THE ARCHITECT.

10) TO MAKE EVERY EFFORT TO FURNISH ALL EQUIPMENT OF ANY GENERIC TYPE FROM ONE MANUFACTURER.
11) WHERE INCONSISTENCIES OCCUR BETWEEN THE PLANS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT ITSELF, THE ITEM OR ARRANGEMENT OF BETTER QUALITY, GREATER QUANTITY OR HIGHER COST HAS BEEN INCLUDED IN THE BASIS BID.

H. DELIVERY AND STORAGE OF MATERIALS SHALL BE PERFORMED AS DIRECTED BY THE TENANT REPRESENTATIVE AND COORDINATED WITH THE BUILDING OWNER'S REPRESENTATIVE.
I. ALL WORK SHALL COMPLY WITH BUILDING RULES AND REGULATIONS GOVERNING TENANT ALTERATIONS.

J. THE CONTRACTOR SHALL PREPARE AND SUBMIT ALL APPLICATIONS TO AUTHORITIES AND OBTAIN ALL NECESSARY BUILDING PERMITS, EQUIPMENT USE PERMITS, COMPLETE ALL TESTS AND PAY ALL NECESSARY FEES.
K. WHERE REQUIRED BY CODE THE OWNER WILL EMPLOY THE SERVICES OF A SPECIAL INSPECTOR TO PERFORM INSPECTIONS OF MATERIALS, INSTALLATIONS, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND REFERENCE STANDARDS.

L. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURFACES, UTILITIES, MECHANICAL SYSTEMS, ETC., AND REPAIR ALL DAMAGES TO SAME DURING THE COURSE OF THIS CONTRACTOR'S WORK, AT HIS EXPENSE.

M. THE WORK SHALL BE PERFORMED IN PHASES IN ACCORDANCE WITH THE TENANTS, ARCHITECTS AND/OR ENGINEER'S SCHEDULE. ANY REQUIRED SHUTDOWN OF EXISTING EQUIPMENT OR SERVICES WHICH NEW EQUIPMENT SERVES AND/OR IS CONNECTED THERETO MUST BE SCHEDULED THROUGH THE BUILDING OWNER'S REPRESENTATIVE.

N. SUBMIT SHEET METAL SHOP STANDARDS, EQUIPMENT CUTS, DETAILED COORDINATED SHOP DRAWINGS OF ALL PIPING AND DUCT LAYOUTS AND SHOP DRAWINGS SHOWING THE METHOD OF SUPPORT AND HEIGHT OF SUPPORT AND HEIGHT OF ALL EQUIPMENT, PIPING AND DUCTWORK FOR REVIEW BY THE ARCHITECT, ENGINEER AND BUILDING STRUCTURAL ENGINEER. PROMPTLY REVISE SHOP DRAWINGS AS REQUIRED BY THE ARCHITECT, ENGINEER OR ENGINEER AND RESUBMIT FOR SHOP APPROVAL AND APPROVED BY ARCHITECT AND/OR ENGINEER. COORDINATED DRAWINGS SHALL INCLUDE ALL MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION AND GENERAL CONSTRUCTION DRAWINGS.

O. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND/OR SAMPLES WITH REASONABLE PROMPTNESS AND WILL RETURN THEM TO THE CONTRACTOR, STAMPED TO INDICATE THE APPROPRIATE ACTION AS FOLLOWS:
1) "NO EXCEPTION TAKEN" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL MUST BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF, FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR MUST RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT".

2) "MAKE CORRECTIONS NOTED" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL MUST BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF, FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR MUST RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT".

3) "REVISE AND RESUBMIT" MEANS THAT THE CONTRACTOR MUST COMPLY WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND RESUBMIT BEFORE FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE PROJECT SITE.

4) "REJECTED" MEANS THAT THE SUBMITTAL DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS AND THAT FABRICATION, MANUFACTURE OR CONSTRUCTION SHALL NOT PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE PROJECT SITE.

5) ALL NEW AND EXISTING WALL-HIGHT PARTITIONS (I.E., TO UNDERSIDE OF SLAB ABOVE) EXCEPT ROOMS WHERE HUMIDIFICATION OR INTEGRITY OF SOUNDPROOFING IS REQUIRED, SHALL BE PROVIDED WITH A TRANSFER OPENING IN WALL ABOVE CEILING. MECHANICAL CONTRACTOR TO CO-ORDINATE THIS REQUIREMENT WITH THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR. TRANSFER OPENINGS (T.O.) SHALL BE SIZED FOR A VELOCITY OF 400 FT./MIN. AND PROVIDED WITH FIRE DAMPERS UNLESS OTHERWISE NOTED.

6) REMOVABLE ACCESS FLEES OR ACCESS DOORS ARE REQUIRED IN HUNG CEILING FOR VOLUME DAMPERS, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AUTOMATIC LOWERED DAMPERS, SMOKE DETECTORS, VALVES, AND ALL OTHER MECHANICAL EQUIPMENT WHICH REQUIRES SERVICE. FURNISH ACCESS LOCATION REQUIREMENTS TO CONSTRUCTION MANAGER/GENERAL CONTRACTOR.

R. PREPARE AND FURNISH TO THE OWNER AS-BUILT DRAWINGS UTILIZING THE LATEST VERSION OF AUTOCAD EMPLOYING THE BUILDING OWNER'S LAYERING SYSTEM FOR ALL WORK INSTALLED. PROVIDE OPERATING AND MAINTENANCE MANUALS (3 COPIES), INCLUDING WIRING DIAGRAMS, LUBRICATION CHARTS AND RECOMMENDED PREVENTATIVE MAINTENANCE PROCEDURES, FOR EACH SYSTEM OR PIECE OF EQUIPMENT.

3. GRILLES, REGISTERS, DIFFUSERS,

A. CEILING DIFFUSERS, RETURN GRILLES AND REGISTERS SHALL BE SIZED IN ACCORDANCE WITH THE TABLES ON THE DRAWINGS. SUPPLY REGISTERS SHALL BE FURNISHED WITH O.B.D.'S AND PATTERNS CONTROLLERS. RETURN REGISTERS SHALL BE PROVIDED WITH O.B.D.'S. FRAME AND BORDER TYPES ARE TO BE COMPATIBLE WITH CEILING CONSTRUCTION. THE COLOR OF ALL AIR DEVICES IS SUBJECT TO THE ARCHITECT'S APPROVAL. PROVIDE BLANK-OFF BAFFLES IN CEILING DIFFUSERS AS SHOWN ON DRAWINGS. FOR EXACT LOCATIONS OF DIFFUSERS, GRILLES AND REGISTERS, REFER TO ARCHITECTURAL DRAWINGS.

4. SHEETMETAL AND DUCTWORK

A. DUCT LAYOUT SHOWN IS A SCHEMATIC REPRESENTATION OF DESIGN INTENT, NO ADDED COMPENSATION SHALL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS, COORDINATION WITH BOTH NEW AND EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. ANY MAJOR VARIANCES OR DISCREPANCIES ARE TO BE INDICATED

5.2 MANUAL BALANCING DAMPERS
A. MANUAL BALANCING DAMPERS SHALL BE OF THE QUADRANT TYPE, OF HEAVY CONSTRUCTION, PIVOTED TO TURN EASILY, AND PROVIDED WITH APPROVED BEARINGS, OPERATING AND LOCKING DEVICES, MOUNTED ON THE OUTSIDE OF THE DUCT IN AN ACCESSIBLE LOCATION.
B. SINGLE-BLADE DAMPERS MAY ONLY BE USED IN DUCTS LESS THAN 12 INCHES (305 MM) HIGH. IN DUCTS 18 INCHES (457 MM) WIDE OR LESS, THEY SHALL BE CONSTRUCTED OF 20 GAUGE GALVANIZED STEEL WITH HEMMED EDGES. IN DUCTS GREATER THAN 18 INCHES WIDE BUT NO GREATER THAN 48 INCHES (1,219 MM), THE BLADES SHALL BE CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL SUPPORTED WITH A CONTINUOUS 1/2 INCH (13 MM) ROD AND CAST ALLOY BEARINGS. BLADES FOR ROUND DAMPERS SHALL BE 2 X 20 GAUGE LAMINATED TOGETHER.

5.3 COMBINATION FIRE/SMOKE DAMPERS
A. SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE CLASS II LEAKAGE RATED TO MEET THE REQUIREMENTS OF NFPA 984. NFPA 984 AND SHALL BE DYNAMICALLY RATED, TESTED AND LABELED TO CLASS AGAINST 4 INCHES W.G. AT AN ELEVATED TEMPERATURE OF 350F (177C), AT AN AIRFLOW OF 2,000 FT./MIN. (10 M/S) IN ACCORDANCE WITH UL 555S.
B. COMBINATION FIRE/SMOKE DAMPERS SHALL BE DYNAMICALLY RATED, TESTED AND LABELED AS 1-1/2 HOUR OR 3 HOUR IN ACCORDANCE WITH UL 555.

C. COMBINATION FIRE/SMOKE DAMPERS SHALL BE FURNISHED WITH ONE-TIME HEAT-RESPONSIVE LINKS RATED FOR A MINIMUM 165F (74C) AND MAXIMUM 350F (177C) AND SHALL MEET THE REQUIREMENTS OF, AND BE MANUFACTURED IN ACCORDANCE WITH, UL 33. DAMPER SHALL BE CAPABLE OF BEING REOPENED ONLY UP TO THE LINK DISCONNECT TEMPERATURE.
D. SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE SUITABLE FOR INSTALLATION IN BOTH VERTICAL AND HORIZONTAL MOUNTING CONFIGURATIONS.

E. SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE CONSTRUCTED WITH 5 INCH (127 MM) X 1 INCH (25 MM) WELDED FRAMES OF 16 GAUGE MINIMUM GALVANIZED STEEL, ROLL-FORMED INTO TRIPLE "U" CONFIGURATION, OR 2 INCH (50 MM) X 1 INCH (25 MM) X 1/8 INCH (3 MM) WELDED GALVANIZED STEEL CHANNEL FRAME. BLADES SHALL BE NOT LESS THAN 16 GAUGE GALVANIZED STEEL, FORMED WITH MULTIPLE LONGITUDINAL BREAKS AND INTERLOCKING V-GROOVE EDGES. MAXIMUM BLADE WIDTH, 8 INCHES (203 MM); MAXIMUM BLADE LENGTH, 48 INCHES (1,219 MM). BLADES SHALL PIVOT ON 1/2 INCH (13 MM) DIAMETER ZINC-PLATED STEEL AXLES THROUGH-BOLTED TO BLADE AND MOUNTED IN LOW-FRICTION BEARINGS. SMOKE DAMPERS SHALL BE PROVIDED WITH STAINLESS STEEL BEARINGS. DAMPER BLADE LINKAGES SHALL BE FACE-MOUNTED ON THE BLADES. DRIVE LINKAGE AND DAMPER OPERATORS SHALL BE LOCATED OUTSIDE OF THE DUCT. DAMPER OPERATOR DRIVE BRACKETS AND LINKAGE HARDWARE, INCLUDING BRACKETS, COUPLINGS, CONNECTING RODS, BOLTS AND SET SCREWS, SHALL BE ZINC- OR CADMIUM-PLATED STEEL OF SUFFICIENT SIZE AND STRENGTH TO OPERATE DAMPERS AGAINST THE MAXIMUM RATED STATIC PRESSURE. LINKAGE TRUNNIONS SHALL BE BRASS OR BRONZE. ALL DAMPER HARDWARE SHALL BE BOLTED IN PLACE. SPEED SCREWS SHALL NOT BE PERMITTED.

F. TOTAL BLADE HEIGHT SHALL NOT BE LESS THAN DUCT HEIGHT MINUS THE DAMPER FRAME WIDTH. BLANK-OFF PLATES SHALL NOT BE PERMITTED. BLADE STOPS SHALL NOT EXCEED 3/4 OF AN INCH (19 MM).
G. SMOKE DAMPERS SHALL HAVE CONTINUOUS STAINLESS STEEL SPRING JAMB SEALS INSTALLED THE FULL HEIGHT OF EACH VERTICAL FRAME MEMBER TO MAINTAIN TENSION ON THE THRUST BEARING SEALING THE BLADE ENDS AND AXLE.

H. COMBINATION FIRE/SMOKE DAMPERS SHALL BE SUPPLIED WITH MINIMUM 20 GAUGE STEEL SLEEVES OF THE APPROPRIATE LENGTH. SLEEVES FOR DAMPERS LESS THAN 16 INCHES (406 MM) IN HEIGHT SHALL BE 16 INCHES (406 MM) LONG. SLEEVES FOR DAMPERS LARGER THAN 16 INCHES (406 MM) IN HEIGHT SHALL BE 20 INCHES (508 MM) LONG.
I. COMBINATION FIRE/SMOKE DAMPERS SHALL BE SUPPLIED WITH FRAMED RETAINING ANGLES FOR PROPER INSTALLATION.

J. ACTUATORS SHALL BE FACTORY-INSTALLED BY THE ORIGINAL EQUIPMENT MANUFACTURER AND SHALL HAVE AN INTERNAL SPRING-RETURN MECHANISM. DAMPER AND ACTUATOR ASSEMBLY SHALL BE FACTORY-CYCLED NO LESS THAN THREE (3) TIMES TO ENSURE CORRECT OPERATION.

K. DAMPER OPERATORS: ALL DAMPER OPERATORS SHALL BE OF THE ELECTRICALLY ACTUATED SPRING-RETURN TYPE, AND SHALL BE FULLY PROPORTIONING, UNLESS OTHERWISE SPECIFIED. DAMPERS IN TWO-POSITION SERVICE (OPEN/CLOSE) SHALL BE PROVIDED WITH 120 VAC ACTUATORS, 50 VA MAXIMUM. DAMPERS IN MODULATING SERVICE SHALL BE PROVIDED WITH 24 VAC ACTUATORS UTILIZING 2 -10 VDC CONTROL SIGNAL. THEY SHALL BE QUIET IN OPERATION AND HAVE AMPLIE POWER TO OVERCOME FRICTION OF DAMPER LINKAGE AND AIR PRESSURE ACTING ON LOUVERS TO POSITION DAMPERS ACCURATELY AND SMOOTHLY FOR VELOCITIES UP TO 3,500 FPM. DAMPER OPERATOR MOUNTING ARRANGEMENT SHALL BE OUTSIDE THE AIR STREAM WHEREVER POSSIBLE. THE CONTROL MANUFACTURER SHALL PROVIDE A SUBSTANTIAL (STRONG) LINKAGE BETWEEN OPERATOR AND DAMPER. OPERATORS SHALL BE CAPABLE OF OPERATING AT VARYING RATES OF SPEED TO CORRESPOND TO THE DICATES OF THE CONTROLLERS AND VARIABLE LOAD REQUIREMENTS. THE OPERATOR SHALL BE CAPABLE OF OPERATING IN SEQUENCE WHEN REQUIRED BY THE SEQUENCE OF OPERATION. THE OPERATORS SHALL HAVE EXTERNAL ADJUSTABLE STOPS TO LIMIT THE STROKE IN EITHER DIRECTION. THE OPERATOR LINKAGE ARRANGEMENT SHALL BE SUCH AS TO PERMIT NORMALLY OPEN OR NORMALLY CLOSED POSITIONS OF THE DAMPERS AS REQUIRED.

L. AUTOMATIC CONTROL DAMPER LEAKAGE AND/OR SAMPLES WILL BE CERTIFIED BY TESTS PERFORMED IN ACCORDANCE WITH AMCA STANDARD 500 AT AN INDEPENDENT AMCA-APPROVED TESTING LABORATORY. TEST DATA, INCLUDING THE CLOSE-OFF TORQUE REQUIRED TO ACHIEVE THE SPECIFIED LEAKAGE RATES, SHALL BE INCLUDED WHEN SUBMITTED FOR APPROVAL. THE AIR LEAKAGE THROUGH A CLOSED DAMPER SHALL NOT EXCEED THE FOLLOWING VALUES:

Table with 3 columns: DAMPER DIMENSIONS (HEIGHT X WIDTH), DIFFERENTIAL S.P., INCHES W.G., TOTAL LEAKAGE CFM. Values: 48 inches (1,219 mm) x 48 inches (1,219 mm) inches, 4.0 (1 KPA), 160 (0.64 CU/M/S/50/M).

DAMPERS SHALL BE CONSTRUCTED WITH 5 INCH (127 MM) X 1 INCH (25 MM) WELDED FRAMES OF 16 GAUGE MINIMUM GALVANIZED STEEL, ROLL-FORMED INTO TRIPLE "U" CONFIGURATION, OR 2 INCH (50 MM) X 1 INCH (25 MM) X 1/8 INCH (3 MM) WELDED GALVANIZED STEEL CHANNEL FRAME. BLADES SHALL BE NOT LESS THAN 16 GAUGE GALVANIZED STEEL FORMED WITH MULTIPLE LONGITUDINAL BREAKS AND INTERLOCKING V-GROOVE EDGES. MAXIMUM BLADE WIDTH, 8 INCHES (203 MM); MAXIMUM BLADE LENGTH, 48 INCHES (1,219 MM). BLADES SHALL PIVOT ON 1/2 INCH (13 MM) DIAMETER ZINC-PLATED STEEL AXLES THROUGH-BOLTED TO BLADE AND MOUNTED IN LOW-FRICTION BEARINGS. DAMPER BLADE LINKAGES SHALL BE FACE-MOUNTED ON THE BLADES. DRIVE LINKAGE AND DAMPER OPERATORS SHALL BE LOCATED OUTSIDE OF THE DUCT. DAMPER OPERATOR DRIVE BRACKETS AND LINKAGE HARDWARE, INCLUDING BRACKETS, COUPLINGS, CONNECTING RODS, BOLTS AND SET SCREWS, SHALL BE ZINC- OR CADMIUM-PLATED STEEL OF SUFFICIENT SIZE AND STRENGTH TO OPERATE DAMPERS AGAINST THE MAXIMUM RATED STATIC PRESSURE. LINKAGE TRUNNIONS SHALL BE BRASS OR BRONZE. ALL DAMPER HARDWARE SHALL BE BOLTED IN PLACE. SPEED SCREWS SHALL NOT BE PERMITTED.

M. DAMPERS SHALL HAVE CONTINUOUS STAINLESS STEEL SPRING JAMB SEALS INSTALLED THE FULL HEIGHT OF EACH VERTICAL FRAME MEMBER TO MAINTAIN TENSION ON THE THRUST BEARING SEALING THE BLADE ENDS AND AXLE. DAMPER SHALL BE PROVIDED WITH FABRIC-REINFORCED OR W/ML NEOPRENE BLADE EDGE SEALS.

6. PIPING AND INSULATION

1. PIPE AND FITTING SCHEDULE:
A. GYCOY CHILLED WATER SUPPLY AND RETURN AND COOLING COIL CONDENSATE
- TYPE L HARD COPPER W/ WROUGHT COPPER - 95/5 SOLDERED FITTINGS.
2. INSULATION SCHEDULE:
A. GYCOY CHILLED WATER (1-1/4" AND UNDER)
- 1-1/2" FIBERGLASS (R=6.3)
B. GYCOY CHILLED WATER (1-1/2" AND LARGER)
- 1" FIBERGLASS (R=4.2)
C. GLASS-FIBER PIPE INSULATION: GLASS-FIBER PIPE INSULATION SHALL BE MOLDED ONE-PIECE INSULATION WITH WHITE KRAFT FIBERGLASS FIBER-FOR-LAMINATED, SELF-ADHESIVE ADHESIVE TAPE AND POLYURETHANE ADHESIVE (AS). PIPE INSULATION SHALL BE CAPABLE OF CONTINUOUS SERVICE AT A PIPE TEMPERATURE OF 450F WITHOUT OXIDATION OR BURNOFF OF BINDERS OR THE DEVELOPMENT OF DOORS OR SMOKE BY ANY MEANS. PHYSICAL CHARACTERISTICS SHALL BE AS FOLLOWS:
- MINIMUM DENSITY: 4 LBS./CU.FT.
- THERMAL CONDUCTIVITY: 0.23 BTU-IN./HR./SQ.FT./F.
- MAXIMUM SERVICE TEMPERATURE: 350F.

- * JACKET VAPOR PERMEABILITY: 0.02 PERMS.

- D. WHEN SUPPLY DUCTWORK IS EXPOSED AND LOCATED WITHIN THE SPACE IT IS SERVING, INSULATION IS NOT REQUIRED.

A. DURING CONSTRUCTION, PROPERLY PROTECT ALL OPEN ENDS OF PIPING AND DUCTWORK TO PREVENT THE ENTRANCE OF SAND, DIRT AND OTHER FOREIGN MATTER IN ACCORDANCE WITH SMACNA STANDARDS.

B. ALL AC UNITS, FANS, REGISTERS AND DIFFUSERS ARE TO BE BALANCED WITHIN PLUS 10%, MINUS 5% OF THE QUANTITIES SHOWN ON THE PLANS. BALANCING IS TO BE PERFORMED BY AN INDEPENDENT BALANCING AGENCY IN ACCORDANCE WITH A.S.C. OR N.A.A.E. NATIONAL STANDARDS.

8. INSTALLATION

- 1. ALL DUCTWORK AND PIPING SHALL BE PROVIDED WITH PERMANENT PHENOLIC LABELS WITH 1/2" HIGH LABELS AT 5'-0" INTERVALS.

9. APPROVED MANUFACTURERS

- A. GRILLES: ANEMOSTAT/TITUS
B. FANS: GREENHECK
C. FAN COIL UNITS: IEC
D. COMBINATION FIRE/SMOKE DAMPERS AND AUTOMATIC CONTROL DAMPERS: IMPERIAL/POTTORFF/RUSKIN

10. CONTROLS

A. ALL CONTROL DEVICES, DDC CONTROLLERS, TEMPERATURE SENSORS, CONTROL VALVES, ACTUATORS, SOFTWARE PROGRAMMING, GRAPHICS, POWER AND CONTROL WIRING, AND CONDUIT WIRING SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING:
1. AUTOMATIC CONTROL VALVES SHALL BE SINGLE-SEATED GLOBE VALVES AND SHALL HAVE EQUAL PERCENTAGE FLOW CHARACTERISTICS UNLESS SPECIFIED OTHERWISE. CONTROL VALVES 2 INCHES AND SMALLER SHALL HAVE BRONZE BODIES AND STAINLESS STEEL TRIM AND STEM. END CONNECTIONS SHALL BE THREADED. CONTROL VALVES 2-1/2 IN. AND LARGER IN A SERVICE WHERE PRESSURE DOES NOT EXCEED 125 PSIG AT 350F, SHALL HAVE 125 POUND CAST IRON BODIES. TRIM AND STEM SHALL BE STAINLESS STEEL. END CONNECTIONS SHALL BE FLANGED. VALVES 2-1/2 IN. AND LARGER IN A SERVICE WHERE PRESSURE DOES NOT EXCEED 200 PSIG AT 350F SHALL HAVE 125 POUND CAST IRON BODIES. TRIM AND STEM SHALL BE STAINLESS STEEL. END CONNECTIONS SHALL BE FLANGED. VALVES SHALL HAVE SUFFICIENT STUFFING BOX PROTECTION TO ENSURE AGAINST LEAKAGE AT HYDROSTATIC HEAD INVOLVED.

2) SINGLE-SEATED VALVES SHALL MEET ANSI CLASS IV LEAKAGE (0.01% OF CV).
3) THE VALVES SHALL BE QUIET IN OPERATION AND FAIL-SAFE IN EITHER NORMALLY OPEN OR NORMALLY CLOSED POSITION IN THE EVENT OF POWER FAILURE. ALL VALVES SHALL BE NORMALLY CAPABLE OF OPERATING AT VARYING RATES OF SPEED TO CORRESPOND TO THE EXACT DICATES OF THE CONTROLLERS AND VARIABLE LOAD REQUIREMENTS. THE VALVES SHALL BE CAPABLE OF OPERATING IN SEQUENCE WITH OTHER VALVES AND/OR DAMPERS WHEN REQUIRED BY THE SEQUENCE OF OPERATION. ALL CONTROL VALVES SHALL BE SIZED BY THE CONTROL MANUFACTURER AND SHALL BE GUARANTEED TO MEET THE HEATING AND COOLING LOAD REQUIREMENTS. ALL CONTROL VALVES SHALL BE SUITABLE FOR THE PRESSURE CONDITIONS AND SHALL CLOSE AGAINST THE DIFFERENTIAL. ALL VALVE OPERATORS SHALL BE SPRING-RETURN ELECTRICALLY ACTUATED TYPE. BODY PRESSURE RATING AND CONNECTION TYPE CONSTRUCTION SHALL CONFORM TO FITTING SCHEDULES, AS PER THE HEATING, VENTILATING AND AIR CONDITIONING SECTION OF THE SPECIFICATIONS.

4) CHILLED WATER CONTROL VALVES SHALL HAVE EQUAL PERCENTAGE FLOW CHARACTERISTICS.
5) CONTROL VALVE SHALL BE PROVIDED WITH A TRAVEL INDICATOR (POINTER) ATTACHED TO THE STEM AND A TRAVEL INDICATOR SCALE ATTACHED TO THE YOKE TO INDICATE VALVE TRAVEL.
6) CHILLED WATER VALVES SHALL BE NORMALLY CLOSED TYPE. VALVES SHALL BE MANUFACTURED BY BELIMO, JOHNSON CONTROLS INC., HONEYWELL, SIEMENS OR AS APPROVED.

D. AUTOMATIC CONTROL AND AUTOMATIC SMOKE DAMPERS
1) LOW LEAKAGE AUTOMATIC CONTROL DAMPERS, AUTOMATIC SMOKE DAMPERS AND/OR COMBINATION SMOKE/FIRE DAMPERS SHALL BE FURNISHED BY OTHERS. THIS SECTION SHALL BE RESPONSIBLE FOR PROVIDING ACTUATORS FOR ANY AUTOMATIC CONTROL DAMPERS. ALL ELECTRICAL WIRING (POWER AND CONTROL), IF REQUIRED, FOR THE COMBINATION SMOKE/FIRE DAMPERS, E/PS AND ELECTRONIC FUSIBLE LINKS, IS TO BE FURNISHED AND INSTALLED BY THE SECTION.
2) DAMPERS WHICH REQUIRE OPPOSED BLADE ACTION
a. DAMPERS UNDER MODULATING CONTROL SUCH AS OUTDOOR AIR, RETURN AIR AND SPILL AIR DAMPERS IN AIR CONDITIONING SYSTEMS AND AIR INTAKE, REGRULATION AIR, AND EXHAUST AIR DAMPERS IN VENTILATION SYSTEMS.
3) DAMPERS WHICH REQUIRE PARALLEL BLADE ACTION
a. DAMPER OPERATORS: ALL AUTOMATIC LOWERED DAMPER OPERATORS IN TWO-POSITION (OPEN/CLOSED) SERVICE SHALL BE 120 VAC ELECTRICALLY ACTUATED SPRING-RETURN TYPE. SPRING-RETURN RUNNING TIME SHALL NOT EXCEED 20 SECONDS. ALL AUTOMATIC LOWERED DAMPER OPERATORS IN MODULATING SERVICE SHALL BE 24 VDC OR 120 VAC ELECTRICALLY ACTUATED SPRING-RETURN TYPE, AND SHALL BE FULLY PROPORTIONING, UNLESS OTHERWISE SPECIFIED. SPRING-RETURN RUNNING TIME SHALL NOT EXCEED 20 SECONDS. SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPER OPERATORS SHALL BE PROVIDED WITH 120 VAC ACTUATORS. AUTOMATIC LOWERED DAMPER OPERATORS SHALL BE PROVIDED WITH MANUAL OVERRIDE AND EXTERNAL DIRECTION OF ROTATION SWITCH.THEY SHALL BE QUIET IN OPERATION AND HAVE AMPLE POWER (TORQUE) TO OVERCOME FRICTION OF DAMPER LINKAGE AND AIR PRESSURE ACTING ON LOUVERS TO POSITION DAMPERS ACCURATELY FOR VELOCITIES UP TO 4,000 FPM. OPERATORS SHALL BE CAPABLE OF OPERATING AT VARYING RATES OF SPEED TO CORRESPOND TO THE DICATES OF THE CONTROLLERS AND VARIABLE LOAD REQUIREMENTS. THE OPERATORS SHALL BE CAPABLE OF OPERATING IN SEQUENCE WHEN REQUIRED BY THE SEQUENCE OF OPERATION. THE OPERATORS SHALL HAVE EXTERNAL ADJUSTABLE STOPS TO LIMIT THE STROKE IN EITHER DIRECTION. THE OPERATOR LINKAGE ARRANGEMENT SHALL BE SUCH AS TO PERMIT NORMALLY OPEN OR NORMALLY CLOSED POSITIONS OF THE DAMPERS AS REQUIRED.

5) A SUFFICIENT NUMBER OF DAMPER OPERATORS SHALL BE INSTALLED TO OPERATE SINGLE AND MULTIPLE DAMPER SECTIONS SMOOTHLY AND IN UNISON AT THE MAXIMUM RATED STATIC PRESSURE AND AIR VELOCITY, AND TO PROVIDE THE CLOSE-OFF TORQUE REQUIRED TO MEET DAMPER LEAKAGE CRITERIA. PROVIDE AUXILIARY DRIVE SHAFTS WITH PILLOW BLOCK BEARINGS AND BEARING SUPPORT BRACKETS RIGIDLY ATTACHED TO THE DAMPER FRAME ASSEMBLY ON DAMPER BANKS MORE THAN ONE DAMPER SECTION WIDE.

6) DAMPER ACTUATORS SHALL BE MANUFACTURED BY BELIMO, JOHNSON CONTROLS, SIEMENS AND HONEYWELL.

E. DESCRIPTION OF OPERATION:
1) FAN COIL UNIT (TYPICAL OF EACH):
a. PACKAGED FAN COIL UNIT SHALL BE A FLOOR MOUNTED CHILLED WATER COIL AND ELECTRIC HEAT UNIT WITH FACTORY CONTROLLED MICROPROCESSOR CONTROLLER. A WALL-MOUNTED CONTROLLER, FURNISHED WITH THE UNIT, WILL BE INSTALLED AND WIRED BY THIS SECTION. THIS CONTRACTOR SHALL PROVIDE THE CHILLED WATER VALVE.

b. THE UNIT WILL BE STARTED LOCALLY AND SHALL RUN CONTINUOUSLY. WHEN THE UNIT IS IN OPERATION, ITS FACTORY INSTALLED CONTROLLER SHALL CYCLE THE CHILLED WATER VALVE AND ELECTRIC HEATING COIL TO MAINTAIN SPACE TEMPERATURE SETPOINT.
c. A SPACE TEMPERATURE SENSOR WILL BE FURNISHED AND INSTALLED BY THIS SECTION IN THE ROOM SERVED BY THE UNIT. THE SENSOR WILL BE MONITORED FOR EXISTING BMS AND WILL ANNUNCIATE A HIGH AND LOW TEMPERATURE ALARM AT THE OPERATOR WORKSTATION SENSING A TEMPERATURE ABOVE OR BELOW SET POINT (ADJUSTABLE).

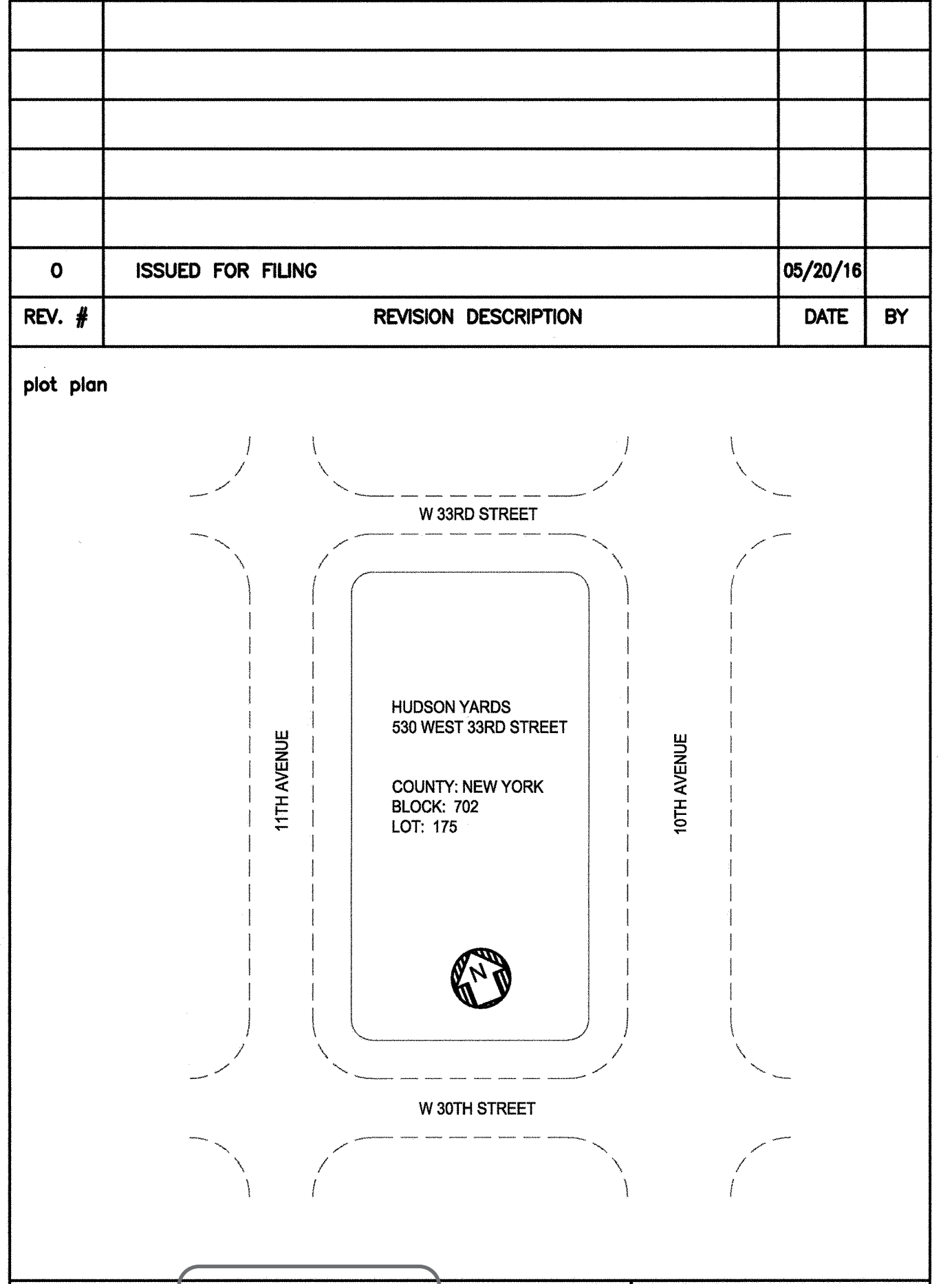
d. A SPOT LEAK DETECTOR FURNISHED BY THE UNIT MANUFACTURER WILL BE INSTALLED AND WIRED TO EACH AIR CONDITIONING UNIT FOR LEAK ALARM MONITORING. SPOT LEAK DETECTOR AND THE CONDENSATE PUMP HIGH-LEVEL SWITCH WILL BE WIRED TO THE DDC SYSTEM TO ACTIVATE A REMOTE COMBINATION LEAK / CONDENSATE PUMP HIGH-LEVEL SWITCH ALARM AT THE WORKSTATION.

2) EXHAUST FAN (TYPICAL OF EACH):
a. WHEN THE FAN IS OFF, THE INTAKE AND EXHAUST DAMPERS SHALL BE CLOSED.
b. WHEN THE FAN STARTS, A HARDWIRED TIME DELAY SHALL PREVENT THE FAN FROM STARTING UNTIL ITS INTAKE AND DISCHARGE DAMPERS ARE FULLY OPEN. DAMPERS SHALL BE HARDWIRED INTERLOCKED WITH FAN OPERATION. WHEN THE DAMPERS ARE FULLY OPEN, THE FAN SHALL START.
c. EACH FAN SHALL BE STARTED BY THE OPERATOR AT THE WORKSTATION AND RUN CONTINUOUSLY.
d. FAN RUN STATUS SHALL BE MONITORED AT THE DDC SYSTEM VIA A CURRENT-SENSING RELAY FURNISHED, INSTALLED AND WIRED BY THIS SECTION.
e. HIGH-DISCHARGE PRESSURE SWITCHES AND LOW-SUCTION PRESSURE SWITCHES: PRESSURE DIFFERENTIAL SWITCHES INSTALLED IN THE DISCHARGE OF THE EXHAUST FAN SHALL SENSE DISCHARGE PRESSURE AND STOP THE FAN FROM THE OPERATOR WORKSTATION BY MEANS OF A DIGITAL INPUT TO A SYSTEM DDC CONTROLLER. IF THE PRESSURE SET POINT OF THE SWITCH IS EXCEEDED, A SEPARATE PRESSURE SWITCH, INSTALLED IN THE INLET OF THE EXHAUST FAN, SHALL ALSO STOP THE FAN AND TRIP THE ALARM IF FAN SUCTION PRESSURE IS BELOW ITS SET POINT. THE FAN SHUTDOWN SHALL BE OPERATIVE WHETHER THE STARTER I/O-A SWITCH IS IN THE "AUTO" OR "HAND" POSITION. PRESSURE SWITCHES SHALL BE MANUALLY RESET TYPE.

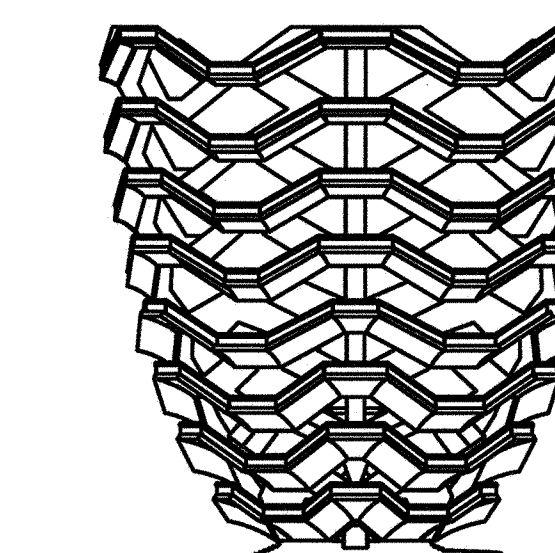
F. THE FOLLOWING POINTS SHALL BE MONITORED AND/OR CONTROLLED VIA THE DDC SYSTEM:
1) FAN COIL UNIT (TYPICAL OF EACH)
a. FAN STATUS (VIA CURRENT SENSING RELAY)
b. SPACE TEMPERATURE
c. LEAK / CONDENSATE PUMP HIGH LEVEL SWITCH ALARM

2) EXHAUST FAN (TYPICAL OF EACH):
a. START/STOP.
b. STATUS (VIA CURRENT-SENSING RELAY).
c. HIGH DISCHARGE PRESSURE SWITCH.
d. LOW SUCTION PRESSURE SWITCH.

G. FURNISH OPERATION AND MAINTENANCE MANUALS FOR ALL MECHANICAL EQUIPMENT TO THE OWNER PER CODE REQUIREMENTS.



HUDSON YARDS VESSEL
Damian Titus
SPECIFICATIONS SHEET
PROJECT NO. W-002.00
REV 0
DATE 5/06/16
14986



RELATED COMPANIES

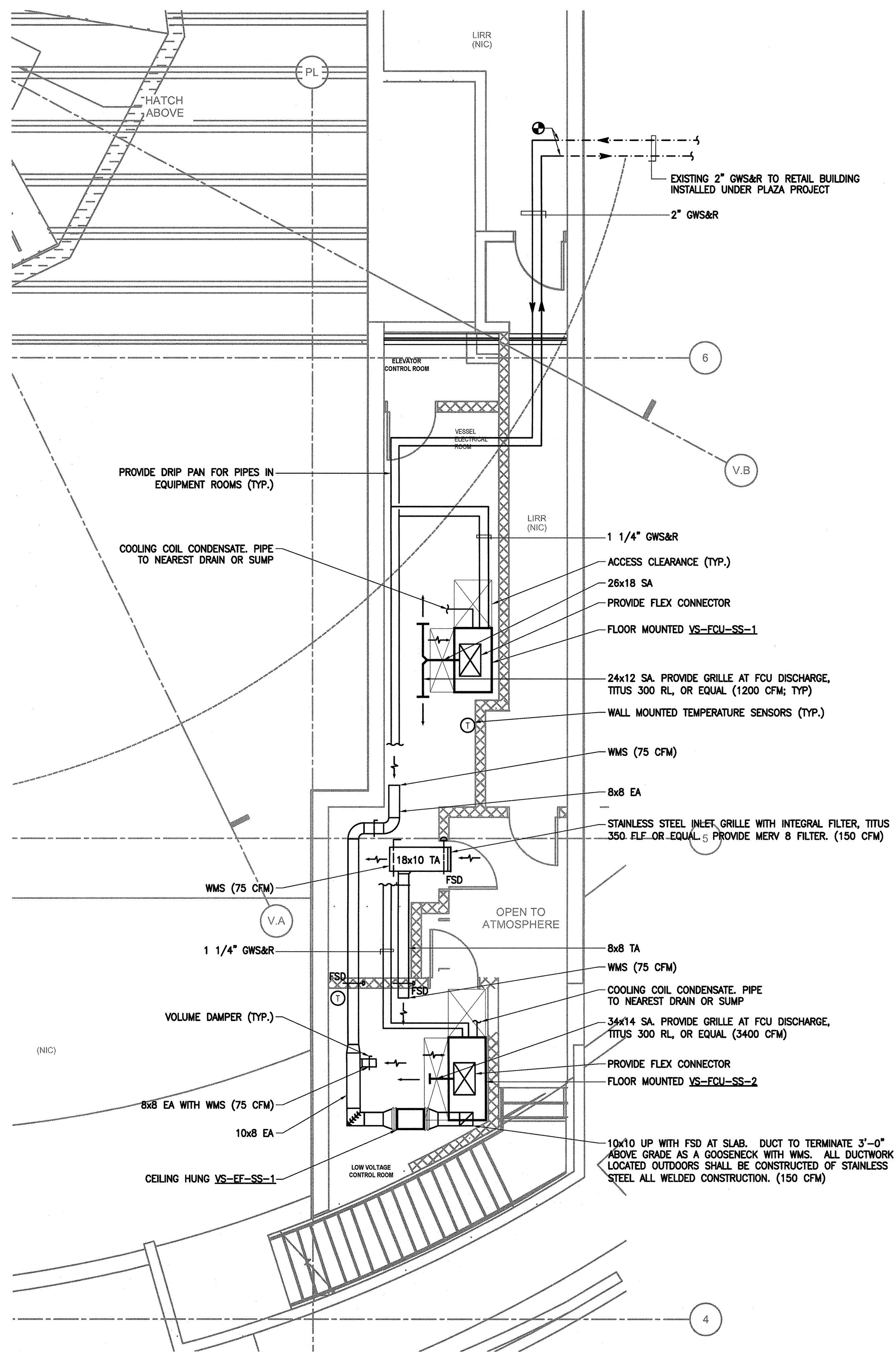
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-501-1000



PACE PLUMBING CORP.

41 BOX STREET BROOKLYN, NEW YORK 11222
TEL: 718-389-6100

HAROLD BLOCK
MASTER PLUMBER LIC # 0195



1 MECHANICAL MER PART PLAN
1/4" = 1'-0"

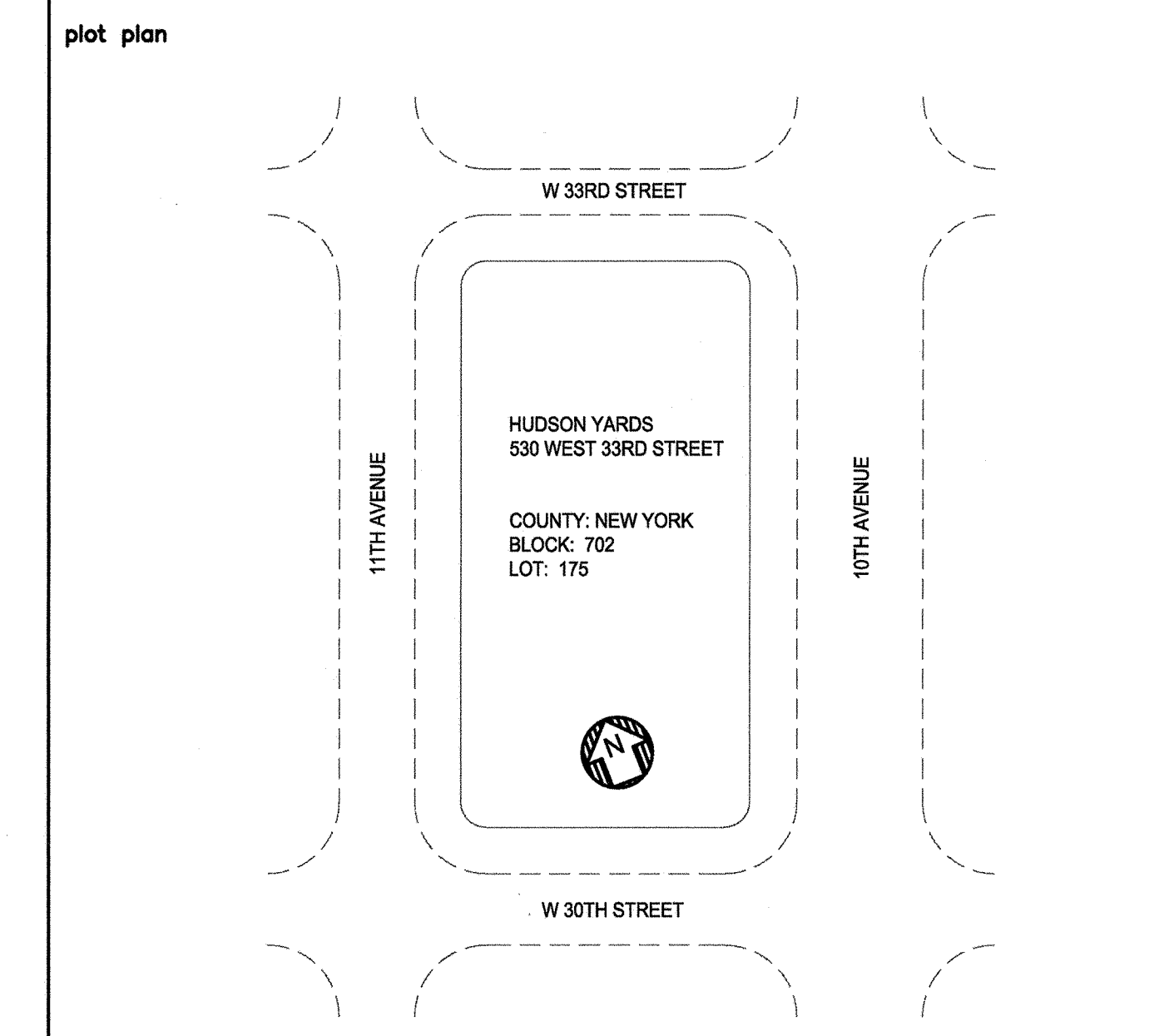
EXHAUST FANS (COOK AS STANDARD)														
TAG	LOCATION	SERVICE	CAPACITY (CFM)	AIR PRESSURE (IN. WC)	AIR FILTER	AIR VELOCITY (FPM)	ARRANGEMENT AND DISCHARGE DIRECTION	FAN R.P.M.	FAN ROTATION	WHEEL DIAMETER (INCHES)	UNIT			REMARKS
											TYPE	MODEL	SIZE	
VS-EF-SS-1	SUB SURFACE LEVEL LOW VOLTAGE CONTROL ROOM	VESSEL SUPPORT MER EXHAUST	150	1.0	-	-	ALTERNATE INLINE	1450	-	-	CABINET	GEMINI	GC-180	

NOTES
1. PROVIDE NEOPRENE IN SHEAR VIBRATION ISOLATORS
2. PROVIDE MOTOR STARTER

FAN COIL UNITS (INTERNATIONAL AS STANDARD)																						
TAG	LOCATION	SERVICE	AIR CAPACITY (CFM MED. SPEED)	EXTERNAL S.P. (IN.)	SENS. COOLING CAPACITY (BTU/HR)	TOTAL COOLING CAPACITY (BTU/HR)	COOLING AT MEDIUM SPEED						HEATING	MOTOR	MODEL No.	REMARKS						
							ENTERING TEMP. (°F)	LEAVING WATER TEMP. (°F)	COOLING WATER CAPACITY (GPM)	MAXIMUM WATER PRESS. DROP (FT. H2O)	No. OF ROWS	WORKING PRESSURE (PSI)					TYPE	CAPACITY (KW)	MOTOR R.P.M.	MOTOR HP	AMPS (FLA)	VOLTS/PHASE/FREQ.
VS-FCU-SS-1	VESSEL ELECTRICAL ROOM	VESSEL ELECTRICAL ROOM HEATING AND COOLING	2400	0.75	55,600	64,000	80	67	45	61	8	2.2	8	-	ELEC	10	-	1	1.9	460/3/60	VBA30	
VS-FCU-SS-2	VESSEL LOW VOLTAGE CONTROL ROOM	VESSEL LOW VOLTAGE CONTROL ROOM HEATING AND COOLING	3400	0.75	78,600	90,300	80	67	45	61	11.3	5.8	8	-	ELEC	10	-	1.5	2.8	460/3/60	VBA30	

NOTES
1. PROVIDE MERV 8 FILTERS
2. PROVIDE THERMOSTAT AND INTEGRAL CONTROLLER
3. WATER TO BE 45% PROPYLENE GLYCOL BY VOLUME
4. PROVIDE CONDENSATE PUMP
5. PROVIDE VIBRATION ISOLATORS

REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	



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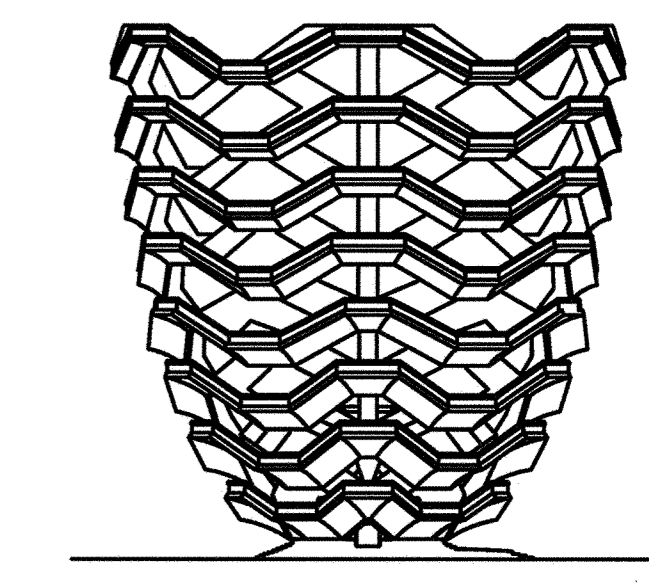
HUDSON YARDS VESSEL
MECHANICAL SYSTEM SCHEMATIC, SCHEDULES, EQUIPMENT ROOM PLAN

drawn by: icole
date: 5/06/16

check by: JBB
project no.: 14986
rev: 0

003.00

13 OF 4



RELATED COMPANIES

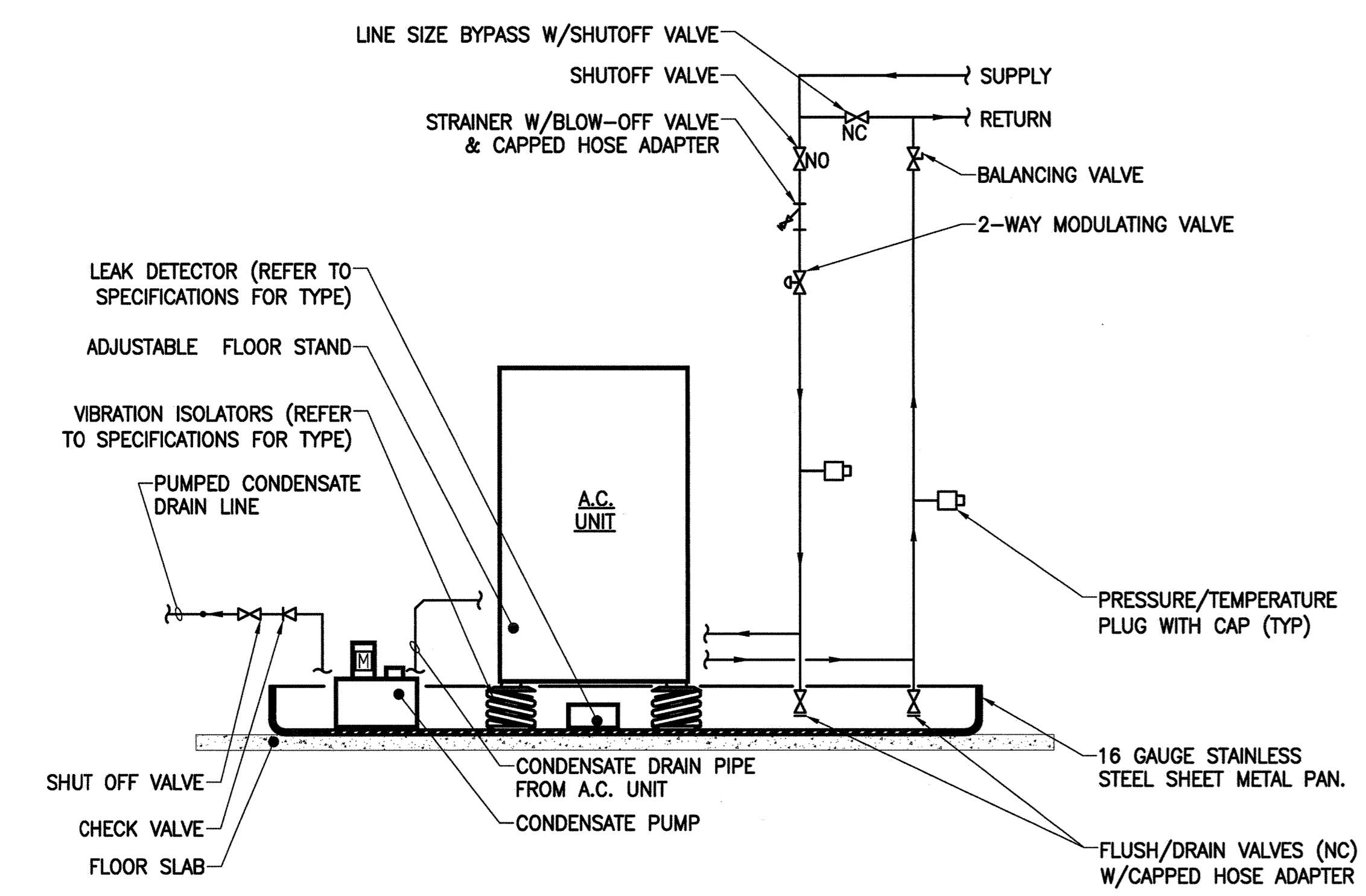
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-501-1000



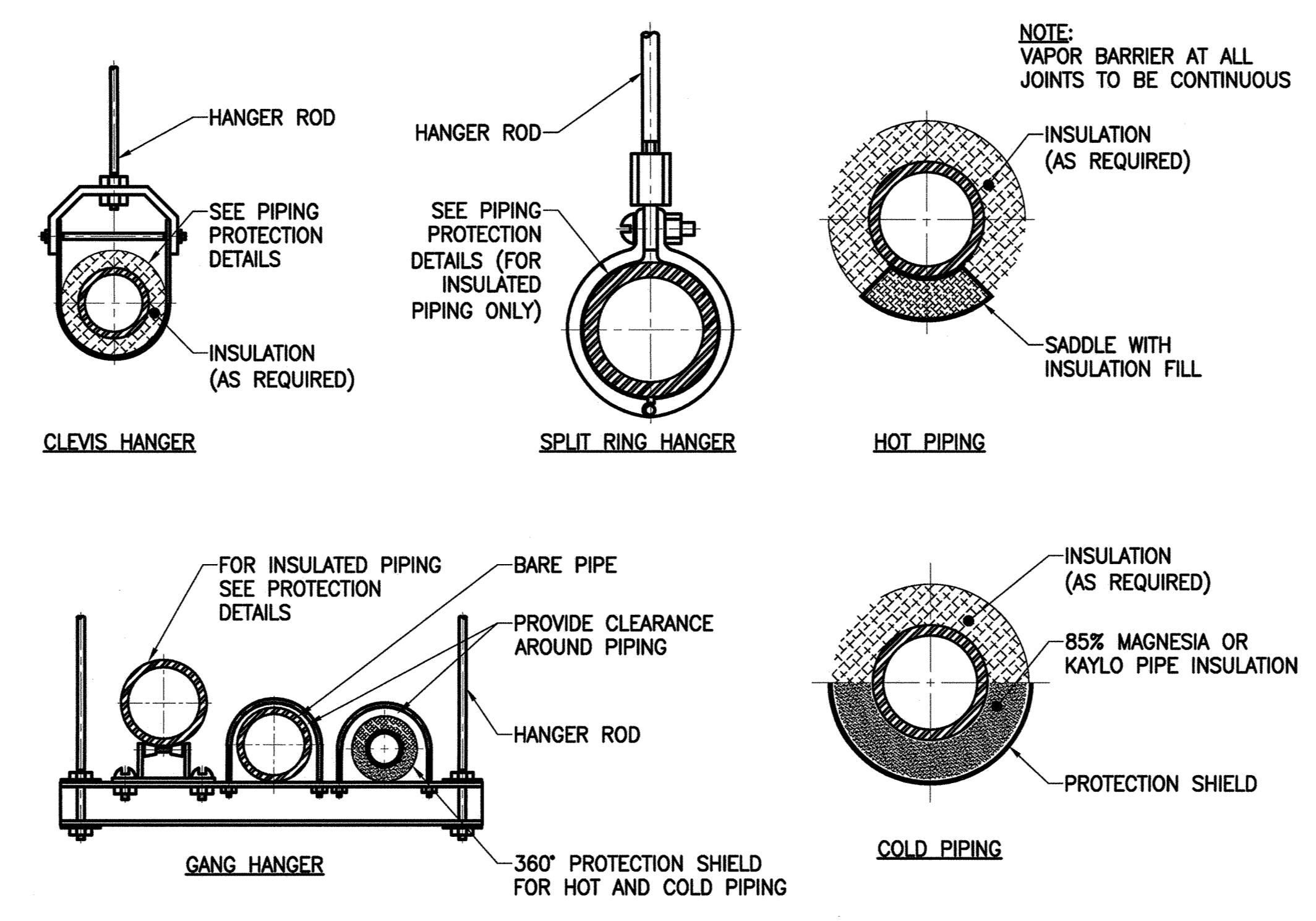
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PACE PLUMBING CORP.

41 BOX STREET BROOKLYN, NEW YORK 11222 HAROLD BLOCK MASTER PLUMBER LIC # 0195
TEL: 718-389-6100



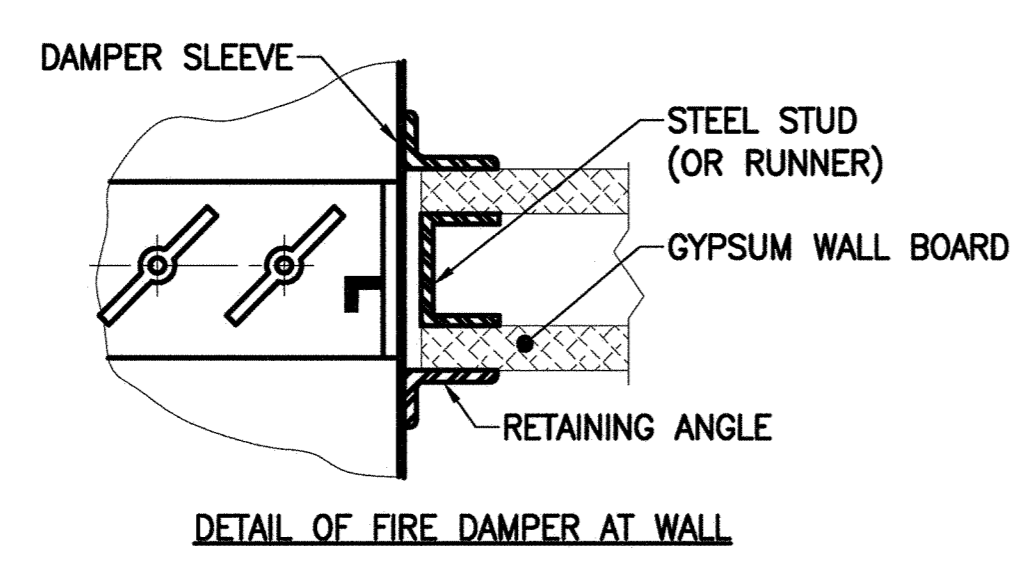
FLOOR MOUNTED A.C. UNIT, OVERHEAD WATER PIPING CONNECTION DETAIL



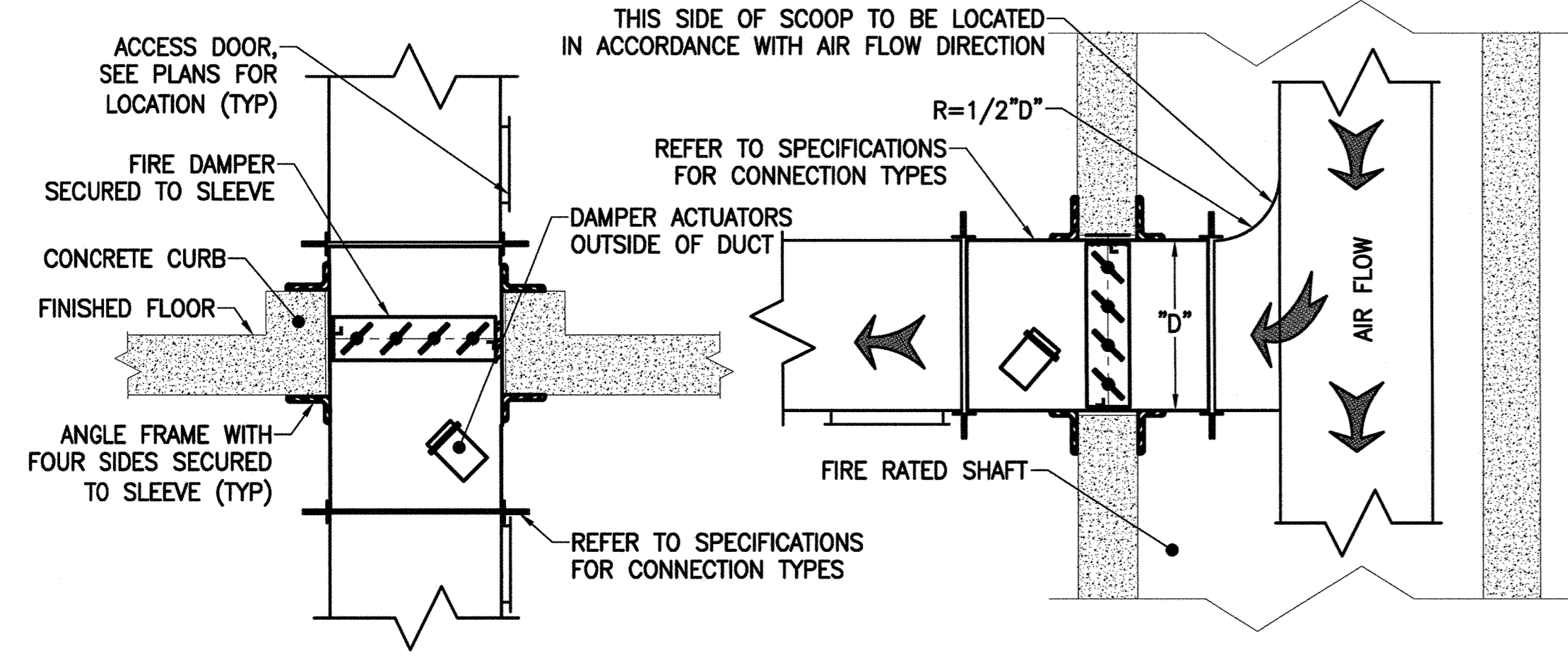
PIPING SUPPORT AND INSULATION DETAILS

FIRE DAMPER NOTES:

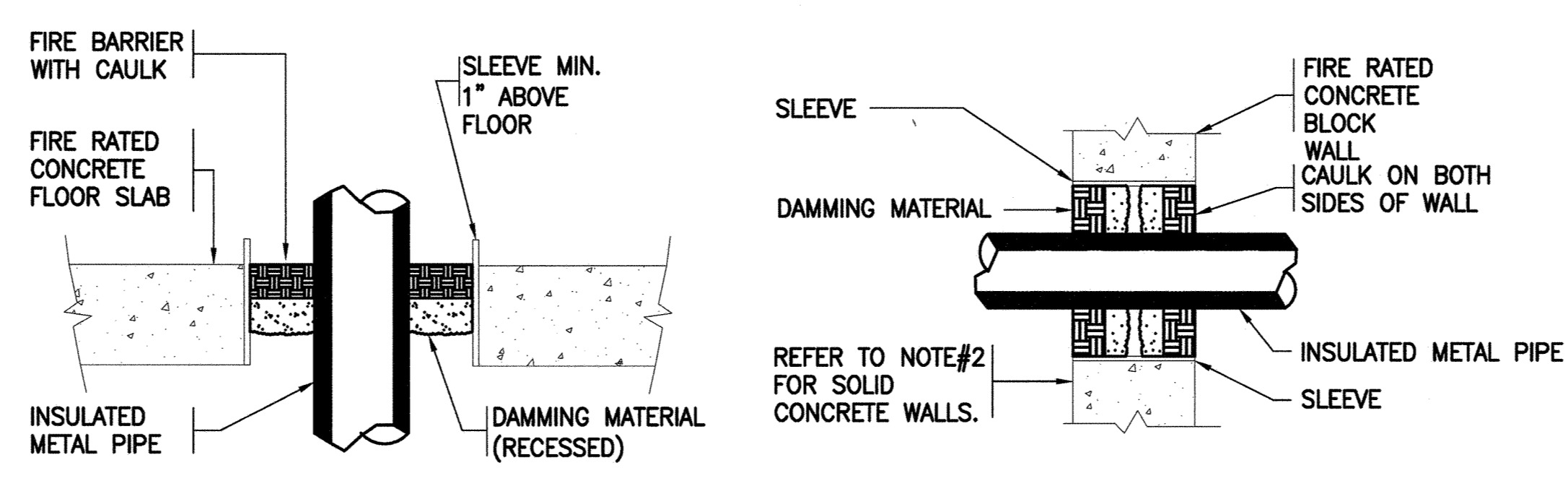
1. DRY WALL FRAMING AT FIRE DAMPERS MUST BE IN ACCORDANCE WITH WALL SYSTEM MANUFACTURER'S UL APPROVED DETAILS.
2. SHEET METAL SLEEVES TO BE 16 GA FOR DAMPERS NOT EXCEEDING 24" HIGH OR 36" WIDE. 14 GA FOR LARGER SIZE DAMPERS.
3. FIRE DAMPERS ARE TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PER UL 5550.
4. SEE ARCH'L DWGS FOR STUD LOCATION AT DAMPERS.



DETAIL OF FIRE DAMPER AT WALL



HORIZONTAL AND VERTICAL FIRE OR FIRE SMOKE DAMPERS INSTALLATION DETAIL

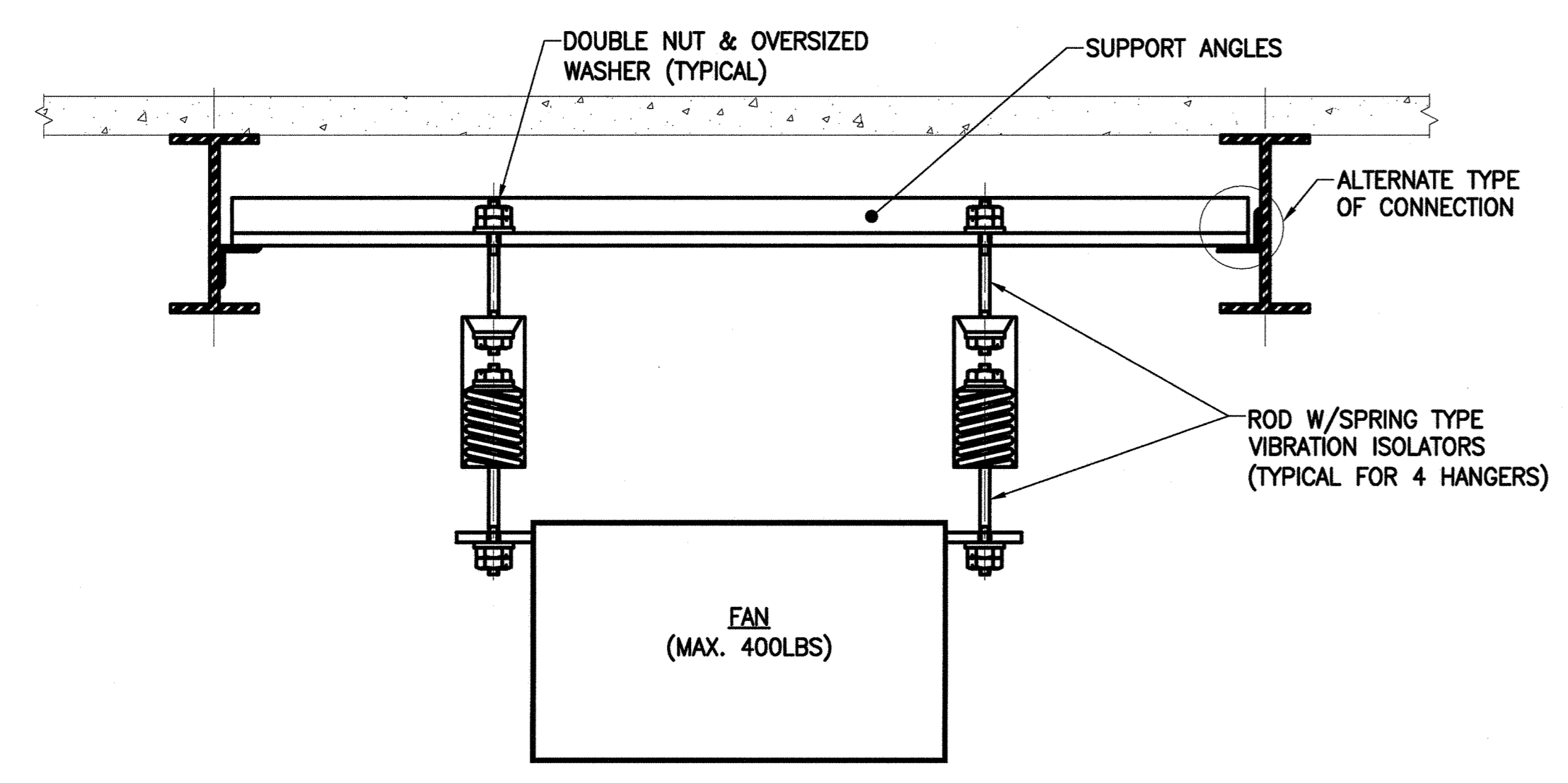


CONCRETE FLOOR SECTION VIEW CONCRETE WALL SECTION VIEW

NOTES:

1. THE MAXIMUM ANNULAR SPACE TO BE FILLED IS 2", THE MINIMUM ANNULAR SPACE IS 3/4". THE MAXIMUM PIPE SIZE IS A NOMINAL 4" DIAMETER.
2. FOR SOLID CONCRETE WALLS, THE CAULK MAY BE CENTERED IN THE WALL WITH DAMMING MATERIAL ON BOTH SIDES OF THE CAULK.
3. PENETRATIONS SHALL BE CAULKED ON BOTH SIDES. SELF LEVELING CAULK SHALL BE USED ON ALL HORIZONTAL SURFACES.
4. THE DEPTH OF THE CAULK SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE:
INSULATION
CAULK DEPTH (MIN.)
1" THICK 1"
2" THICK 2"
5. INSTALLATION MUST CONFORM WITH PRODUCT MANUFACTURERS PERFORMANCE RATINGS PER ASTM E-814 (UL 1479) FIRE TEST AND UL RESPECTIVE CLASSIFICATION FOR FIRE STOPPING.
6. IN ADDITION TO THE REQUIREMENTS OF THE APPROVED UL LISTED FIRE STOPPING ASSEMBLIES, ESCUTCHEON PLATES SHALL BE INSTALLED ON EACH SIDE OF THE FIRE RATED WALL AND SLAB CONSTRUCTION IN ACCORDANCE WITH ARTICLE 15005-1.25 OF THE SPECIFICATIONS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

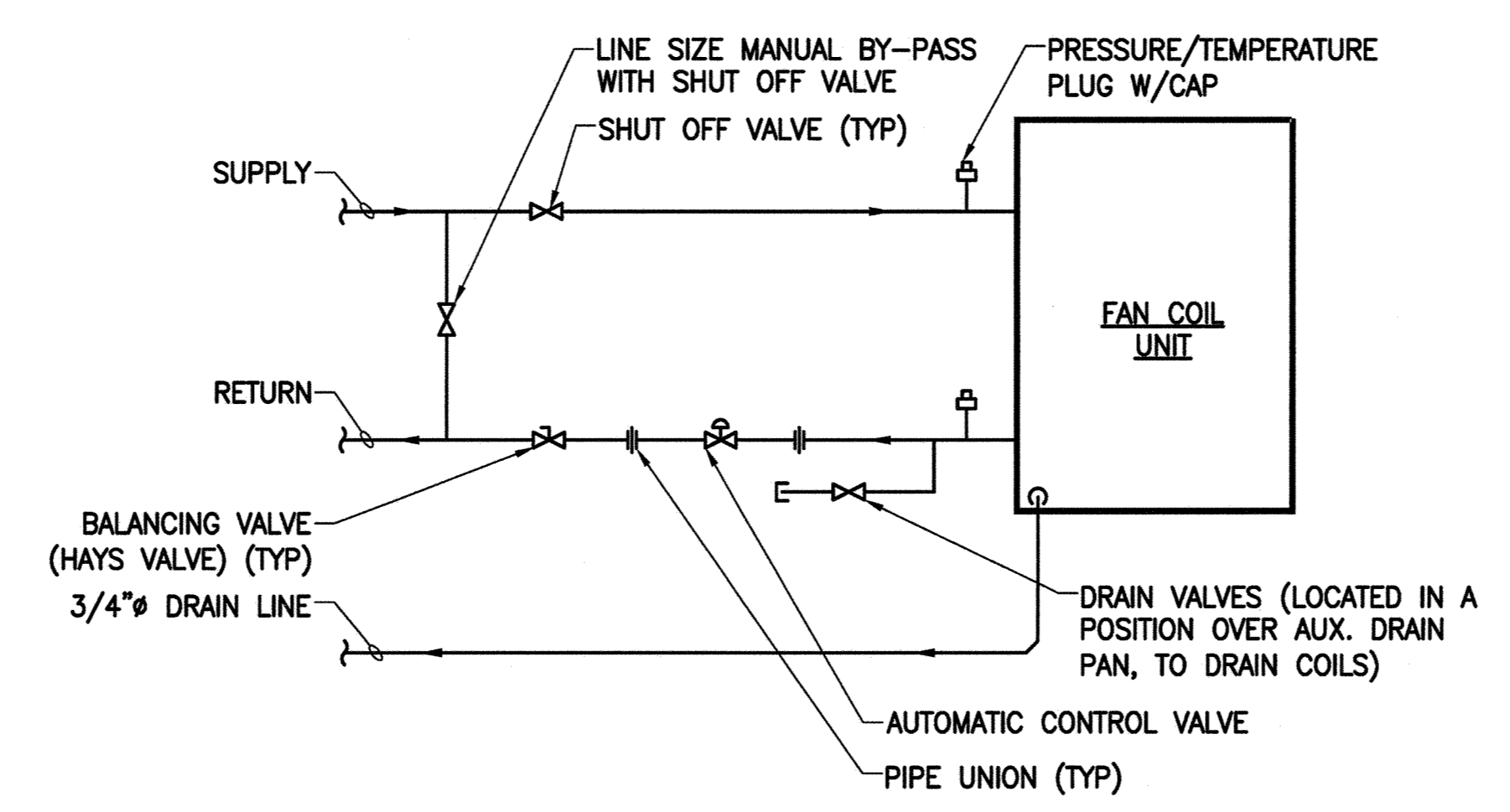
PENETRATION FIRESTOP FOR INSULATED METAL PIPE THROUGH A CONCRETE FLOOR OR WALL



NOTES:

1. AFTER ALL STEEL IS IN PLACE AND ALL WELDING IS COMPLETED, RESTORE ALL FIREPROOFING THAT WAS REMOVED OR DAMAGED DURING CONSTRUCTION.
2. CONTRACTOR TO SUBMIT UNIT SUPPORT DETAIL FOR APPROVAL BY STRUCTURAL ENGINEER.

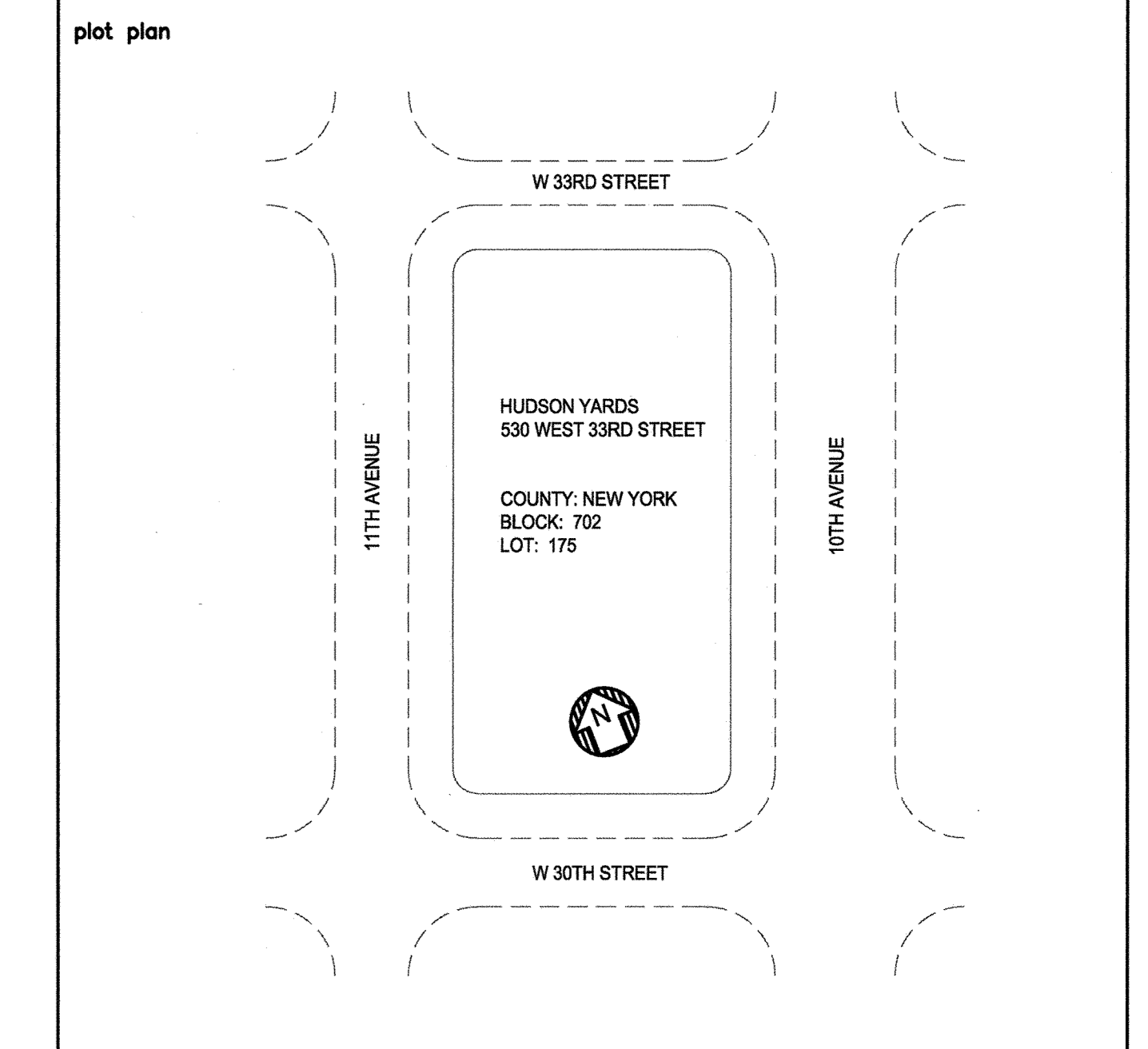
FAN SUPPORT DETAIL



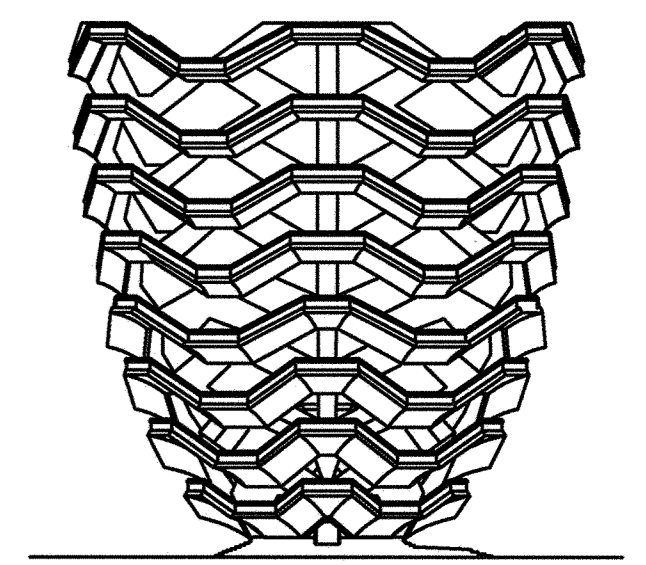
TYPICAL TWO PIPE FAN COIL UNIT PIPING CONNECTION DETAIL

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0	ISSUED FOR FILING		05/20/16	



HUDSON YARDS VESSEL
MECHANICAL DETAILS SHEET
drawn by MG
date 5/06/16
scale
project no. 14986
check by
DATE
M-004.00
14 OF 4



RELATED COMPANIES

60 COLUMBUS CIRCLE NEW YORK, NEW YORK 10023 TEL: 212-801-1000



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PACE PLUMBING CORP.

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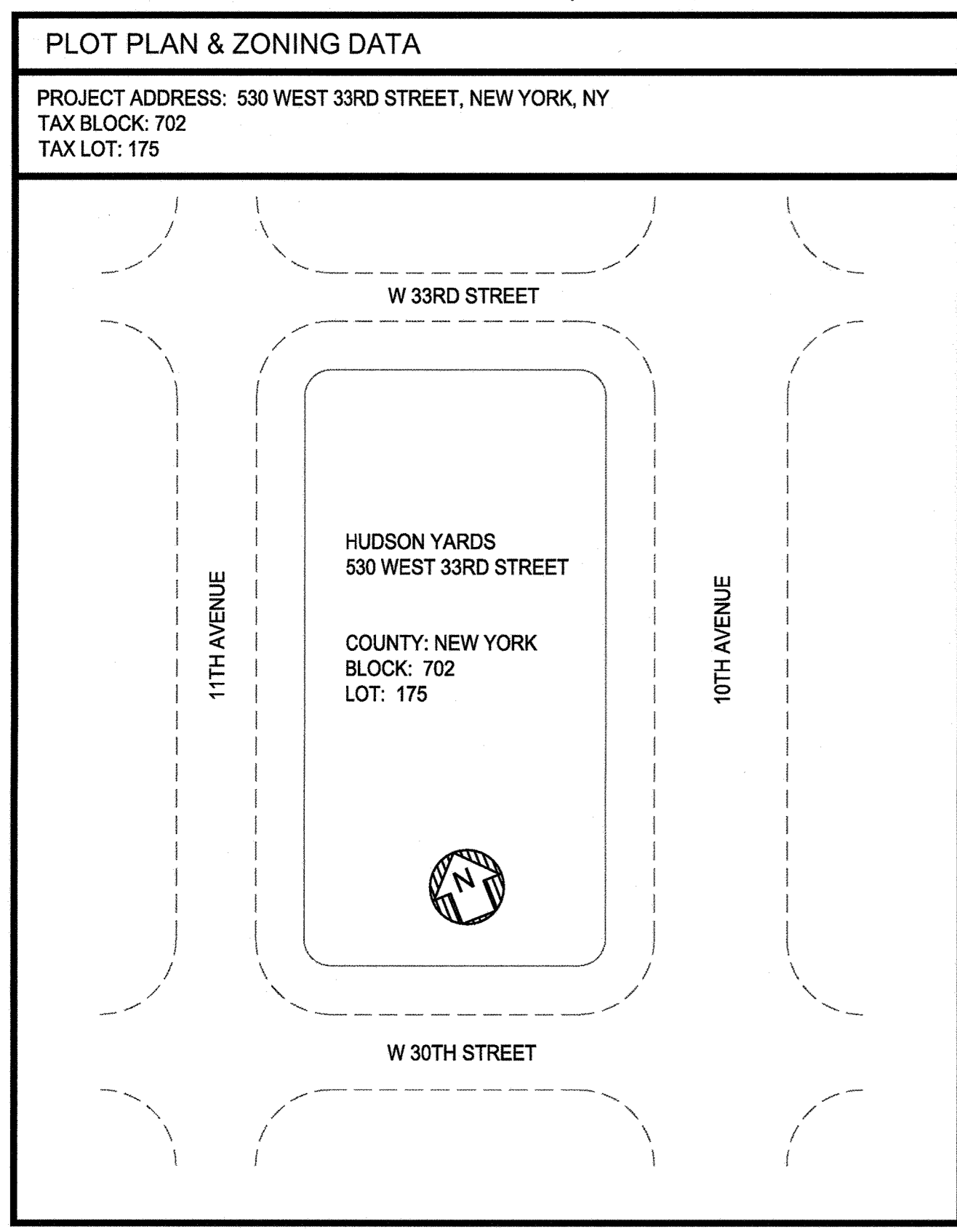
ABBREVIATION SCHEDULE table listing abbreviations for plumbing components and materials.

SYMBOLS SCHEDULE table listing symbols for primary and secondary systems piping, valves, and equipment.

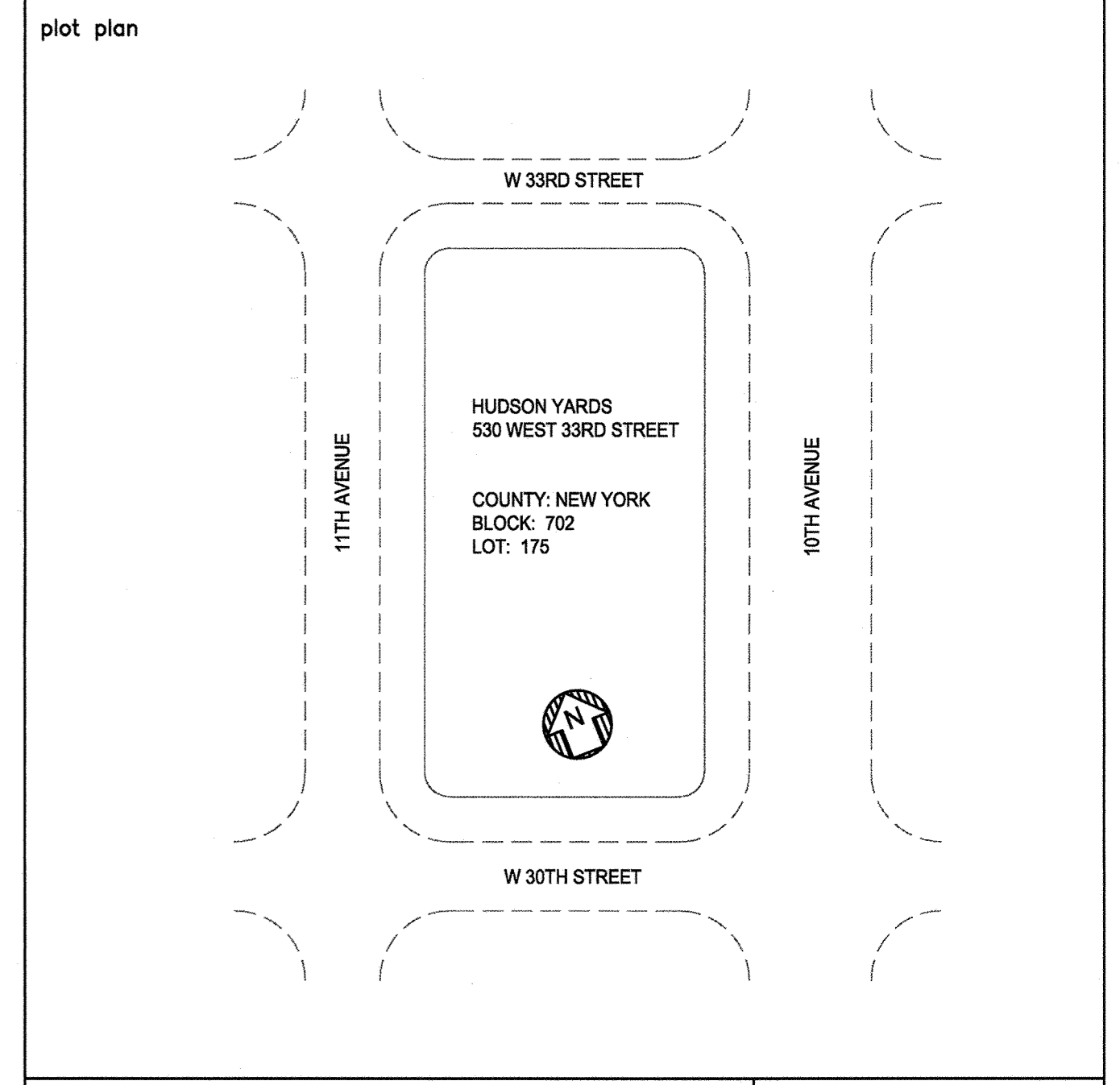
DRAWING LIST table listing drawing numbers and titles.

GENERAL NOTES section containing 6 numbered notes regarding work requirements and standards.

NEW YORK CITY PLUMBING NOTES section containing 12 numbered notes regarding plumbing system requirements.



Revision table with columns for REV. #, REVISION DESCRIPTION, DATE, and BY.

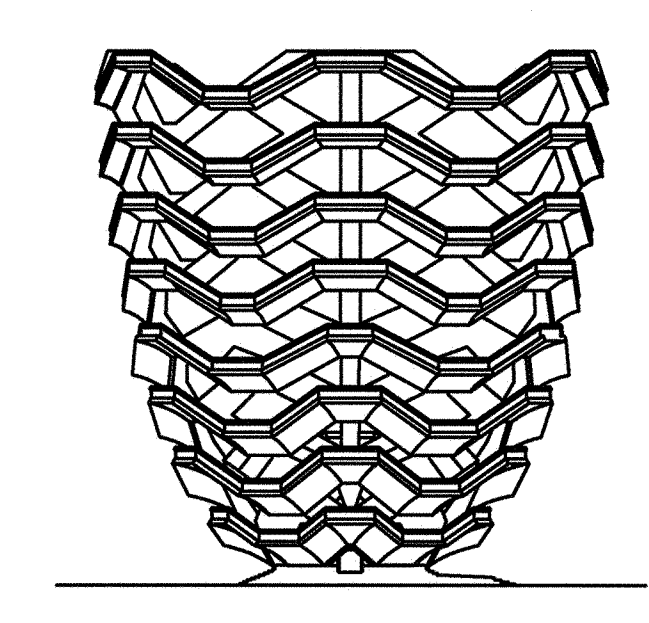


NYC DOB FILING NOTE section with project details and a signature.

HUDSON YARDS VESSEL SYMBOLS, LEGENDS, DRAWING LIST header and drawing information.

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

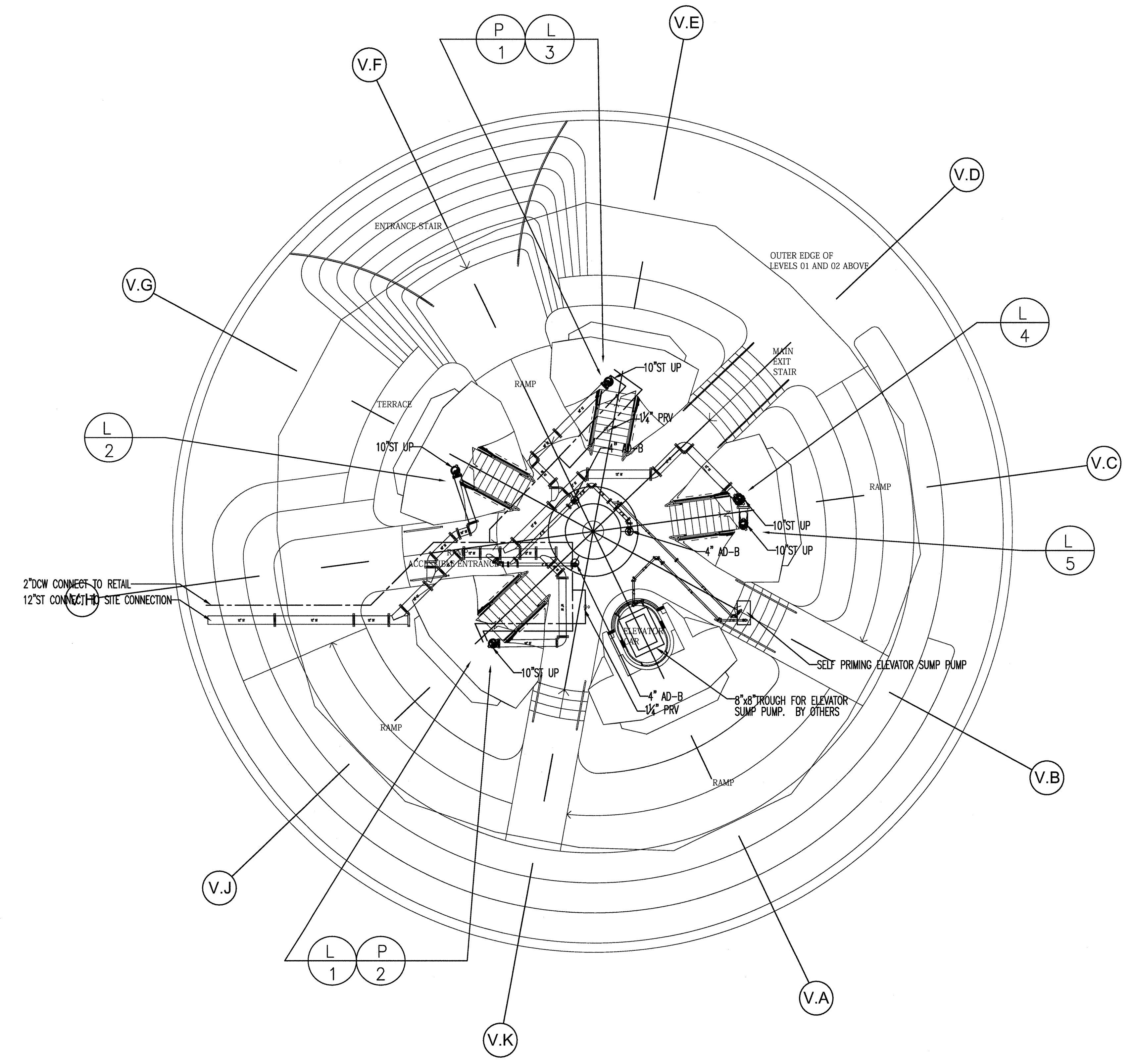
60 COLUMBUS CIRCLE
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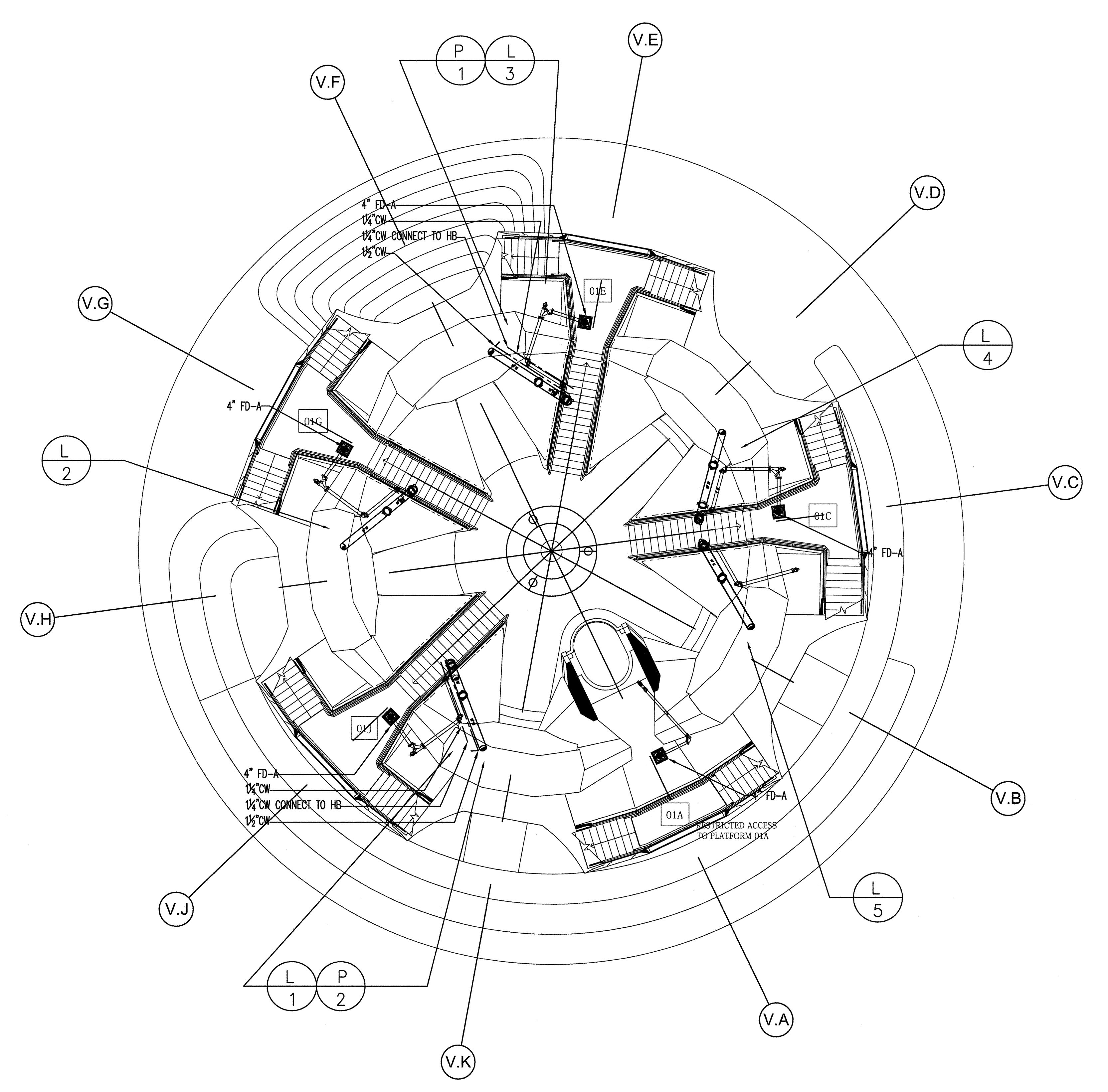
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PEDESTAL LEVEL PIPING PART PLAN

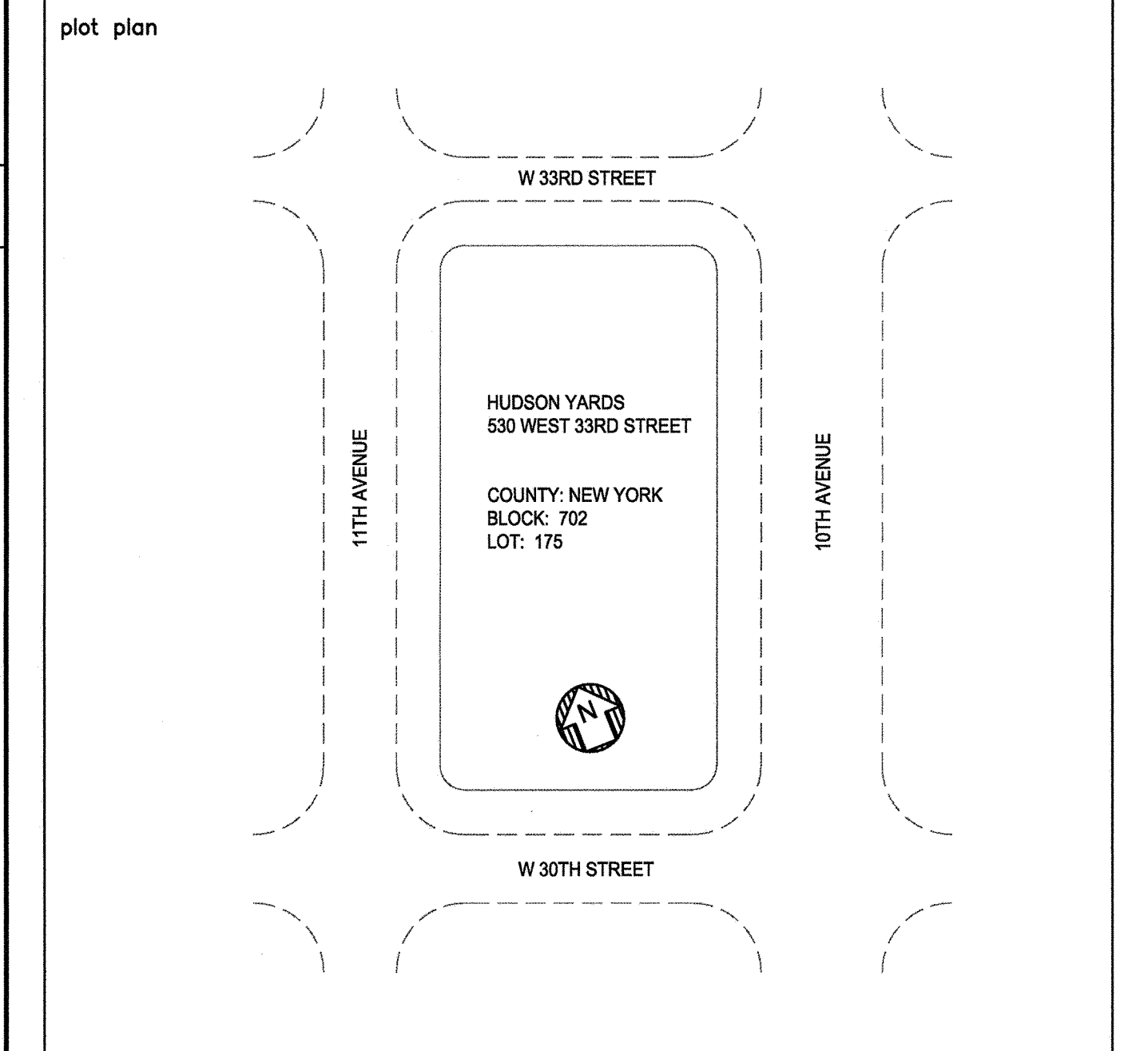


LEVEL 1 PIPING PART PLAN

- NOTES:**
1. EXACT DRAIN LOCATION TO BE DETERMINED BY ARCHITECT.
 2. CUSTOM DRAIN DETAILS TO BE PROVIDED ONCE LANDING / PAVING DETAILS ARE PROVIDED.
 3. EXACT HOSE BIB LOCATION TO BE DETERMINED BY ARCHITECT.
 4. WATER PIPE TO BE DRAINED FOR WINTERIZING.
 5. ALL PIPING SHOWN IS AT UNDERSIDE OF LEVEL SHOWN

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REV. #	REVISION DESCRIPTION	DATE	BY
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HUDSON YARDS VESSEL

PEDESTAL & FIRST-LEVEL PLUMBING PLAN

drawn by: JA
date: 5/06/16

checked by: PP
date: 1/21/16

designed by: HUB
date: 5/06/16

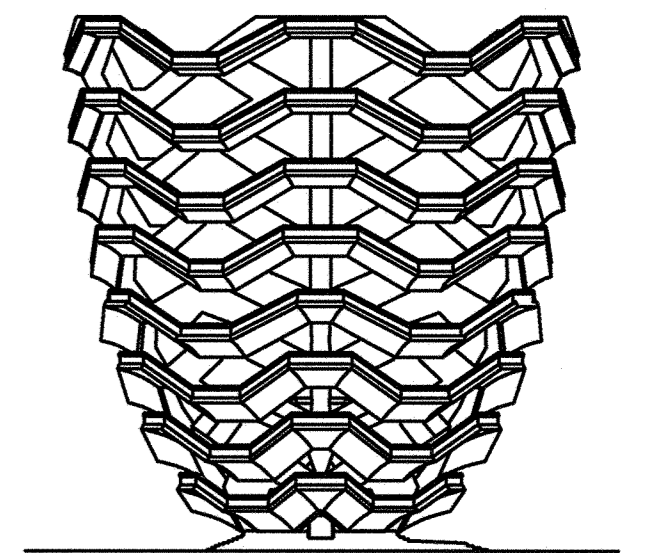
project no.: 14086

scale: 100.00

sheet: 2 OF 16

HUDSON YARDS VESSEL

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RELATED COMPANIES

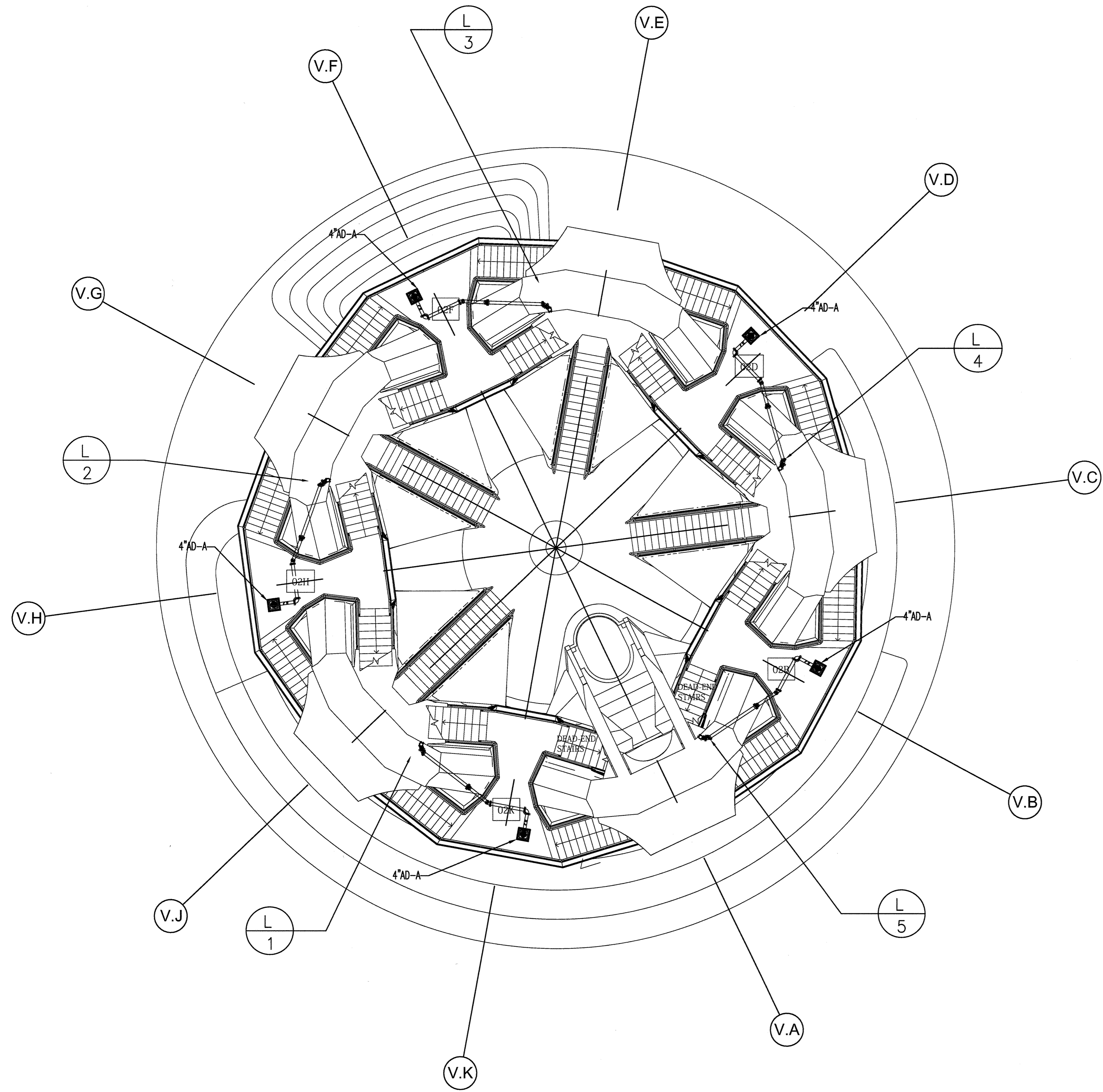
60 COLUMBUS CIRCLE
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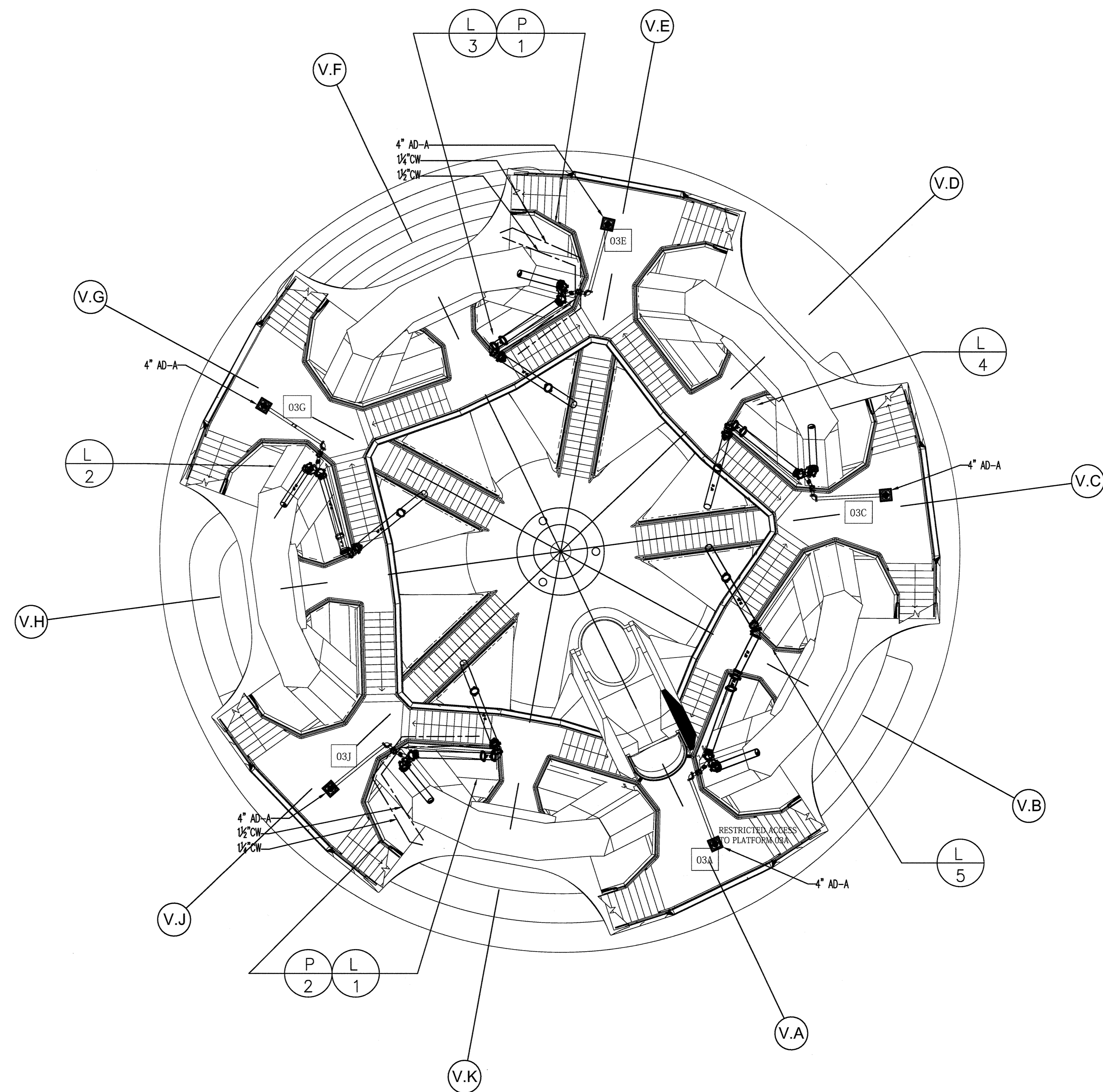
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BROOKLYN, NEW YORK 11222 MASTER PLUMBER LIC # 0195
TEL: 718-389-6100



LEVEL 2 PIPING PART PLAN

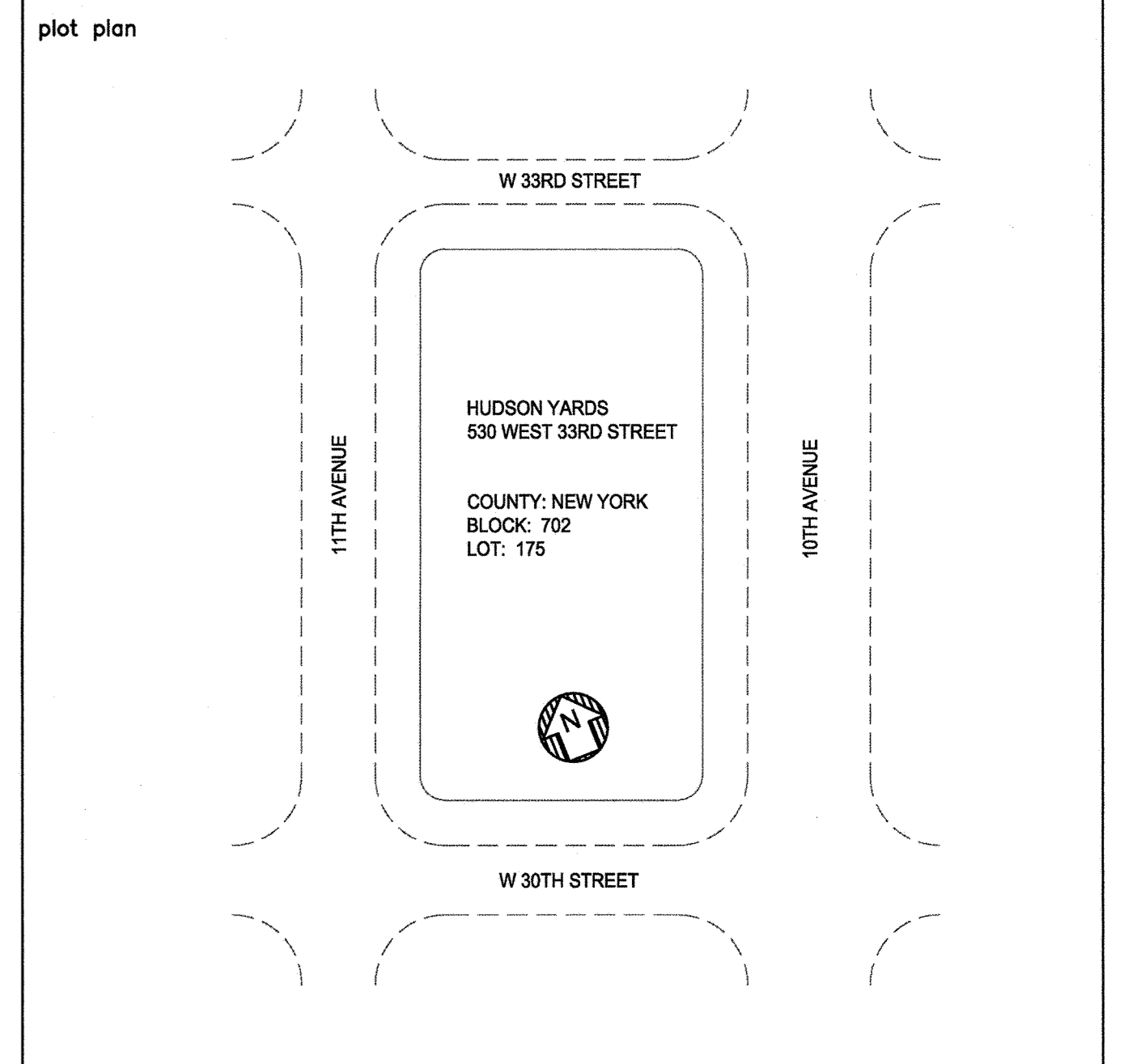


LEVEL 3 PIPING PART PLAN

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 4. WATER PIPE TO BE DRAINED FOR WINTERIZING.
 5. ALL PIPING SHOWN IS AT UNDERSIDE OF LEVEL SHOWN.

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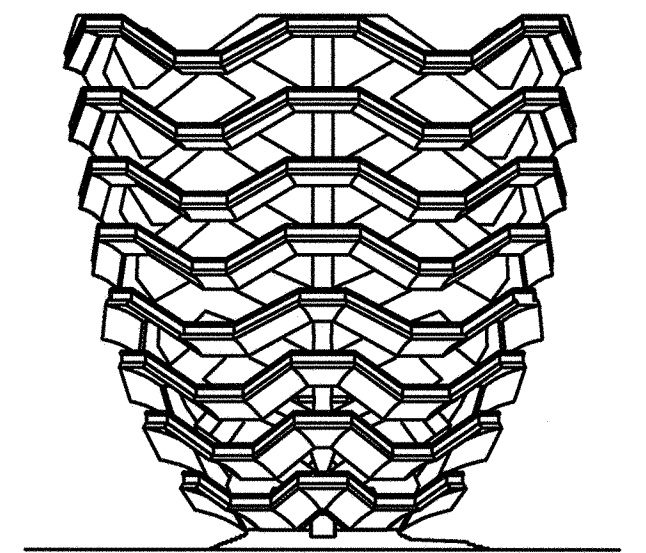
HUDSON YARDS VESSEL

LEVELS 2-3 FLOOR PLAN

drawn by: JA
checked by: [Signature]
date: 5/06/16
project no.: 14986

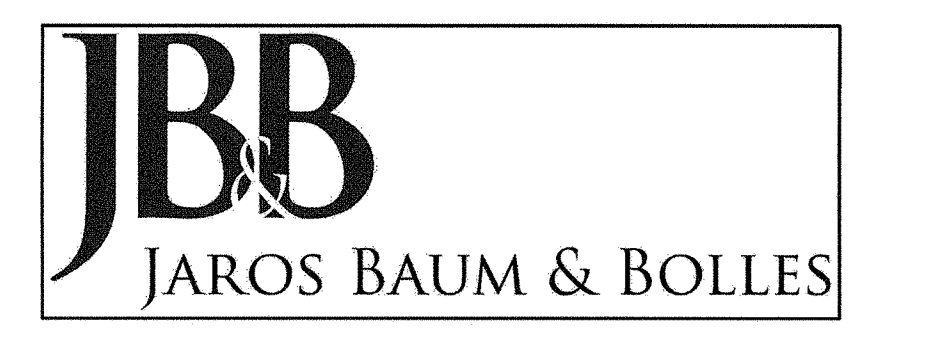
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13 OF 18



RELATED COMPANIES

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NEW YORK, NEW YORK 10023
TEL: 212-801-1000

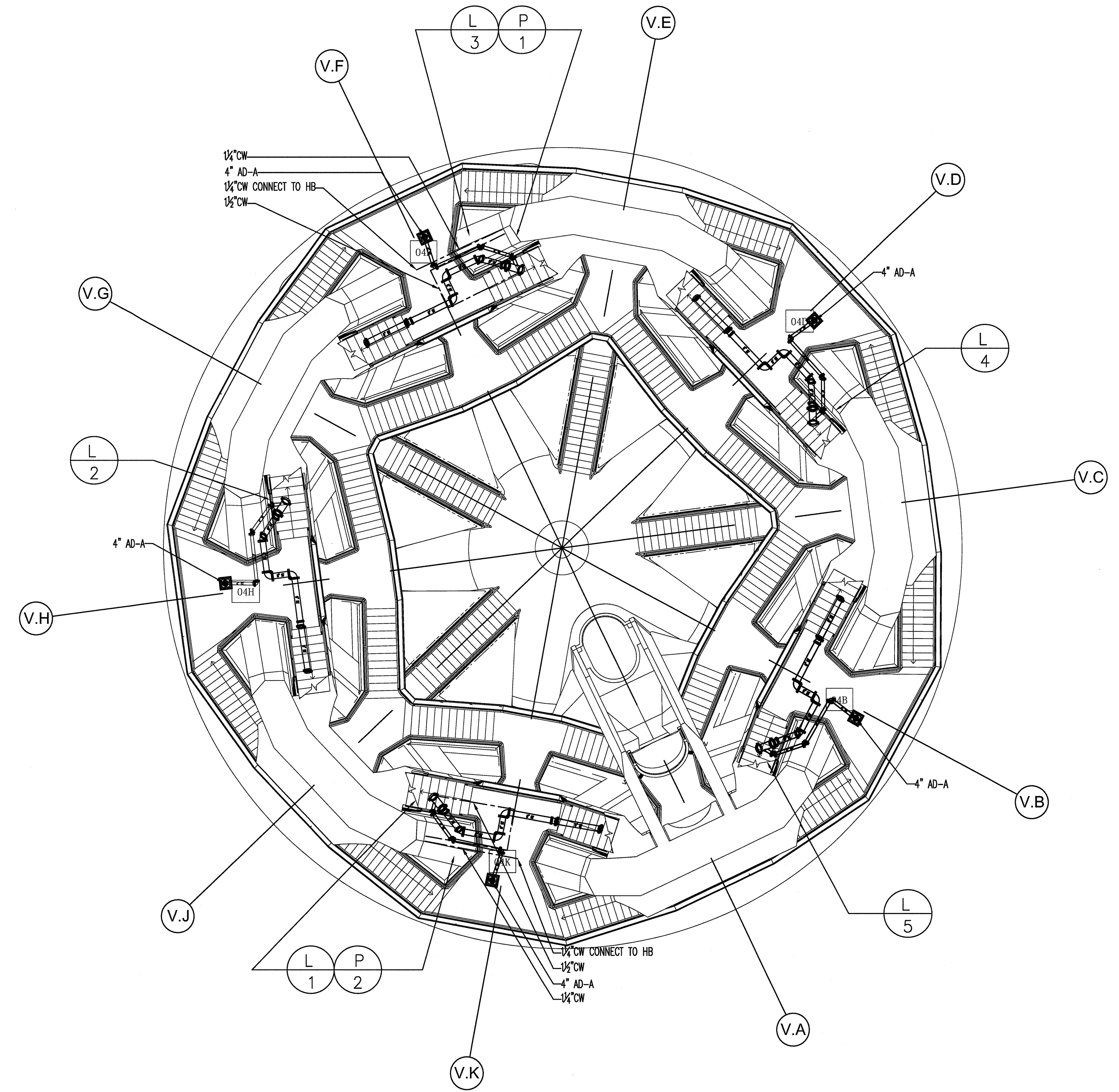


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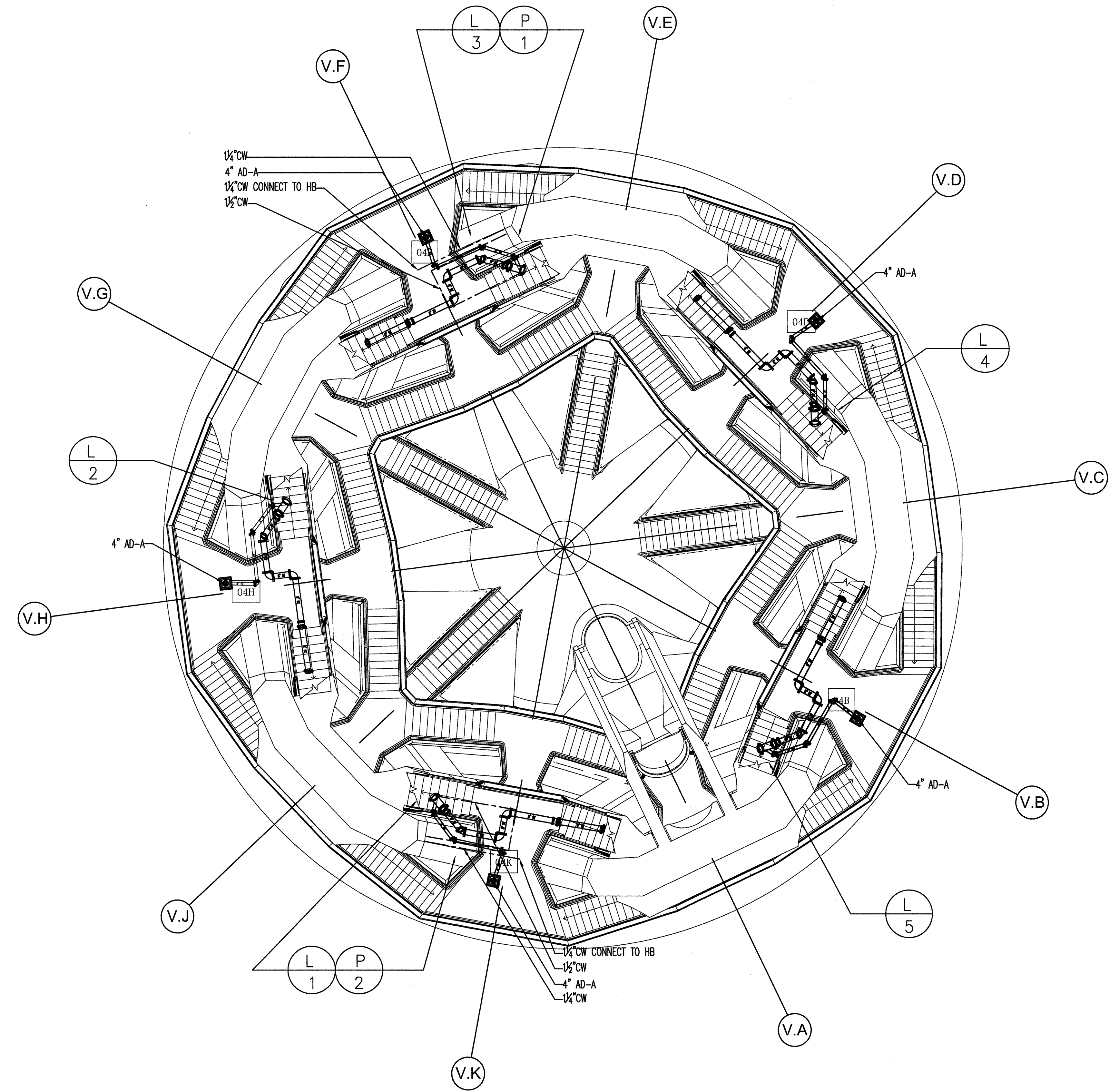
PACE PLUMBING CORP.

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HAROLD BLOCK
MASTER PLUMBER LIC # 0195



LEVEL 4 PIPING PART PLAN



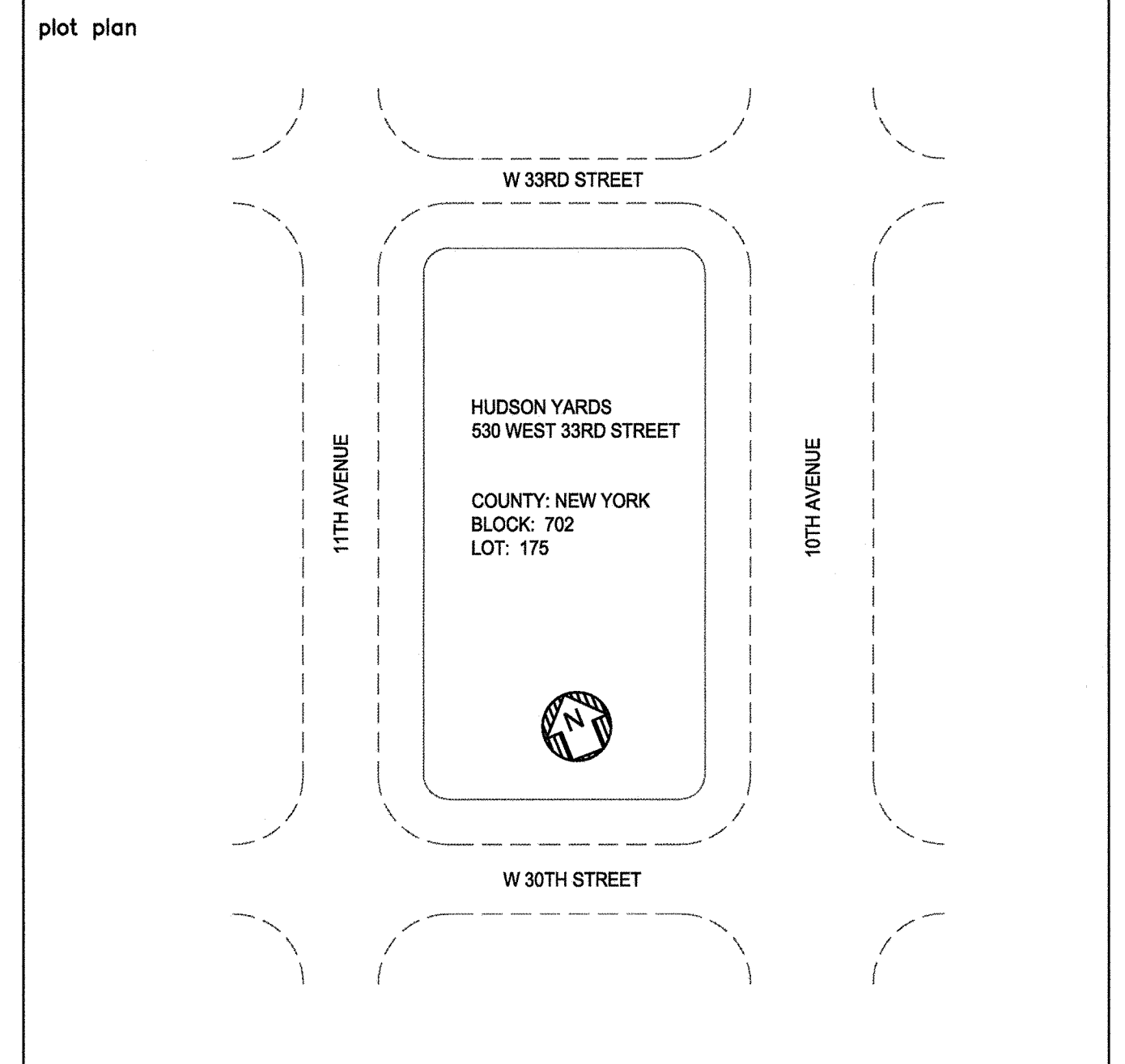
LEVEL 5 PIPING PART PLAN

- NOTES:**
1. EXACT DRAIN LOCATION TO BE DETERMINED BY ARCHITECT.
 2. CUSTOM DRAIN DETAILS TO BE PROVIDED ONCE LANDING / PAVING DETAILS ARE PROVIDED.
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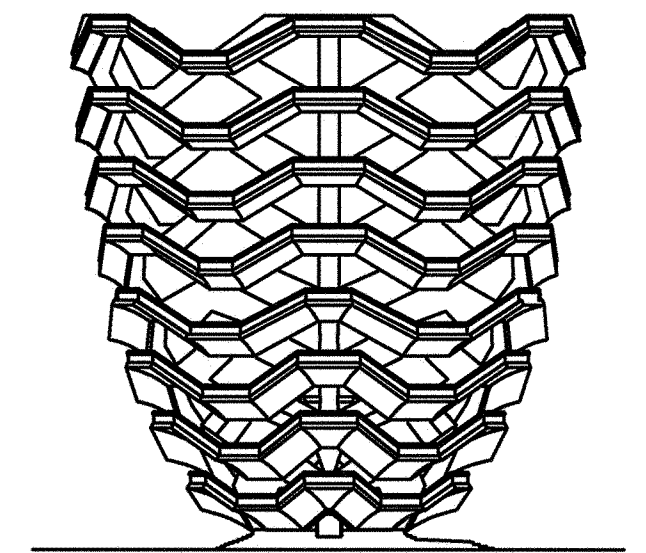
HUDSON YARDS VESSEL

LEVELS 4 & 5 FLOOR PLAN

drawn by: [signature]
checked by: [signature]
date: 5/06/16
project no.: 14986

scale: 1/8" = 1'-0"

4 OF 16



RELATED COMPANIES

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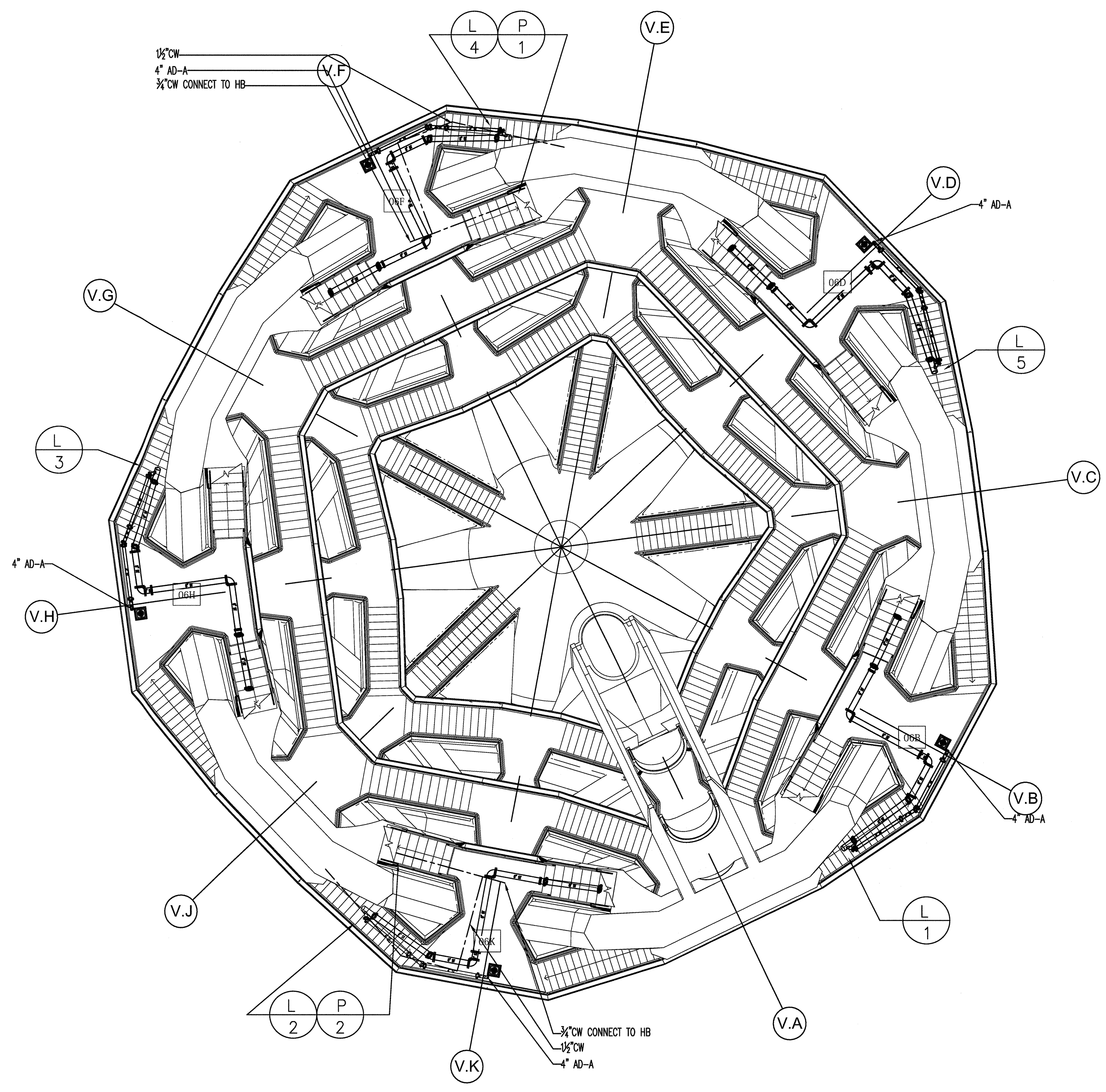


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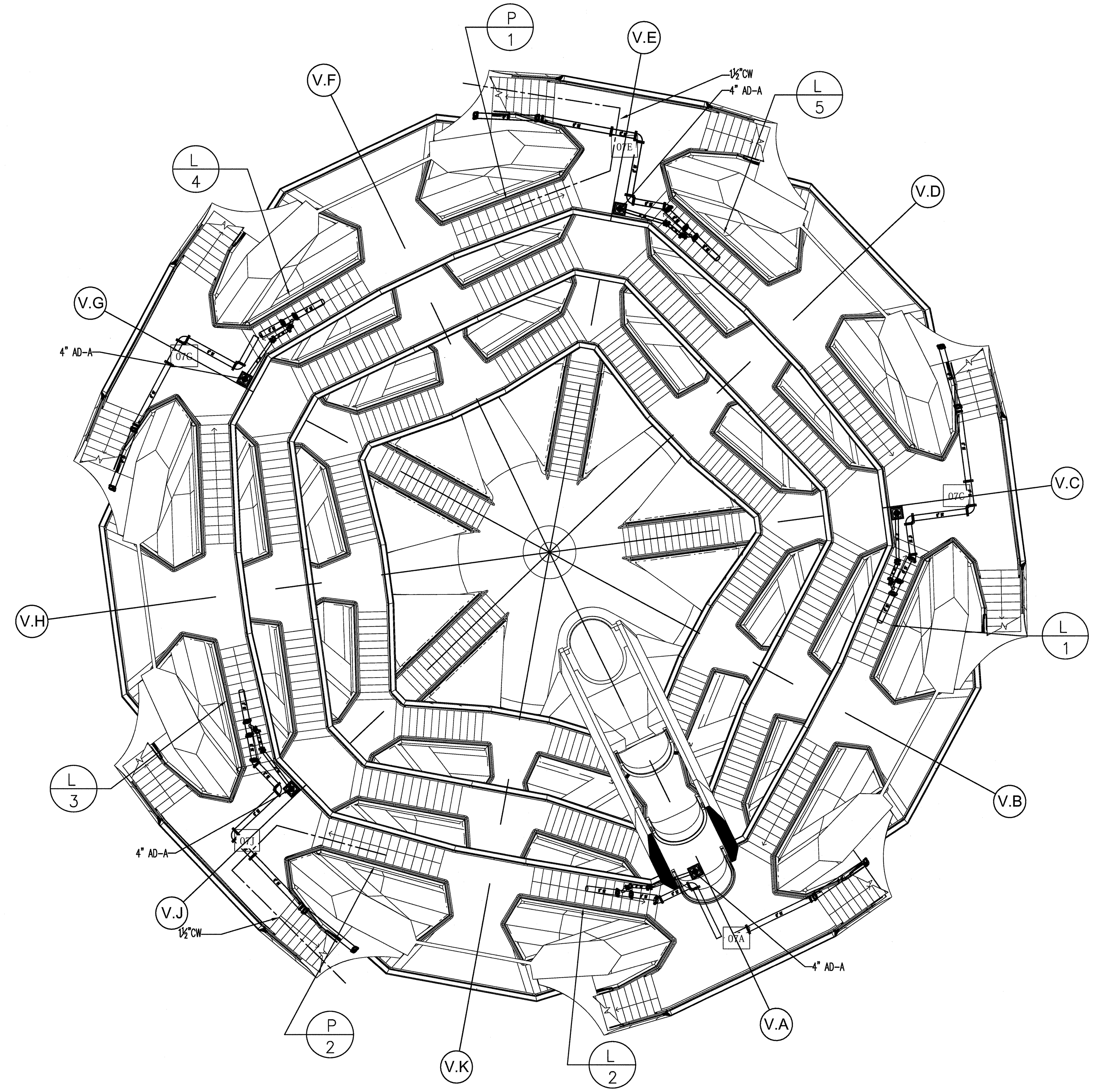
PACE PLUMBING CORP.

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HAROLD BLOCK
MASTER PLUMBER LIC # 0195

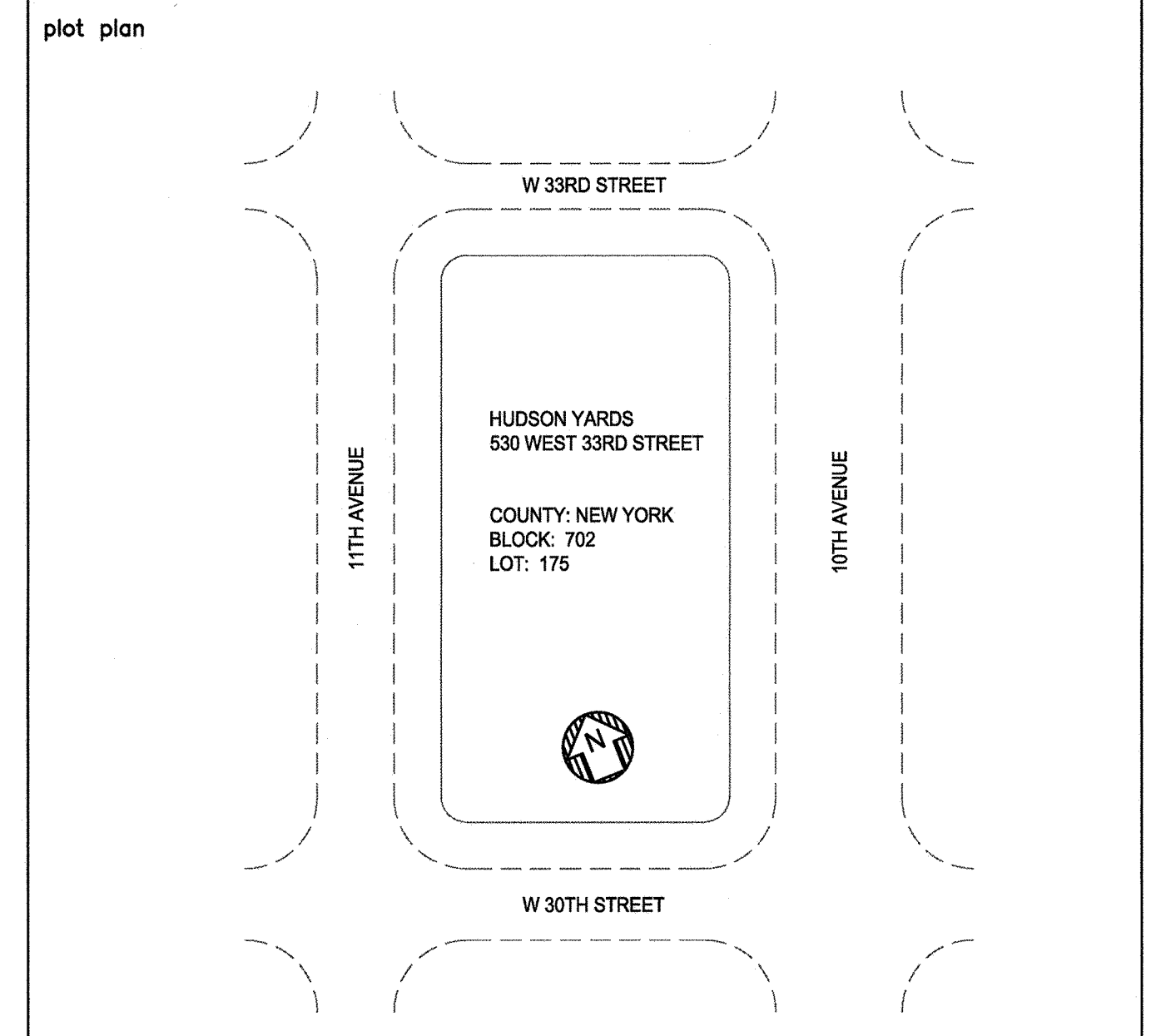


LEVEL 6 PIPING PART PLAN



LEVEL 7 PIPING PART PLAN

REV. #	REVISION DESCRIPTION	DATE	BY
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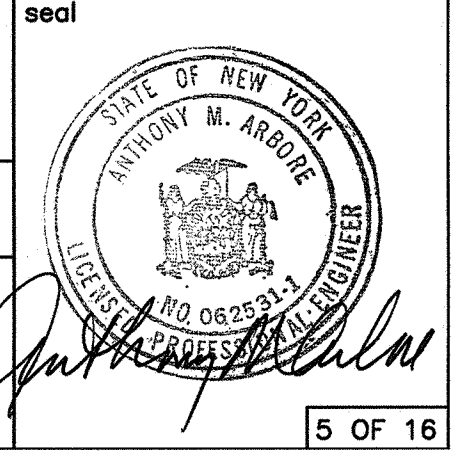
- NOTES:
1. EXACT DRAIN LOCATION TO BE DETERMINED BY ARCHITECT.
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HUDSON YARDS VESSEL

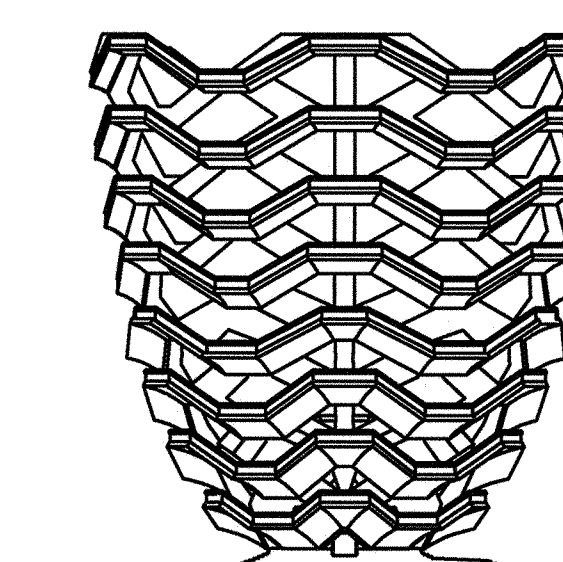
LEVELS 6 & 7 FLOOR PLAN

drawn by: JJA
scale: 1/8\"/>



HUDSON YARDS VESSEL

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RELATED COMPANIES

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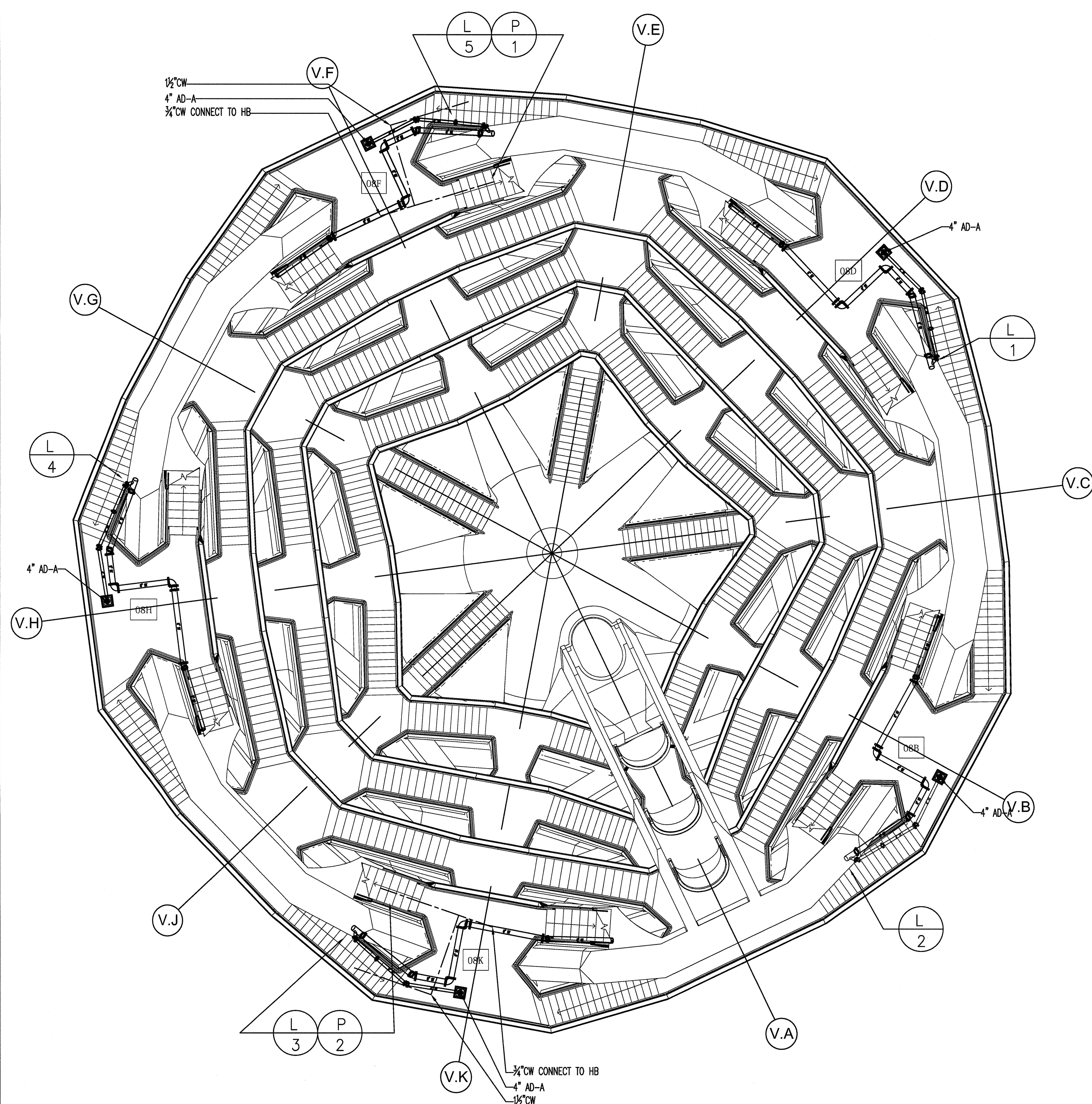


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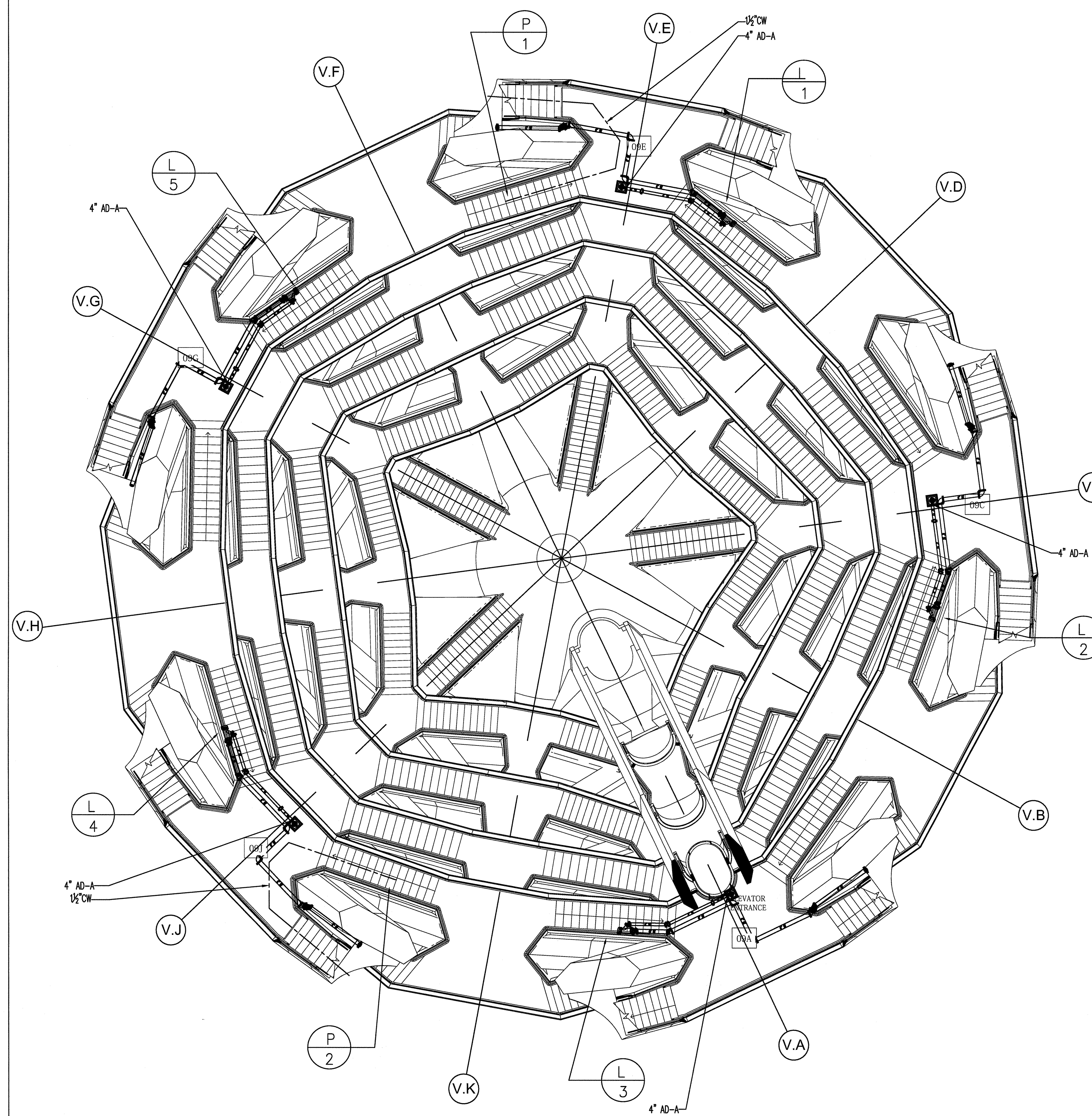
PACE PLUMBING CORP.

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BROOKLYN, NEW YORK 11222
TEL: 718-389-6100

HAROLD BLOCK
MASTER PLUMBER LIC # 0195

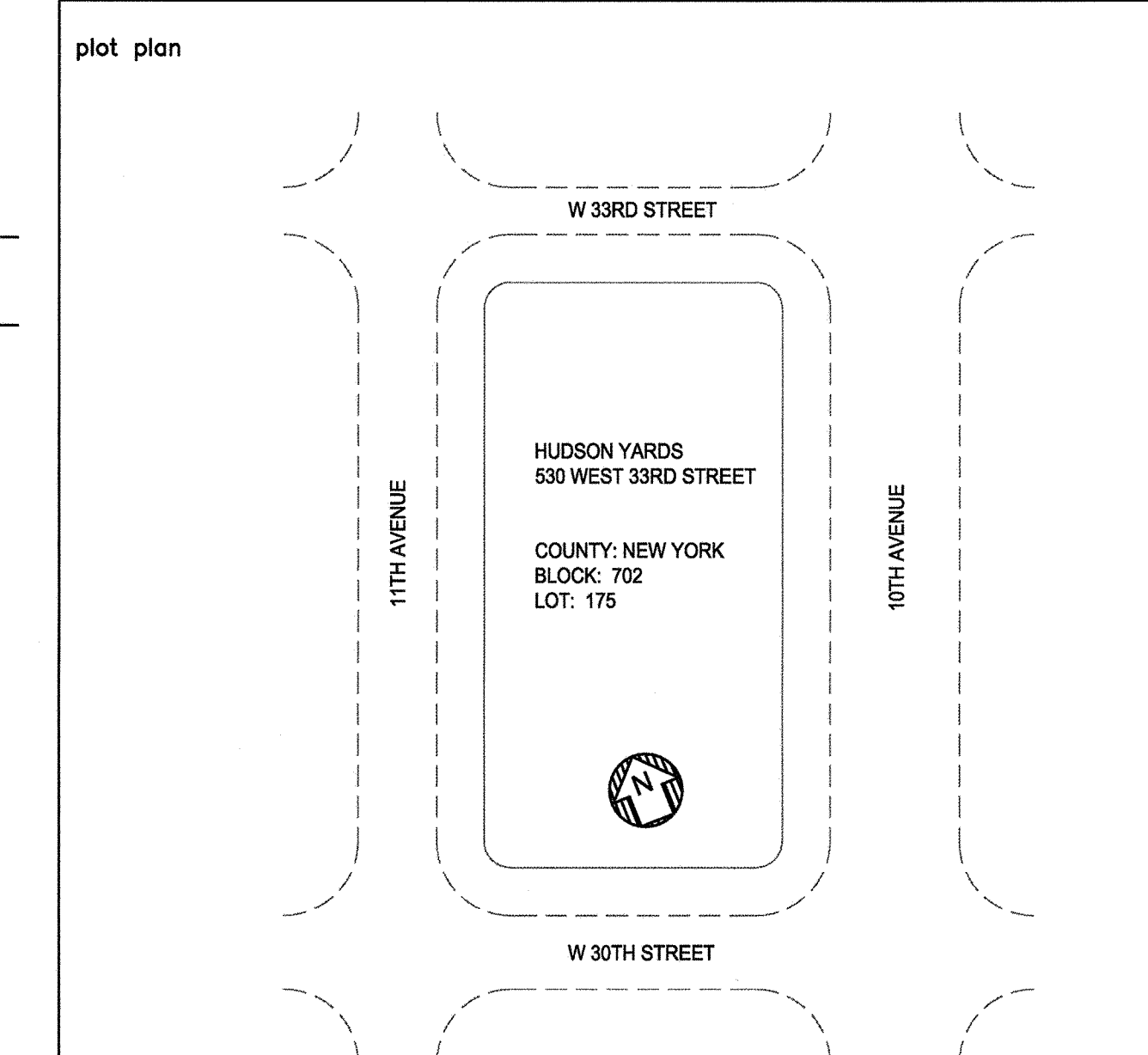


LEVEL 8 PIPING PART PLAN



LEVEL 9 PIPING PART PLAN

REV. #	REVISION DESCRIPTION	DATE	BY
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- NOTES:**
1. EXACT DRAIN LOCATION TO BE DETERMINED BY ARCHITECT.
 2. CUSTOM DRAIN DETAILS TO BE PROVIDED ONCE LANDING / PAVING DETAILS ARE PROVIDED.
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HUDSON YARDS VESSEL

LEVELS 8 & 9 FLOOR PLAN

scale: 1/8" = 1'-0" (check by)

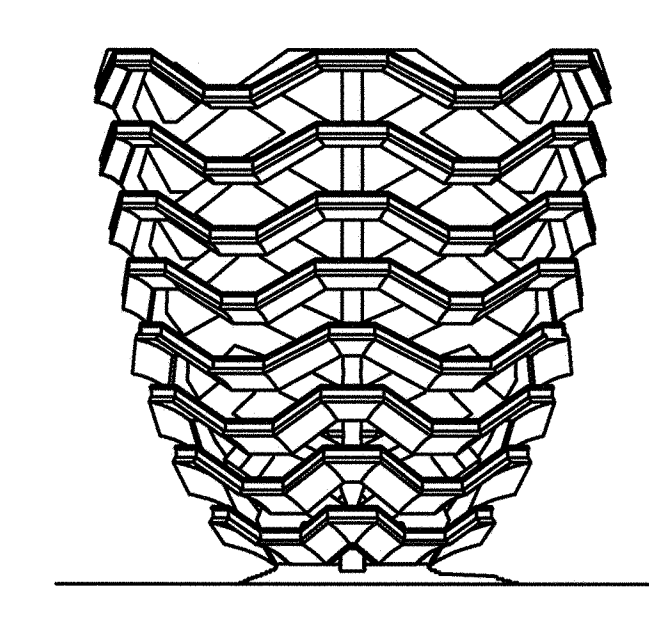
drawn by: JA

date: 5/06/16

14986

0

104.00



RELATED COMPANIES

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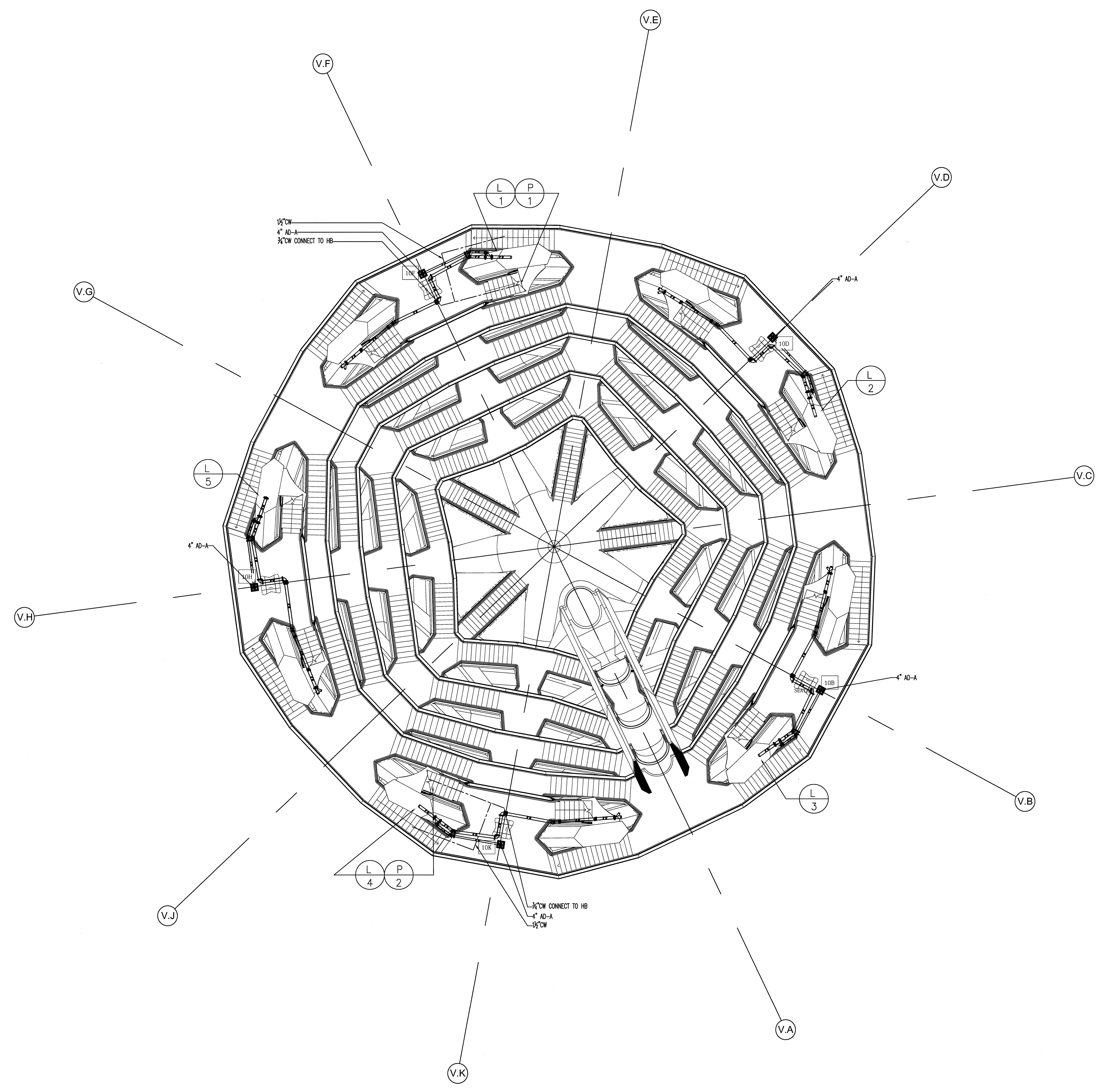


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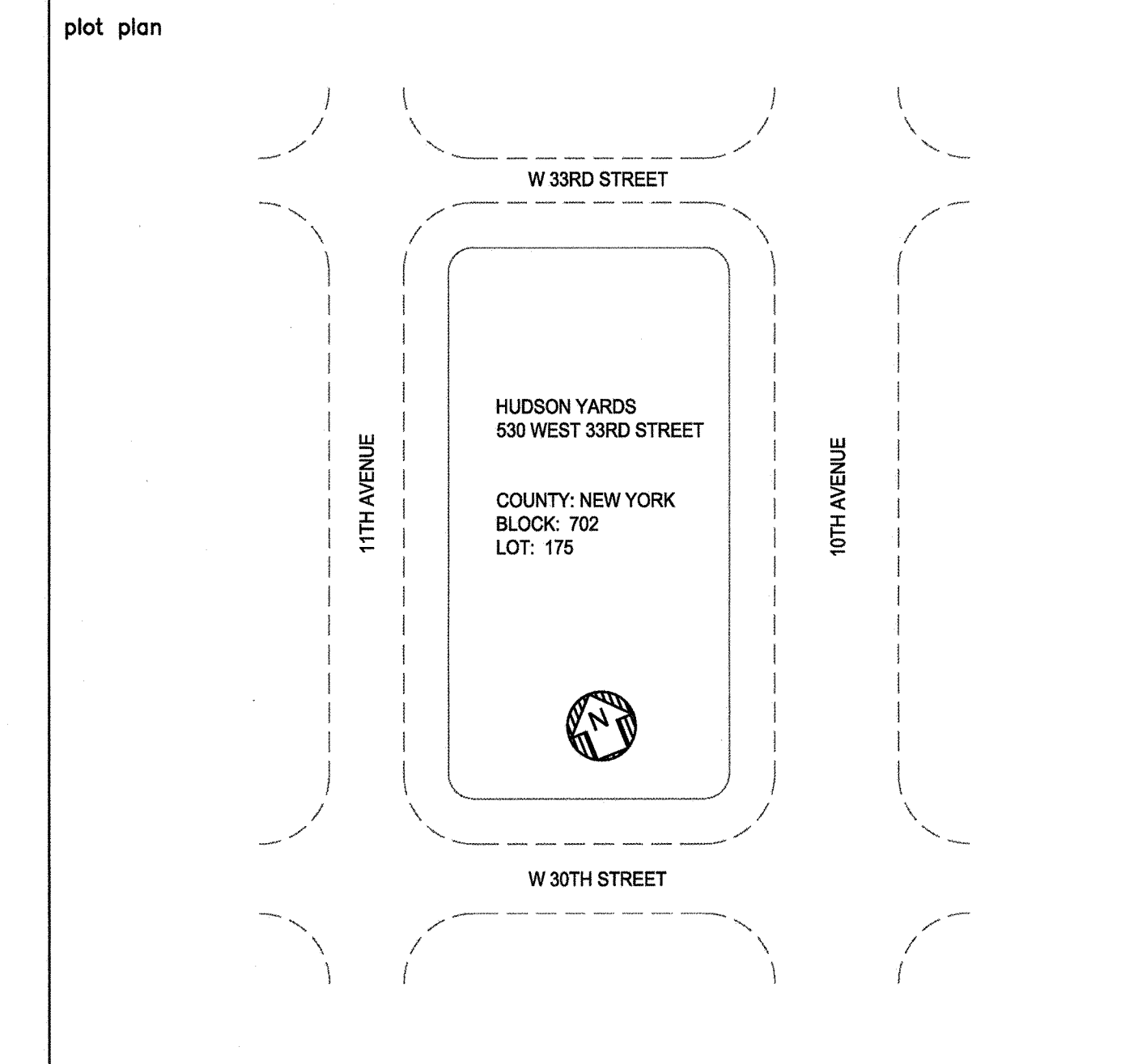
PACE PLUMBING CORP.

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HAROLD BLOCK
MASTER PLUMBER LIC # 0195



REV. #	REVISION DESCRIPTION	DATE	BY
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- NOTES:**
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HUDSON YARDS VESSEL

LEVEL 10 FLOOR PLAN

Scale: 1/8" = 1'-0"

DATE: 5/06/16

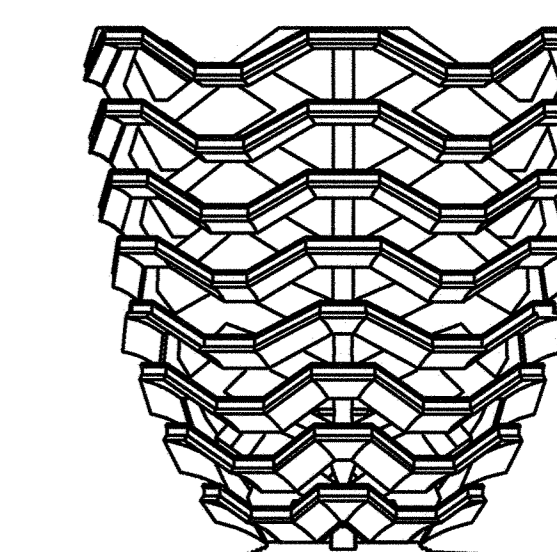
PROJECT NO: 14986

Sheet No: 110.00

7 OF 18

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

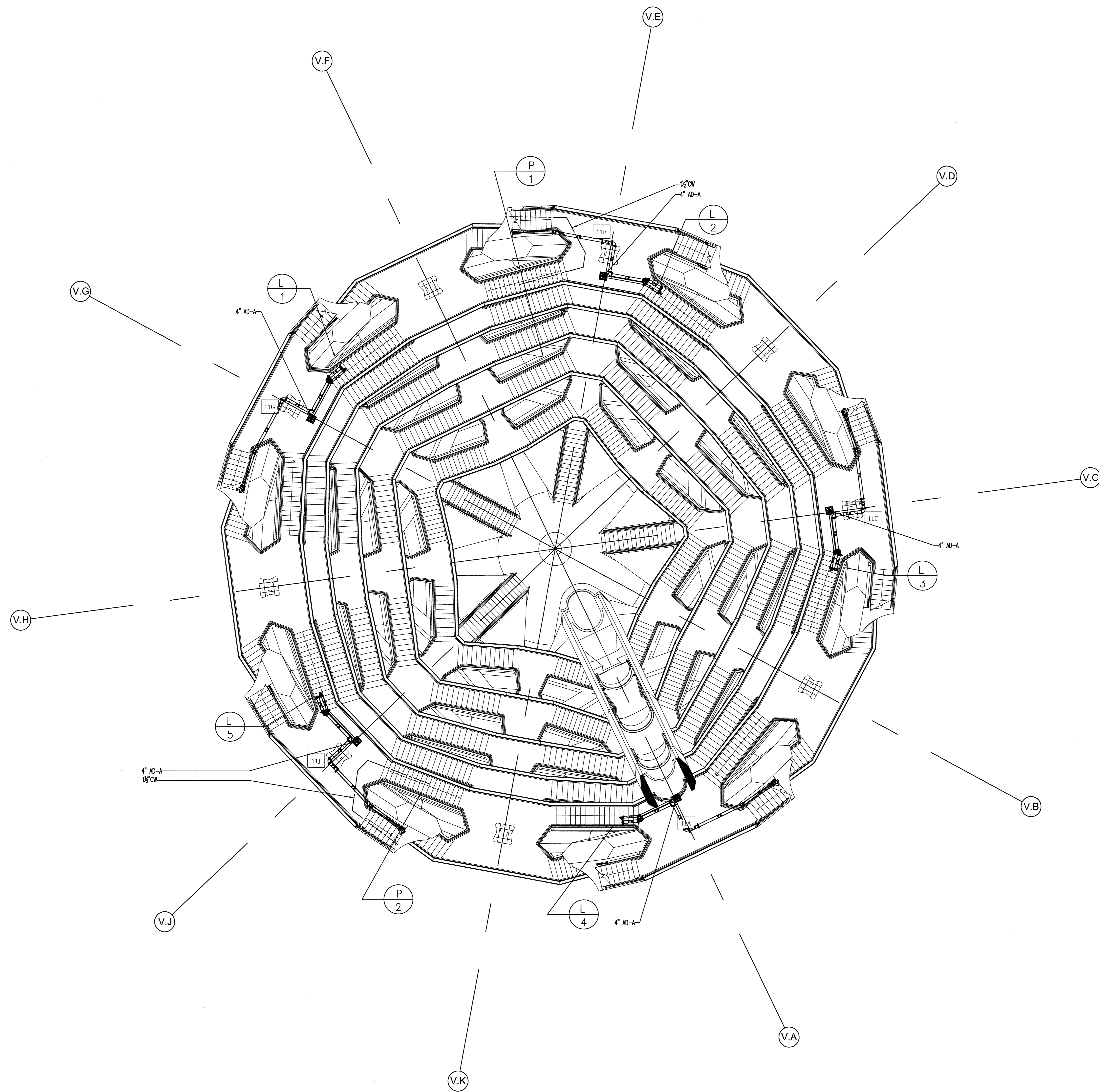
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



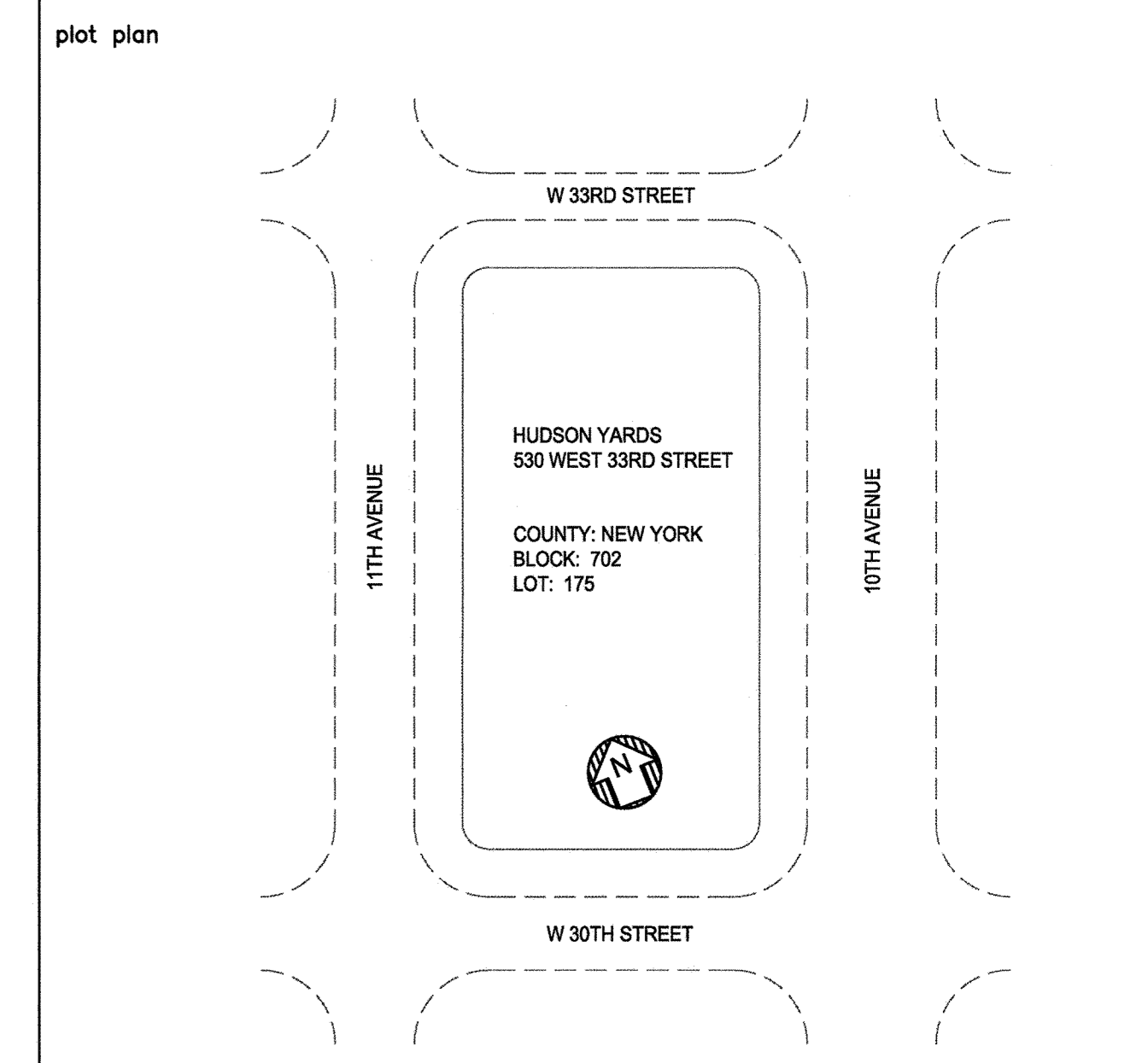
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PACE PLUMBING CORP.

41 BOX STREET BROOKLYN, NEW YORK 11222 HAROLD BLOCK MASTER PLUMBER LIC # 0195
TEL: 718-389-6100



REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	



- NOTES:**
1. EXACT DRAIN LOCATION TO BE DETERMINED BY ARCHITECT.
 2. CUSTOM DRAIN DETAILS TO BE PROVIDED ONCE LANDING / PAVING DETAILS ARE PROVIDED.
 3. EXACT HOSE BIB LOCATION TO BE DETERMINED BY ARCHITECT.
 4. WATER PIPE TO BE DRAINED FOR WINTERIZING.
 5. ALL PIPING SHOWN IS AT UNDERSIDE OF LEVEL SHOWN.

NYC DOB FILING NOTE
THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

HUDSON YARDS VESSEL

LEVEL 4 - FLOOR PLAN

drawn by JA 1/8/16 checked by PP
date 5/06/16 project no. 14986 rev. 0

scale 1/8" = 1'-0"

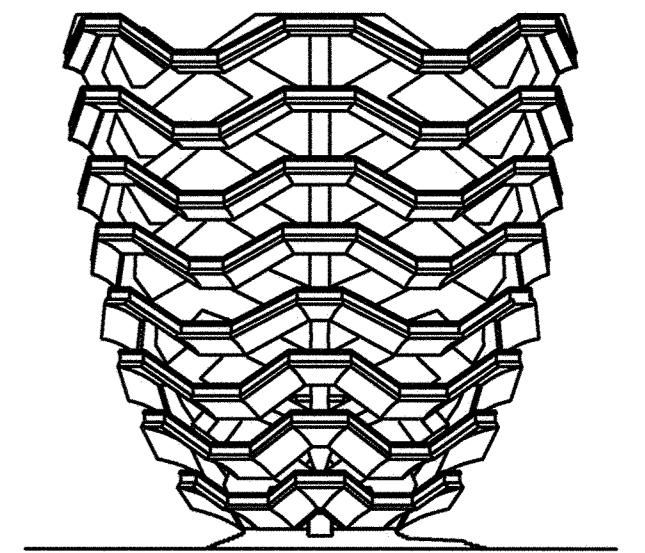
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seal: [Professional Engineer Seal]

8 OF 16

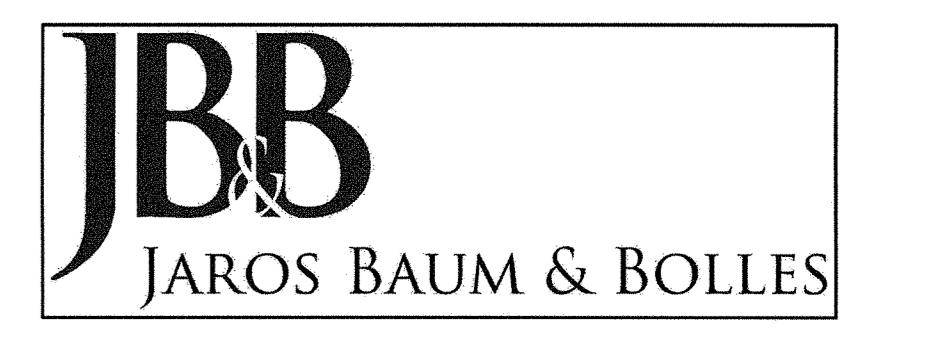
HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000

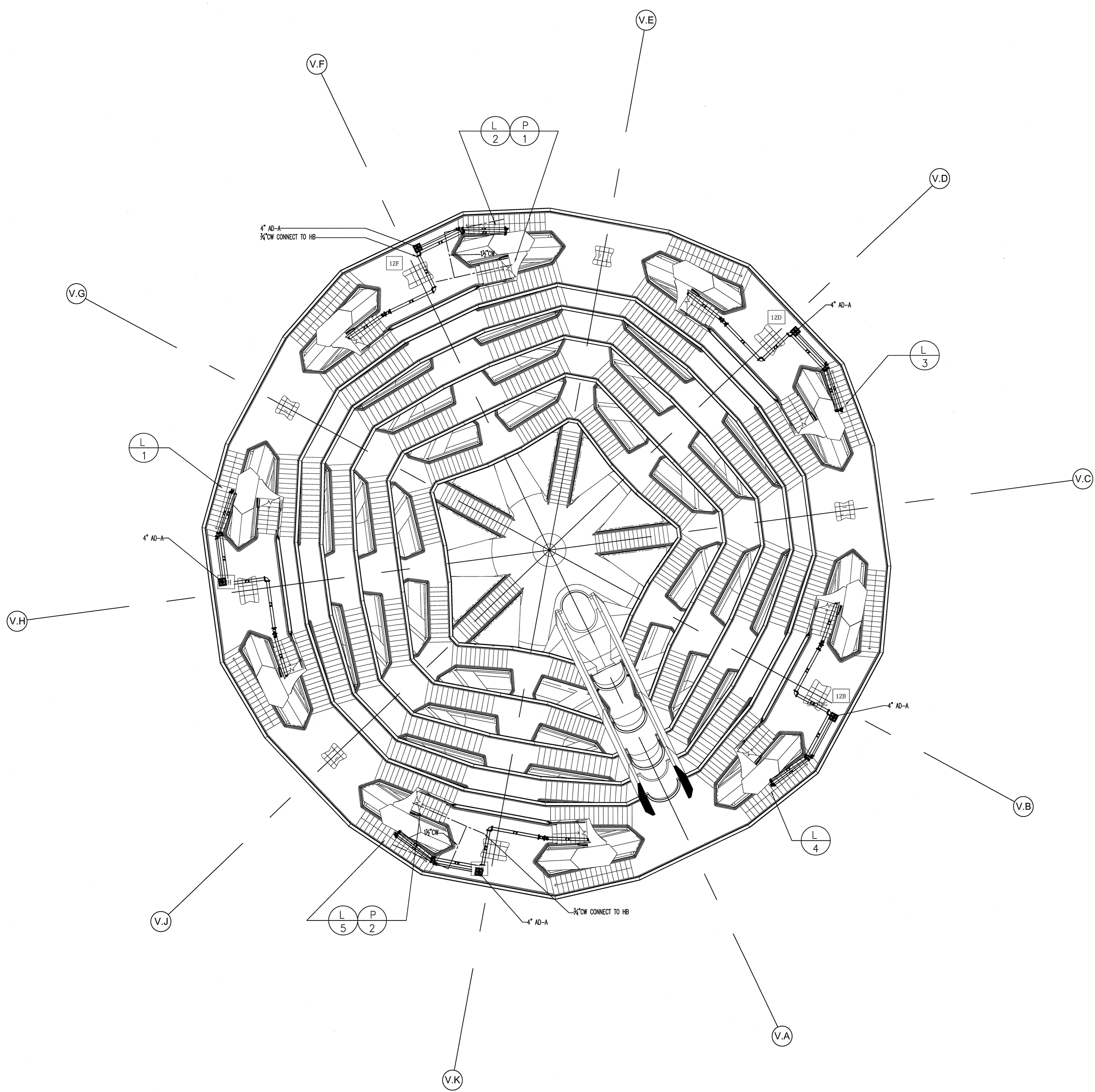


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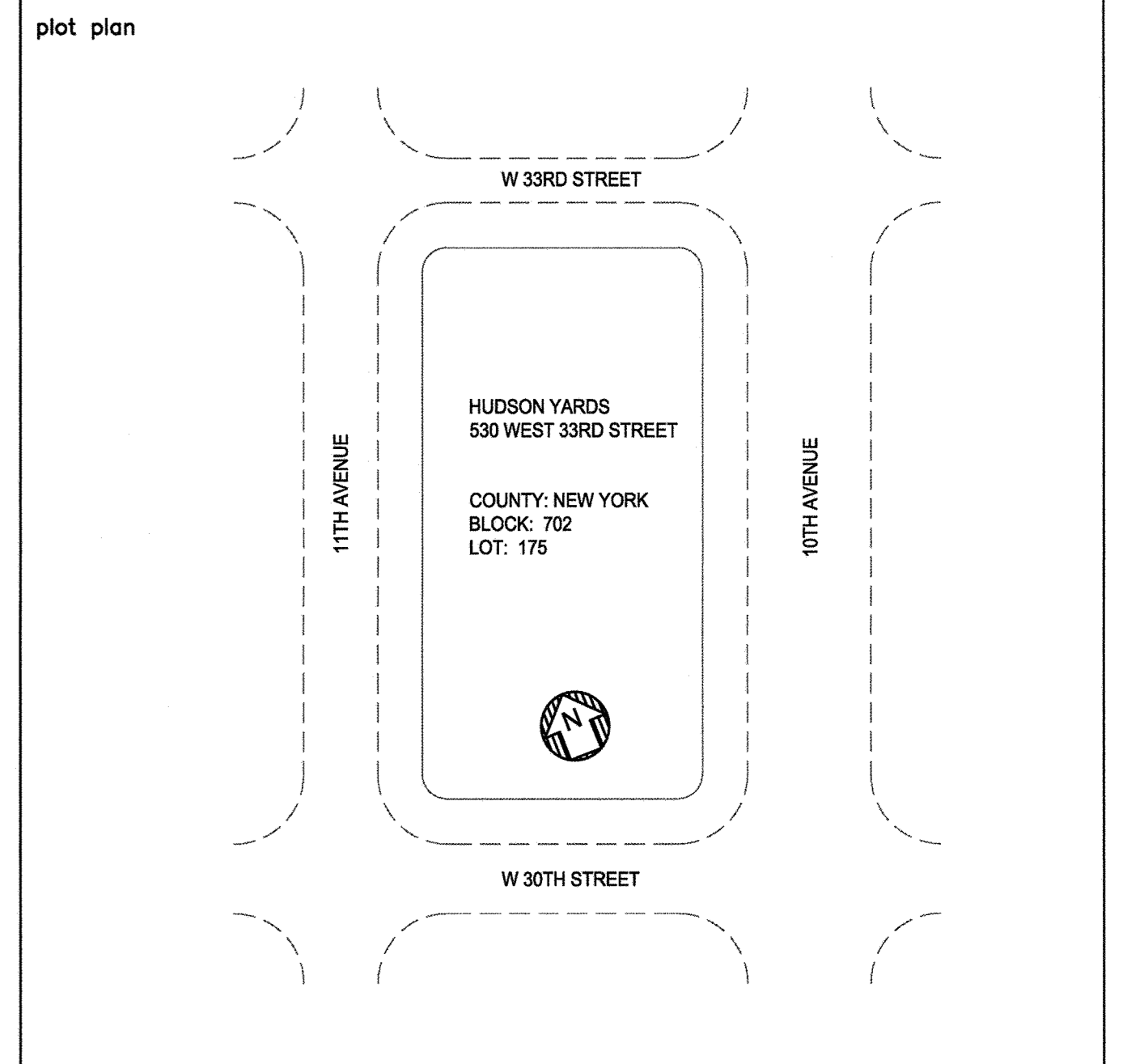
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BROOKLYN, NEW YORK 11222
TEL: 718-389-6100

HAROLD BLOCK
MASTER PLUMBER LIC # 0195



REV. #	REVISION DESCRIPTION	DATE	BY
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HUDSON YARDS VESSEL

LEVEL 12 FLOOR PLAN

drawn by: JA
date: 5/06/16

checked by: [Signature]
date: 5/06/16

scale: 1/8" = 1'-0"

project no.: 14986

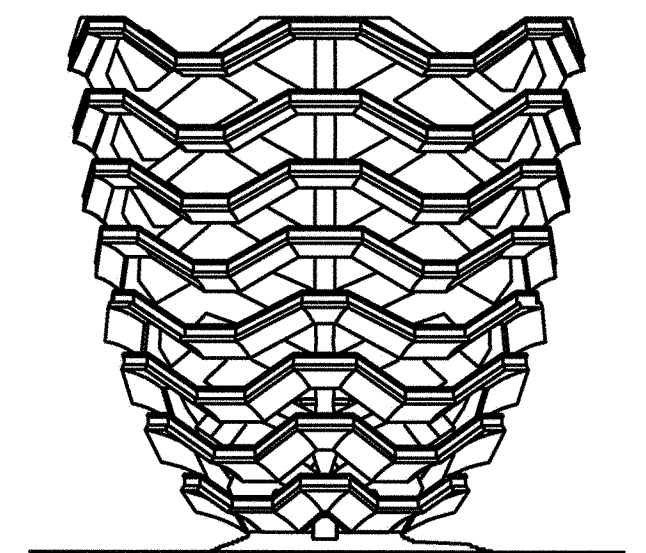
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total sheets: 112.00

9 OF 16

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RELATED COMPANIES

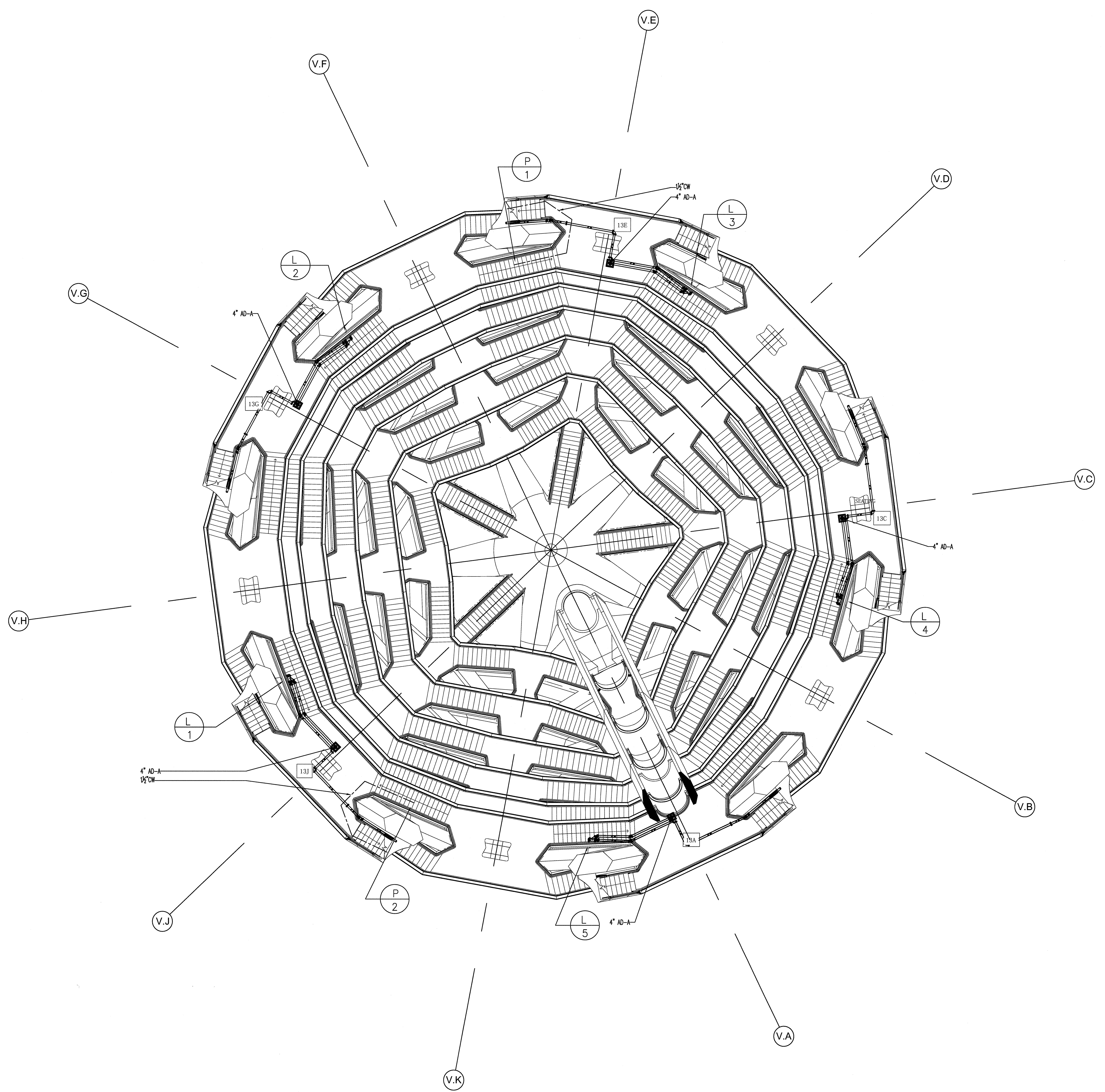
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NEW YORK, NEW YORK 10023
TEL: 212-801-1000



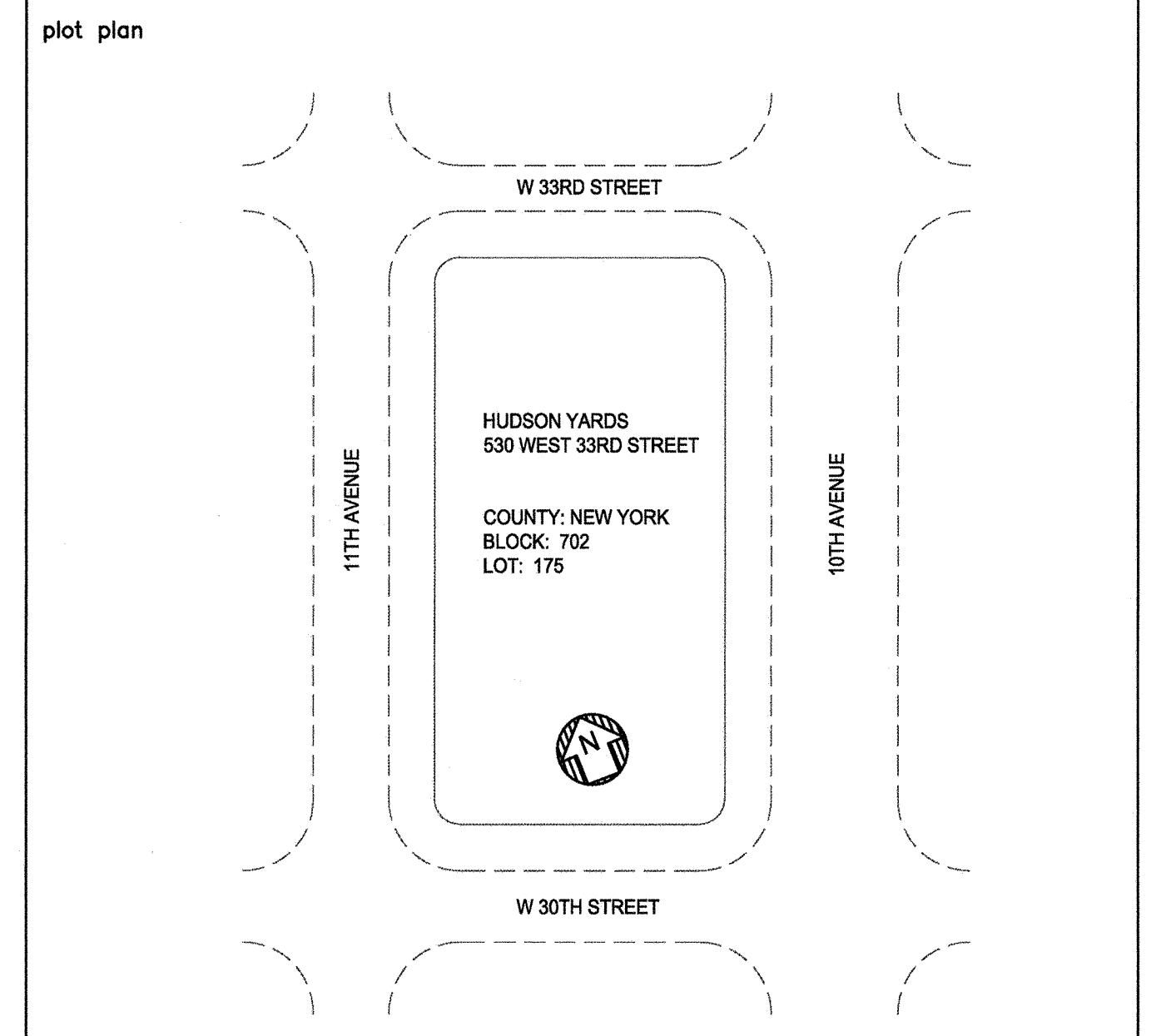
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HAROLD BLOCK MASTER PLUMBER LIC # 0195



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0	ISSUED FOR FILING	05/20/16	



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HUDSON YARDS VESSEL

LEVEL 43 FLOOR PLAN

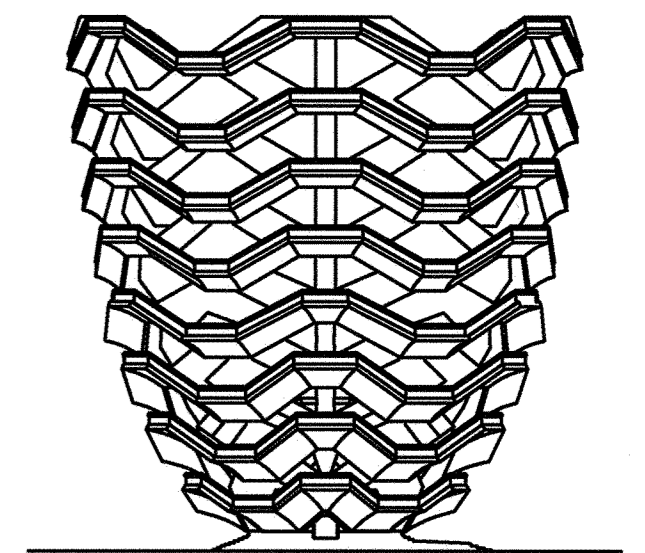
drawn by JA scale 1/8"=1'-0" checked by JPP date 5/06/16 project no. 14986 rev. 0

113.00

10 OF 16

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

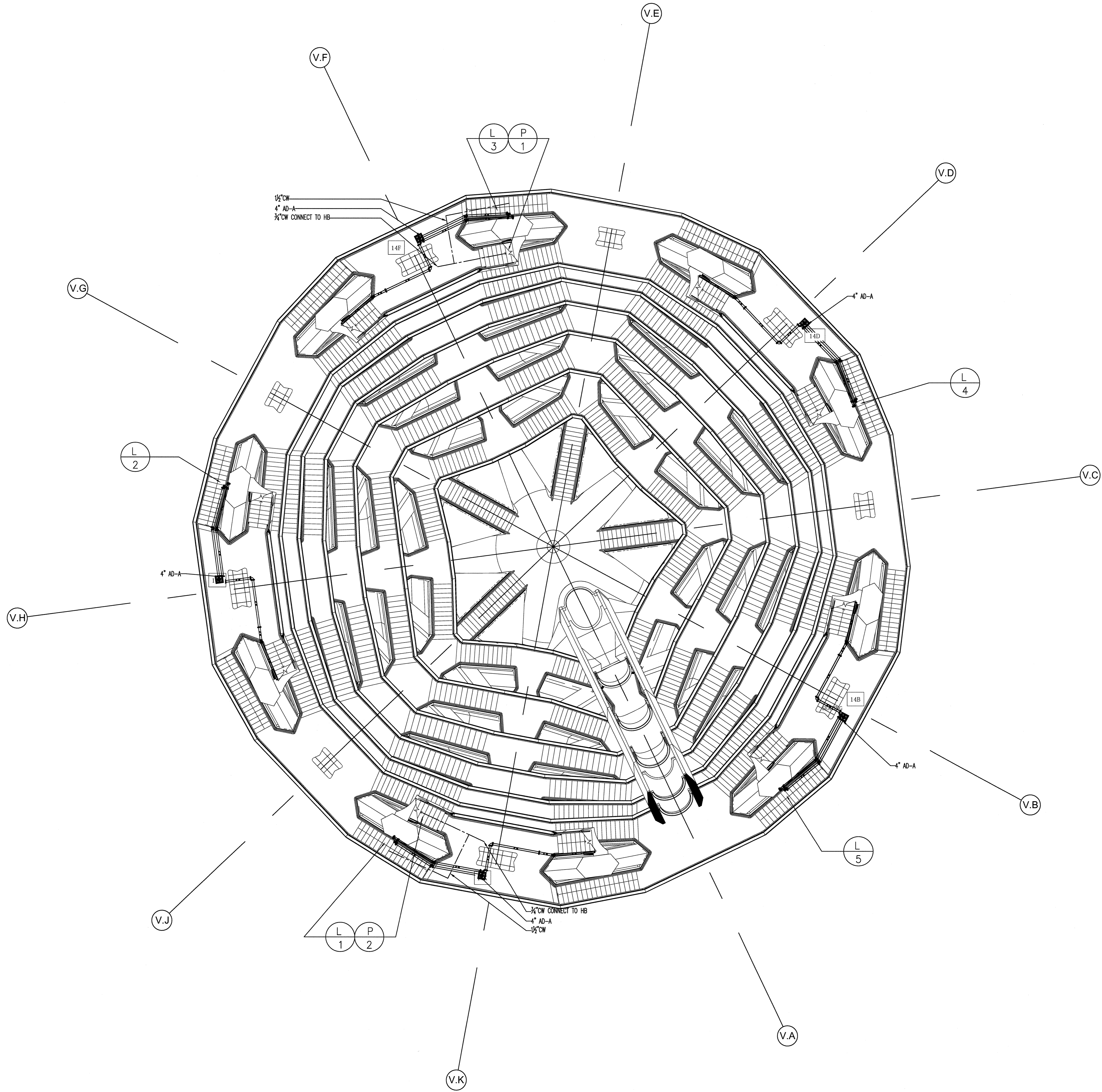
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



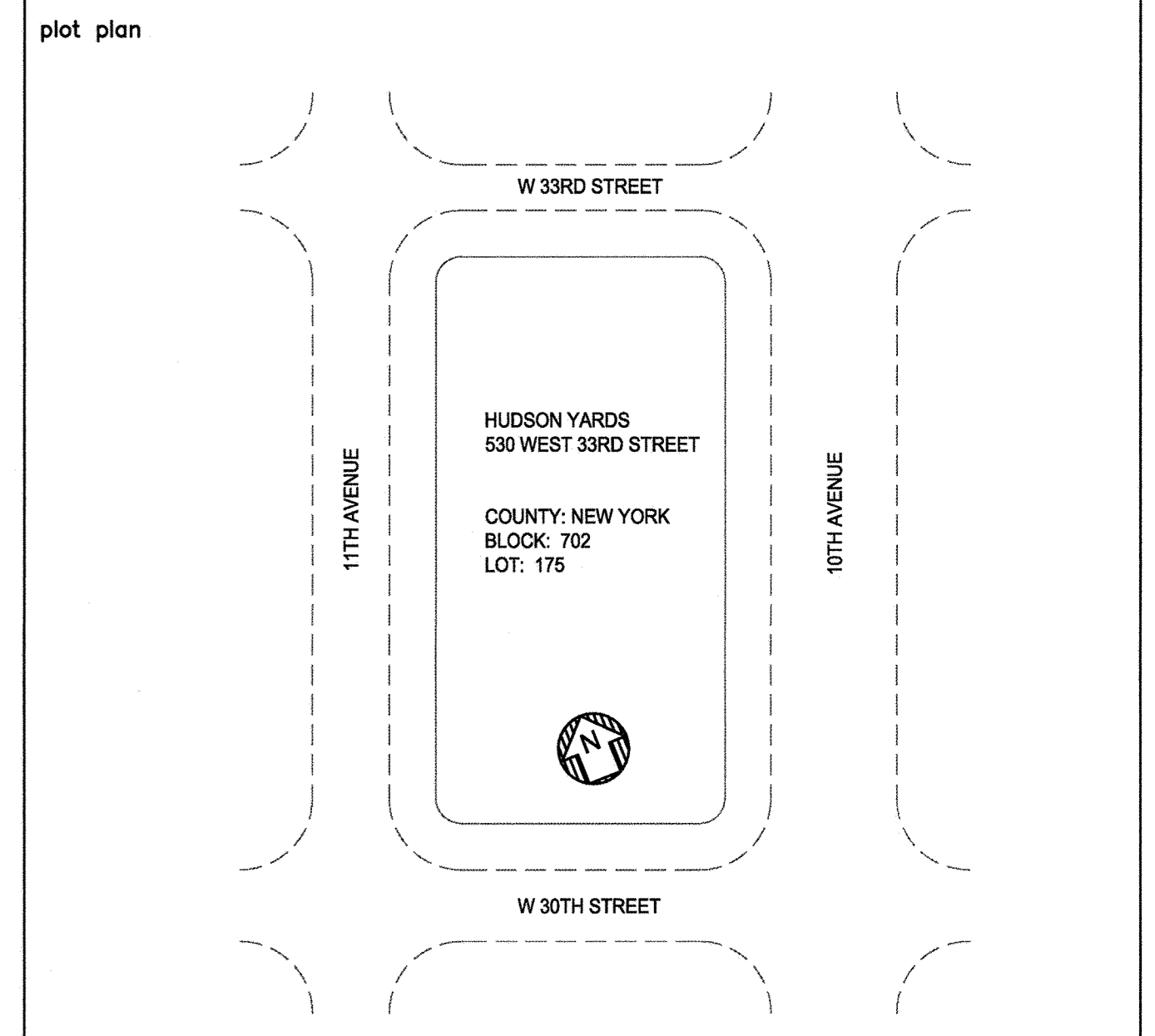
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HAROLD BLOCK MASTER PLUMBER LIC # 0195



REV. #	REVISION DESCRIPTION	DATE	BY
0	ISSUED FOR FILING	05/20/16	
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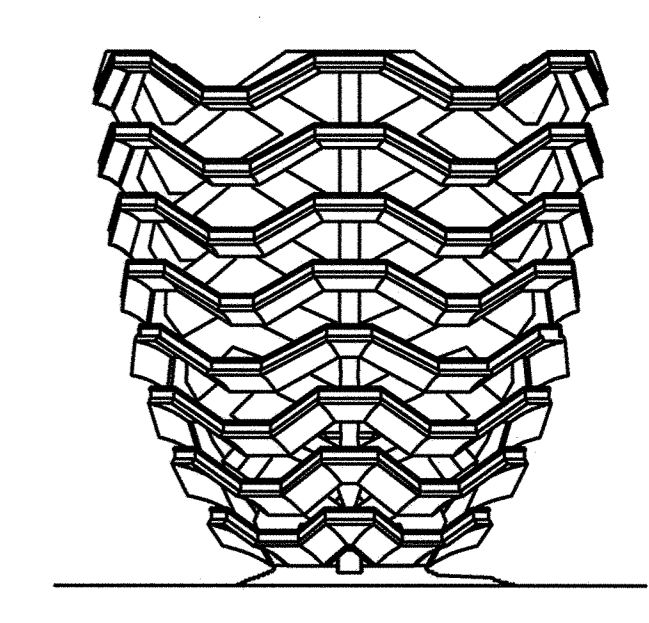
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HUDSON YARDS VESSEL
LEVEL 14 FLOOR PLAN
drawn by JA
date 5/06/16
scale 1/8" = 1'-0"
project no. 14956
sheet 0
114.00
DATE 5/20/16
BY [Signature]
1 OF 16

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

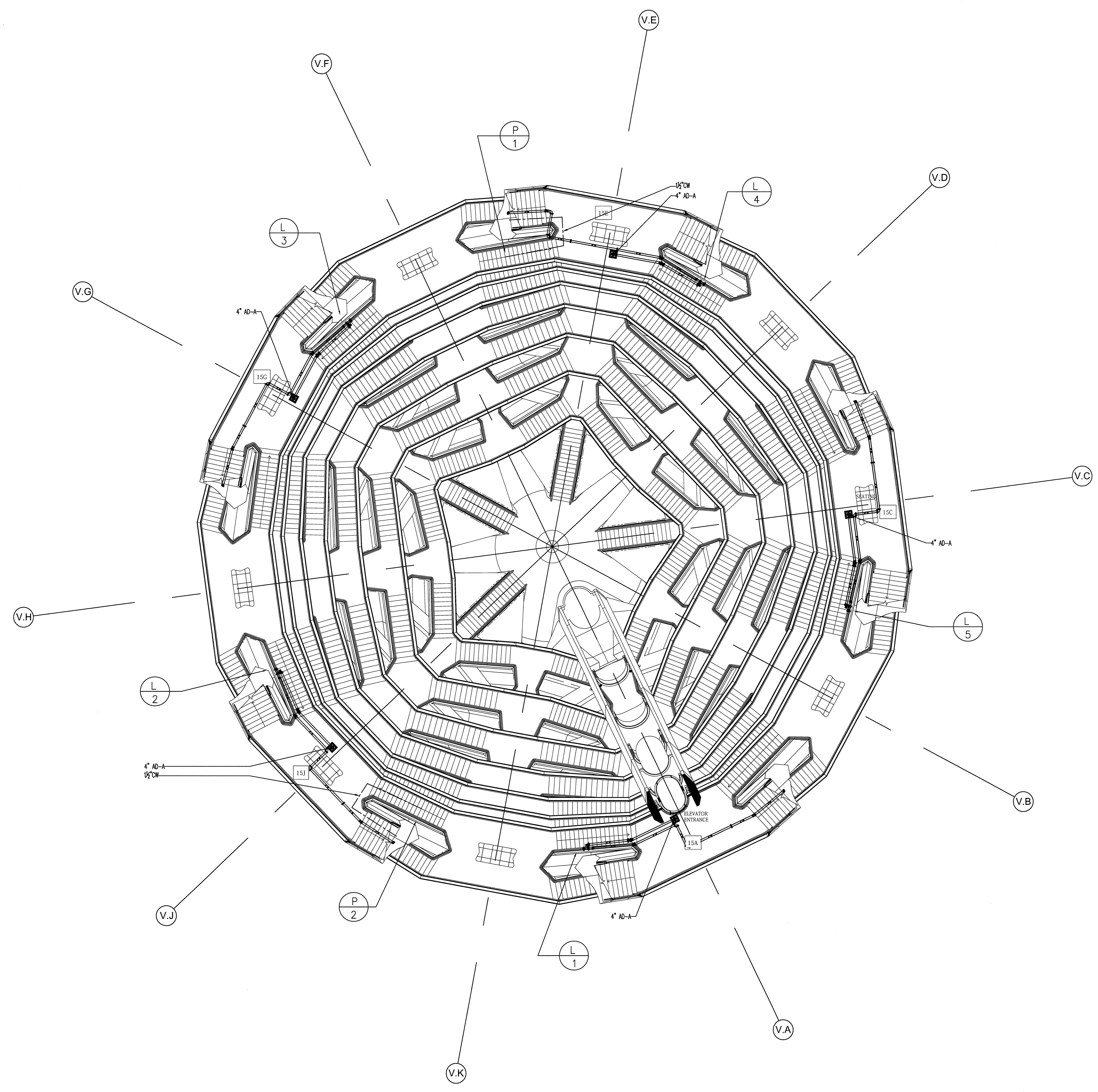
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



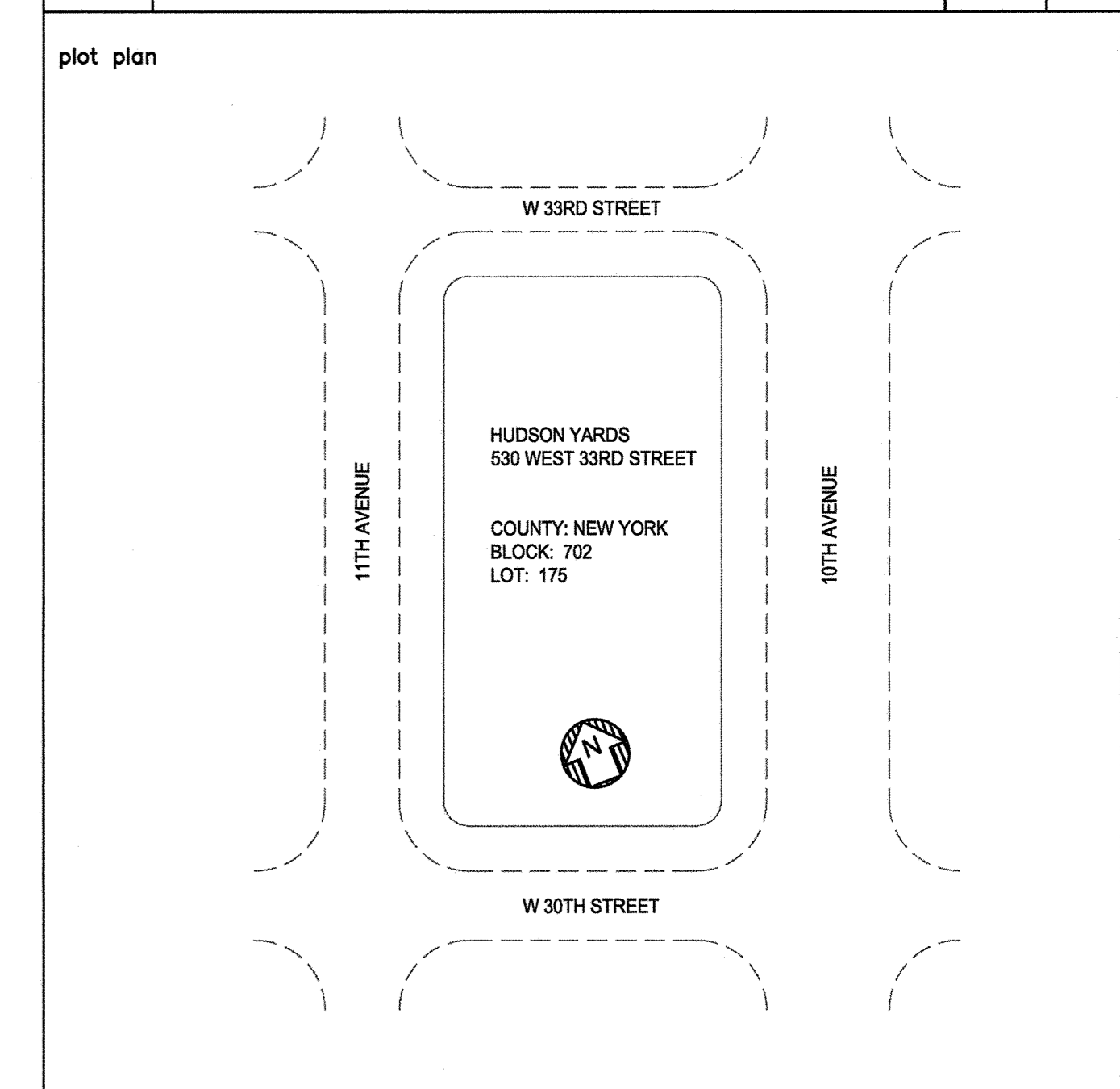
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HUDSON YARDS VESSEL

LEVEL 15 FLOOR PLAN

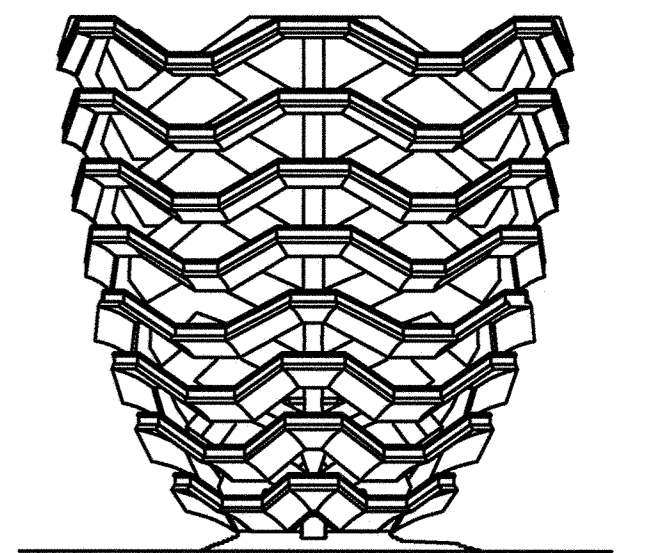
drawn by JA scale: 1/8" = 1'-0" checked by N.T.S. / P.P. dated 5/06/16 project no. 14986 0

price: \$115.00

12 OF 18

HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



RELATED COMPANIES

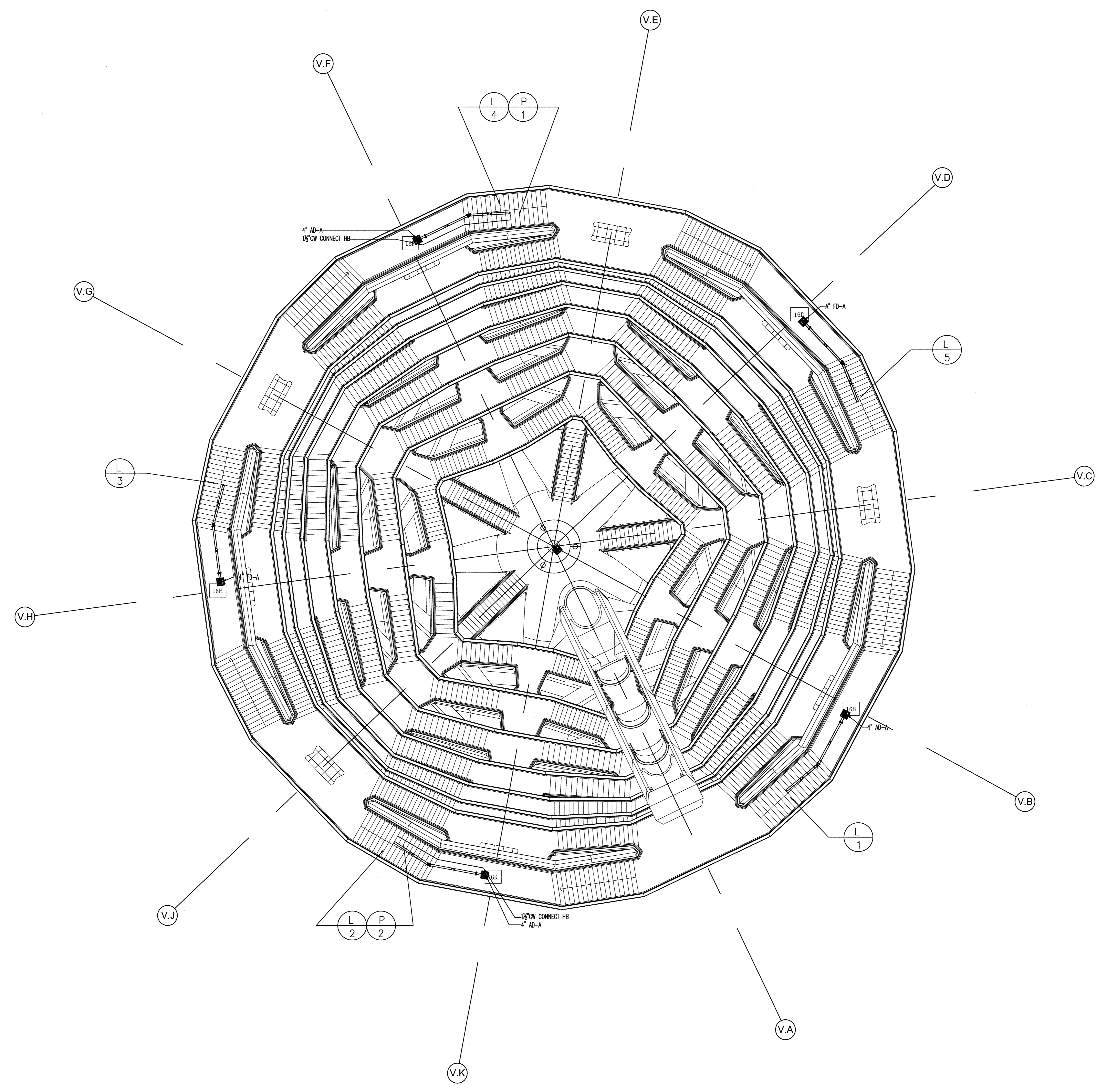
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



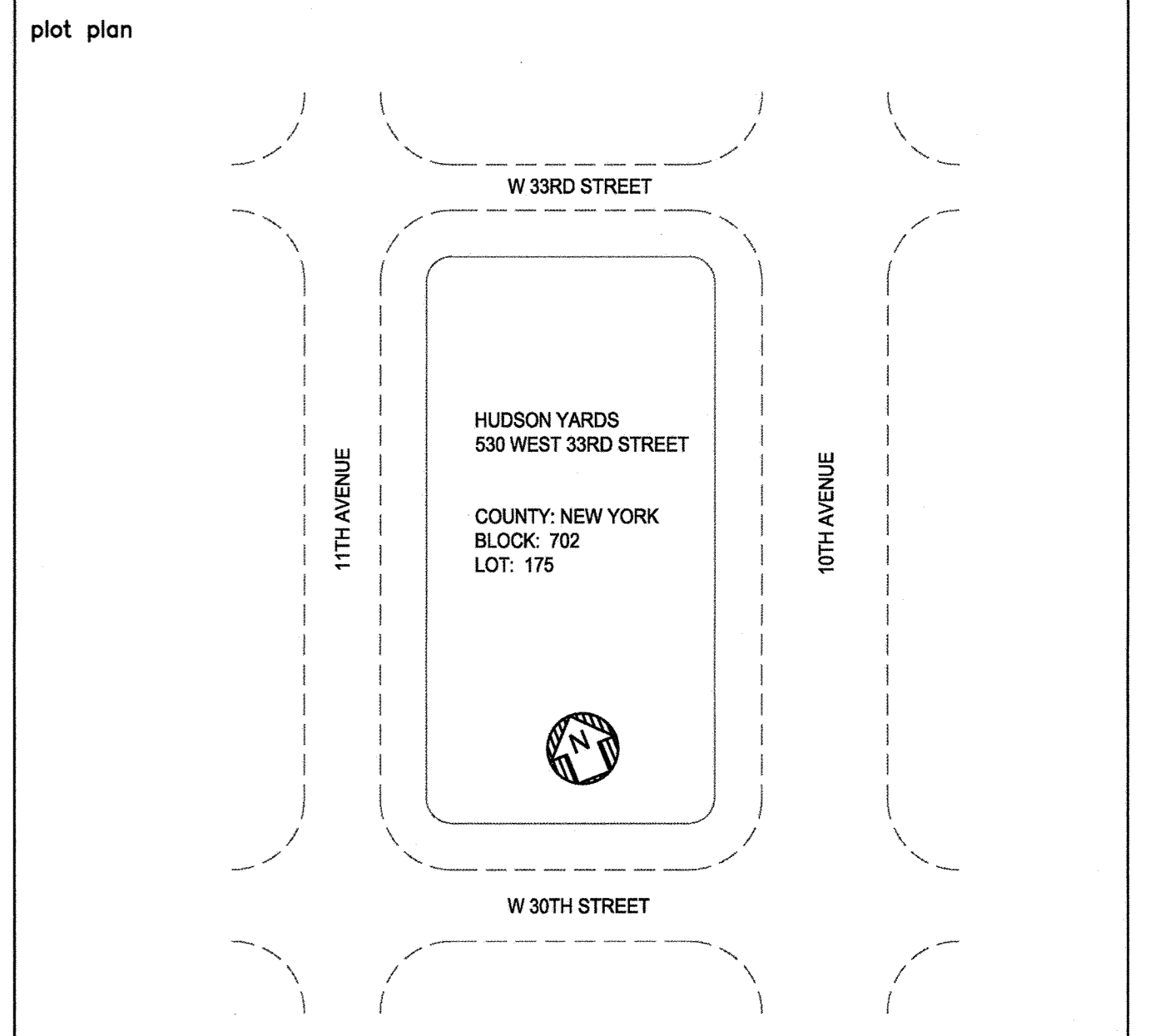
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HUDSON YARDS VESSEL

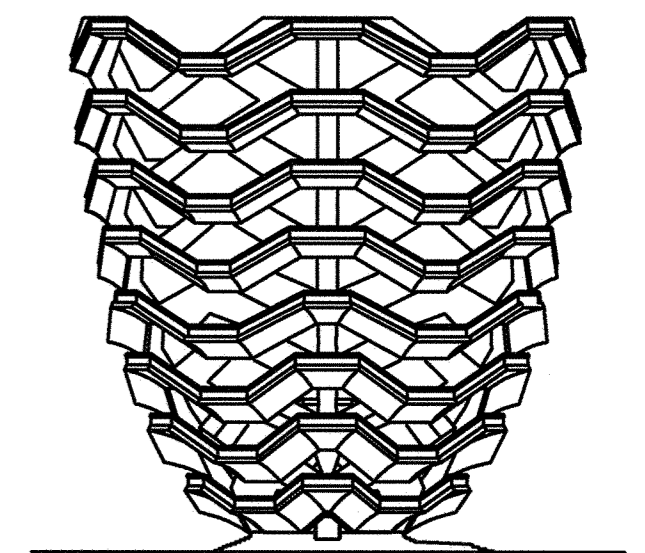
LEVEL 16 FLOOR PLAN

drawn by JA
checked by PIP
date 5/06/16
scale 1/8" = 1'-0"

PROJECT NO. 14886
REV. 0

116.00

13 OF 18



RELATED COMPANIES

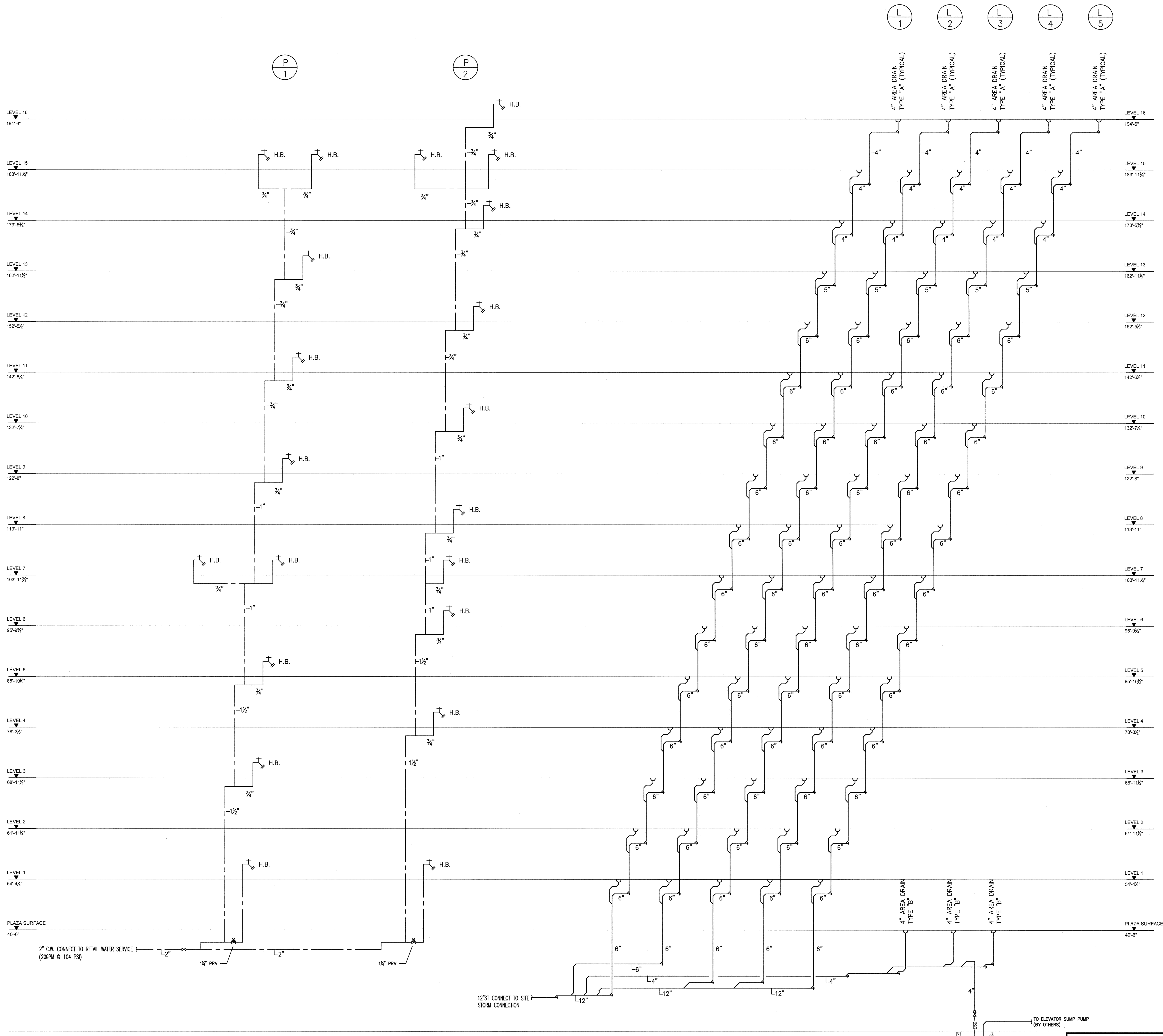
60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023
TEL: 212-801-1000



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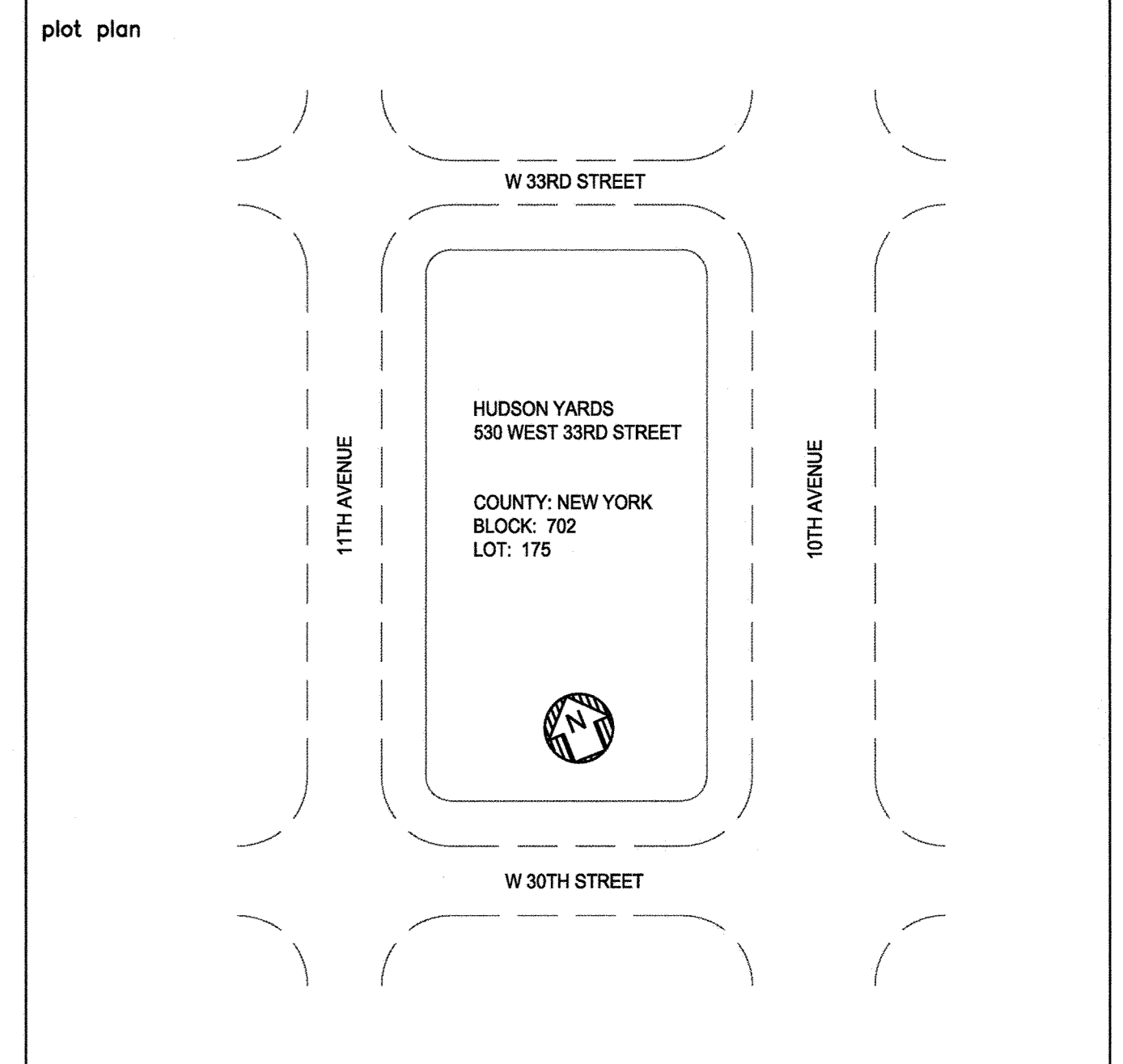
41 BOX STREET BROOKLYN, NEW YORK 11222 HAROLD BLOCK MASTER PLUMBER LIC # 0195
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WATER RISER DIAGRAM

STORM WATER RISER DIAGRAM

REV. #	REVISION DESCRIPTION	DATE	BY
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HUDSON YARDS VESSEL

STORM AND DOMESTIC RISER DIAGRAM

drawn by: JA
checked by: N.T.S.
date: 5/06/16

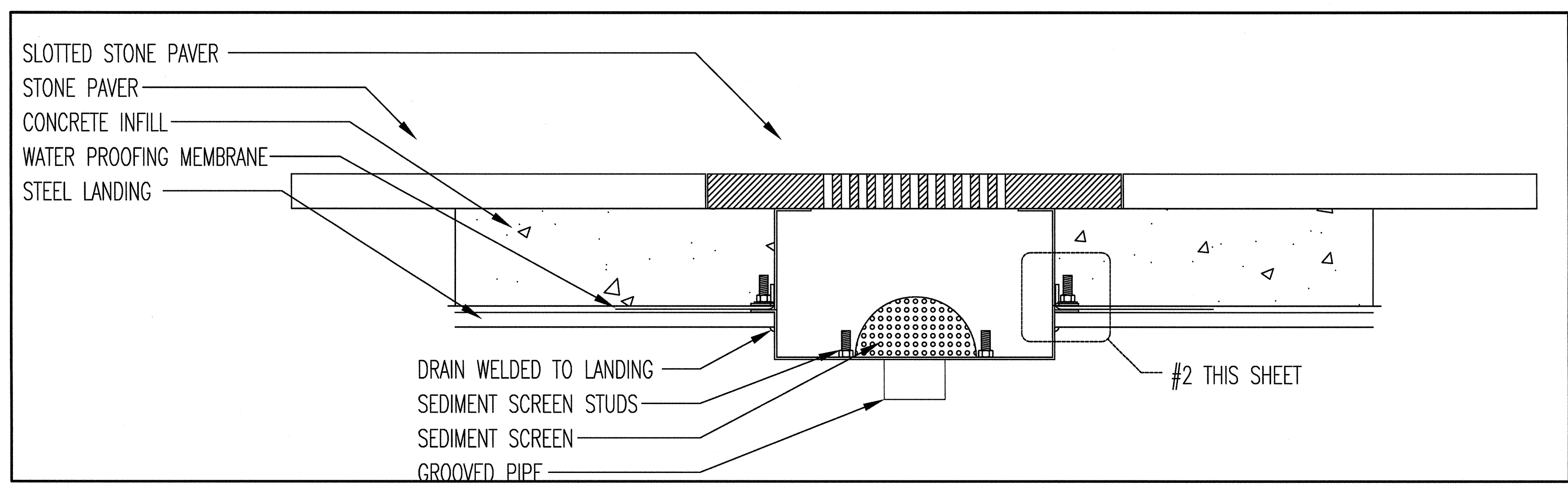
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PROJECT NO.: 14985

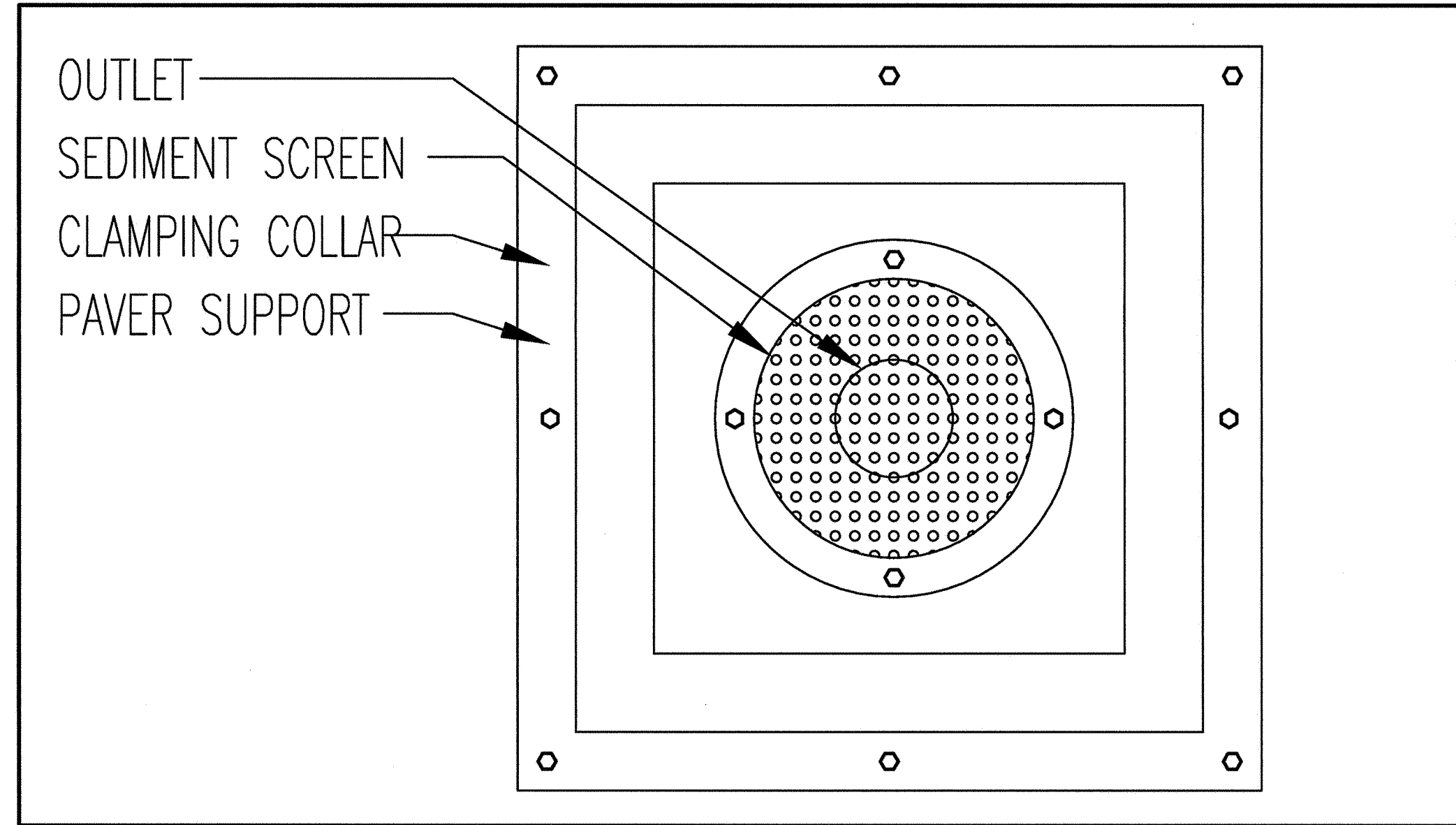
DATE: 0

PRICE: 200.00

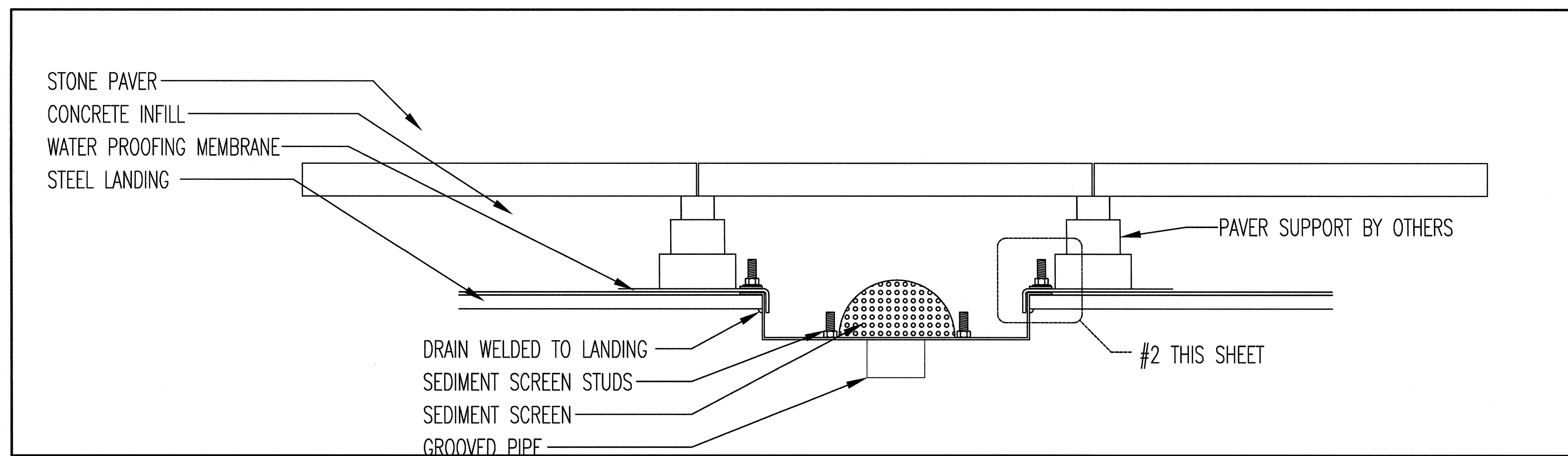
14 OF 16



1- ELEVATION VIEW DRAIN DETAIL FOR PAVERS ON MUD SET



3-PLAN VIEW DRAIN DETAIL



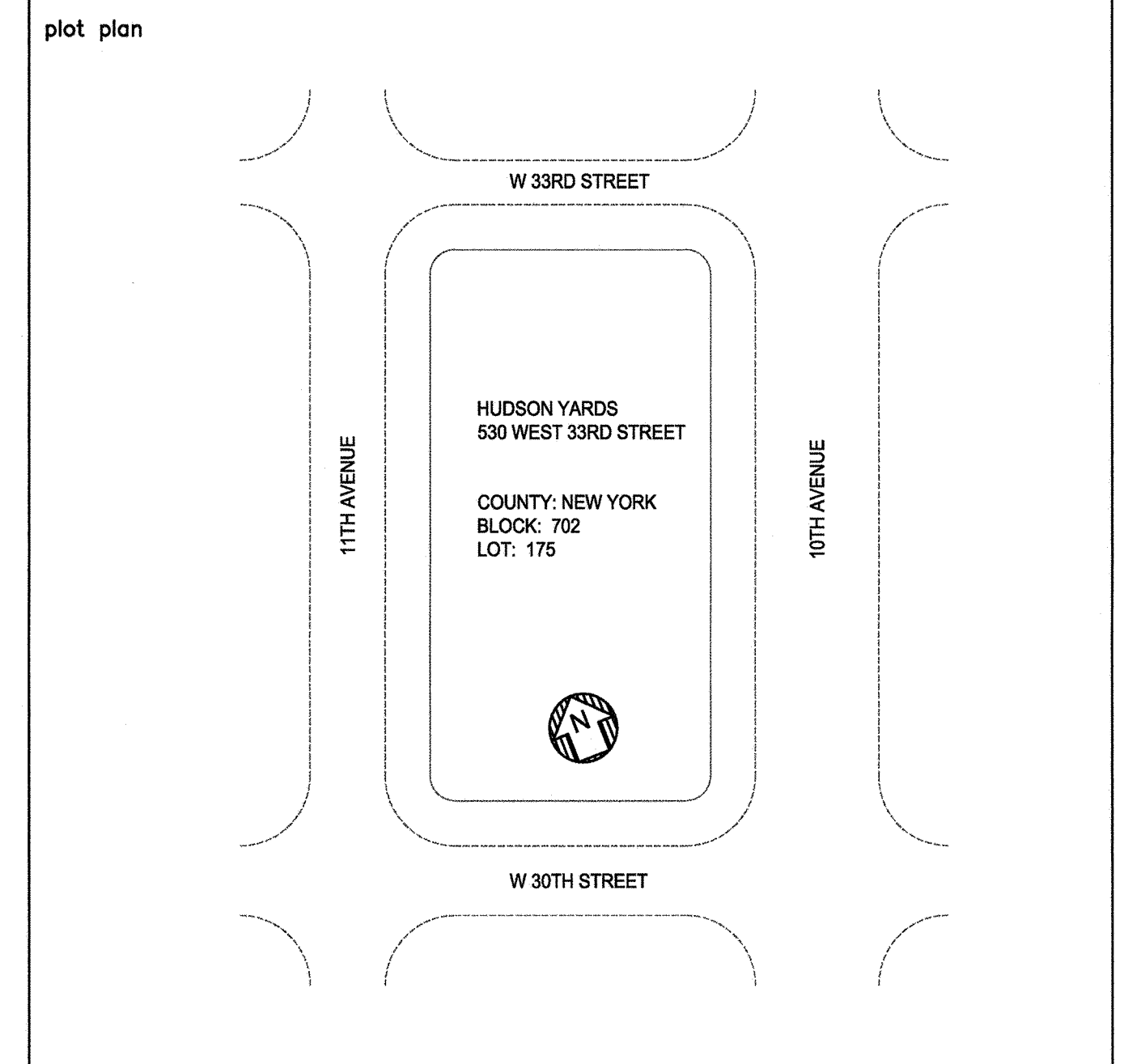
4- ELEVATION VIEW DRAIN DETAIL FOR PAVERS ON PEDESTALS

RELATED COMPANIES
 60 COLUMBUS CIRCLE
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 HAROLD BLOCK MASTER PLUMBER LIC # 0195

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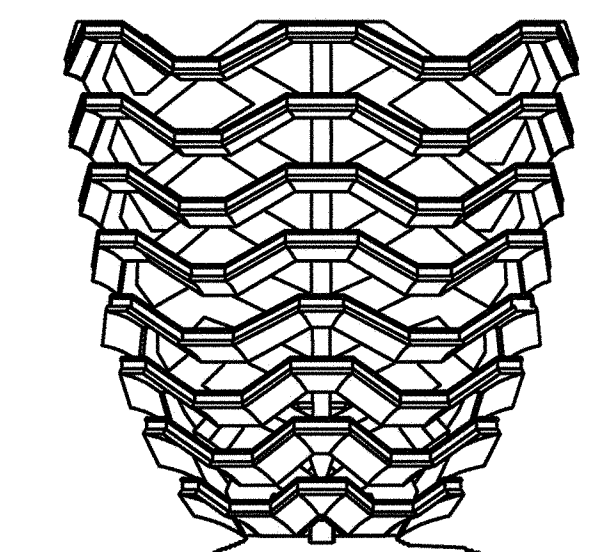
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HUDSON YARDS VESSEL

drawn by: JA
 scale: 1/4" = 1'-0"
 date: 5/06/16
 project no.: 14956
 sheet no.: 0
 15 OF 16

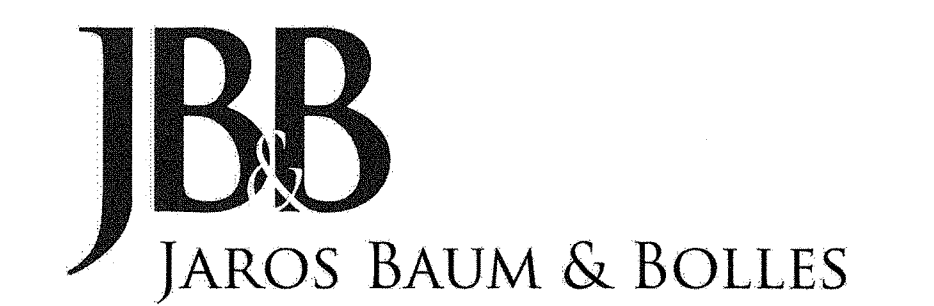
HUDSON YARDS VESSEL

530 WEST 33RD STREET, NEW YORK, NY



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BROOKLYN, NEW YORK 11222
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HAROLD BLOCK
MASTER PLUMBER LIC # 0195

PLUMBING PUMPS											
PUMP COMP.	ABBREVI.	MECH. SEAL	STAGES	HORIZONTAL SPLIT	WORKING PRESS.	H.P. (INDIVIDUAL PUMP)	H.P. (TOTAL PUMP SET)	R.P.M.	VOLTS	PHASE	NOTES
PEERLESS BELL & GOSSETT FLYGT SYNCFLOW GOULDS (ITT) PUMPS STANCOR AMT	(P) (B&G) (F) (S) (ITT) (ST) (AMT)										
ESP-1 ELEVATOR SUMP PUMP SLAB LEVEL		No REQUIRED	G.P.M. EACH PUMP	G.P.M. PER SET	PUMP HEAD (PSI)	MODEL No.	20	115/230	1		* SELF PRIMING ELEVATOR PIT

DESIGNATION	REQUIRED	DRAINS														REMARKS				
		AD-A	AD-B	AD-C	AD-D	AD-E	AD-F	AD-G	AD-H	AD-I	AD-J	AD-K	AD-L	AD-M	AD-N					
DESIGNATION																				
MODEL NO.																				
AD-A	CUSTOM	STAINLESS STEEL	ALL BRONZE	COPPER	BRASS	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	FRIB	

MATERIAL SCHEDULE			
SYSTEMS	PIPE	FITTINGS	JOINTS
LEADER DRAINS			
LEADERS - STACKS			
C.W.			

NOTE:
FREEZE PROTECTION AND FIBERGLASS TYPE INSULATION TO BE PROVIDED ON ALL STORM PIPING. RAYCHEM HEAT TRACE / ACS CONTROL SYSTEM, WITH ALL CONNECTORS. AMBIENT TEMPERATURE MONITORING SYSTEM, 5/16" OR AND 3/16" OR CABLE TO BE UTILIZED.

VALVE SPECIFICATION		LOCATION	
TYPE	WATTS FIG. NO.	SIZE	LOCATION
PRV	LFUBB	1/2"-2"	

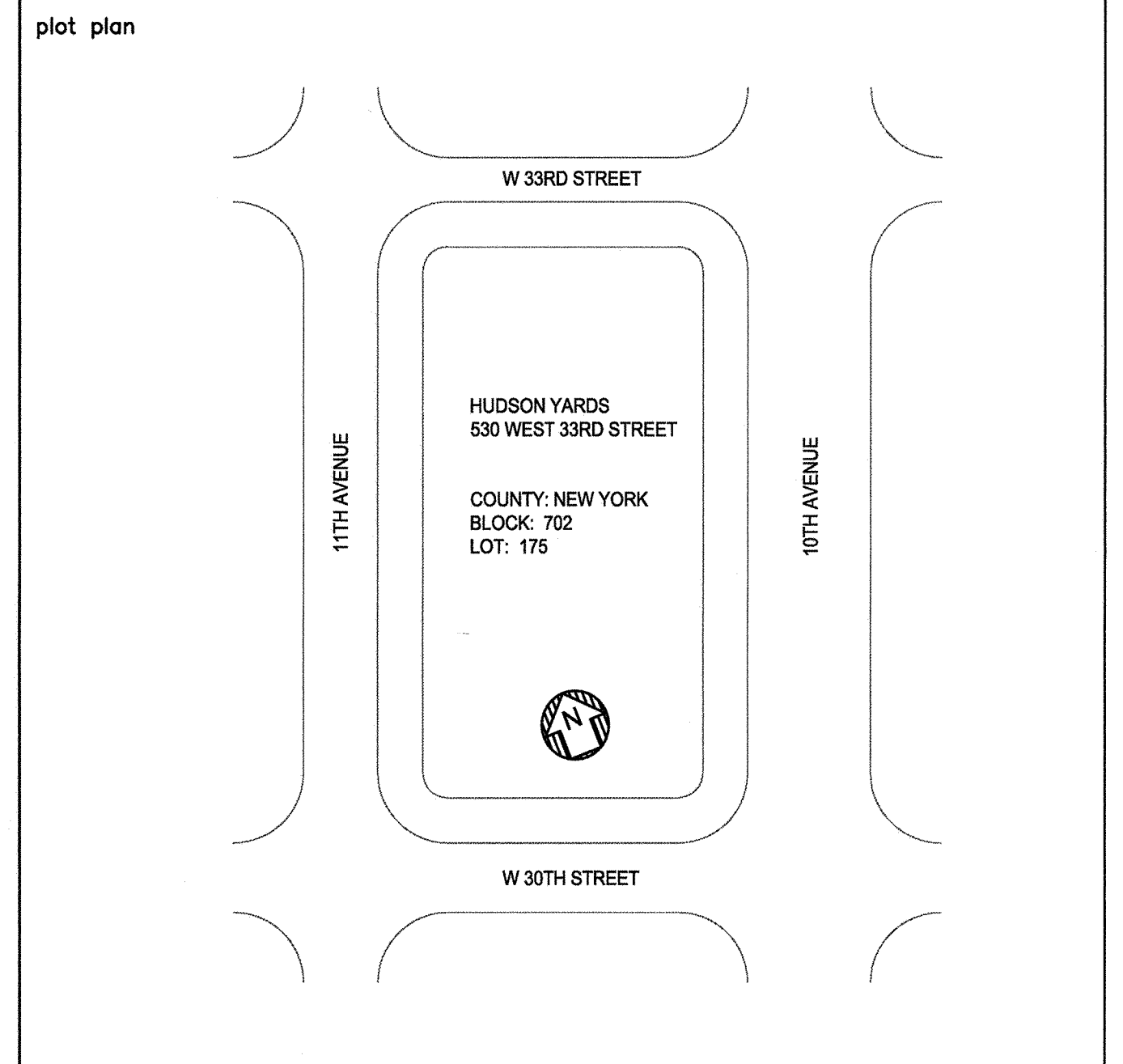
GENERAL SPECIFICATIONS

- 1.01 REFERENCE TO GENERAL CONDITIONS AND SUPPLEMENTAL INSTRUCTIONS:**
 - A. OBTAIN A COPY OF THE GENERAL CONDITIONS AND SUPPLEMENTAL INSTRUCTIONS TO THE CONTRACT DOCUMENTS AND PERFORM WORK WITH THE REQUIREMENTS CONTAINED THEREIN
- 1.02 SCOPE OF WORK:**
 - A. ALL WORK INDICATED ON THE DRAWINGS AND SPECIFICATIONS SHALL BE INCLUDED UNDER THE BASE BID, EXCEPT WHERE THERE IS SPECIFIC REFERENCE TO EXCLUSION AND INCORPORATION IN OTHER QUOTATIONS.
- 1.03 GENERAL:**
 - A. THE INTENT OF THE WORK IS INDICATED ON THE DRAWINGS AND DESCRIBED HEREINAFTER. NO CONSIDERATION WILL BE GRANTED FOR REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR REGARDING ACTUAL PHYSICAL CONDITIONS AT THE SITE.
 - B. COORDINATE WORK WITH ALL TRADES AND EXISTING CONDITIONS OF THE JOB SITE.
 - C. PROVIDE AS PART OF NEW WORK:
 1. SCAFFOLDING, RIGGING, AND HOISTING
 2. RUBBISH REMOVAL AND CLEANING
 3. CUTTING AND PATCHING
 4. SLEEVES, OPENINGS AND THE CORE DRILLING OF EXISTING SLABS
 5. CAULKING, FIREPROOFING, AND THE PACKING AND FILLING OF SLEEVES AND OPENINGS
 6. SHOP DRAWINGS AND "AS BUILT" DRAWINGS
 7. OPERATING AND MAINTENANCE INSTRUCTIONS
 8. OBTAINING ALL REQUIRED PERMITS, APPROVALS, ACCEPTANCE, FILING AND INSPECTION CERTIFICATES
 9. GUARANTEE ALL WORK, LABOR AND MATERIALS FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE
 10. VERIFYING EXISTING CONDITIONS AT THE PROJECT SITE
 11. SPARE PARTS AND TOOLS
 12. TESTS: OPERATION, PERFORMANCE AND CODE-REQUIRED TESTS
 13. PROTECTION OF WORK AND ADJACENT SPACES DURING CONSTRUCTION
 14. COORDINATION WITH OTHER TRADES
 15. IDENTIFICATION: VALVE TAGS, VALVE TAG SCHEDULES, AND PIPING IDENTIFICATION
 - D. DRAWINGS ARE DIAGRAMATIC AND THEREFORE DO NOT RELIEVE THIS CONTRACTOR FROM PROVIDING ALL WORK AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION ACCORDING TO THE REQUIREMENTS.
 - E. THE ARRANGEMENT, POSITION, AND CONNECTION OF PIPES, DRAINS, VALVES, ETC., INDICATED ON THE DRAWINGS SHALL BE TAKEN AS A CLOSE APPROXIMATION AND WHILE THEY SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, THE RIGHT IS RESERVED BY THE OWNER TO CHANGE THE LOCATIONS TO ACCOMMODATE ANY CONDITIONS WHICH MAY ARISE DURING THE PROGRESS OF THE WORK, WITHOUT ADDITIONAL COMPENSATION TO THIS CONTRACTOR FOR SUCH CHANGES, PROVIDED THAT THE CHANGES ARE REQUESTED PRIOR TO THE INSTALLATION OF THIS CONTRACTOR'S WORK.
 - F. THE RESPONSIBILITY FOR ACCURATELY LAYING OUT THE WORK RESTS WITH THIS CONTRACTOR. SHOULD IT BE FOUND THAT ANY OF HIS WORK IS SO LAID OUT THAT INTERFERENCE WILL OCCUR, HE SHALL SO REPORT THAT TO THE OWNER.
- 1.04 CODES, PERMITS, AND INSPECTIONS:**
 - A. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF NFPA, UL, FM, BSA, MEA, ETC., AND OTHER APPLICABLE CODES.
 - B. SECURE AND PAY FOR ALL NECESSARY APPROVALS, PERMITS, INSPECTIONS, CARTING, LEGAL DUMPING, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE ARCHITECT AND OWNER WITHOUT ANY ADDITIONAL COST TO THE OWNER.
 - C. PAY ALL FILING FEES TO OBTAIN RELEASE OF APPROVED PLANS.
 - D. PAY ROYALTIES OR FEES REQUIRED IN CONNECTION WITH THE USE OF PATENTED DEVICES OR SYSTEMS, AND SAVE THE OWNER, THE ARCHITECT, THE CONSULTING ENGINEER, AND THE TENANT HARMLESS FROM ANY CLAIMS OR LAWSUITS ARISING FROM SUCH USE, AND INDEMNIFY EACH THEREOF AGAINST ATTORNEYS' FEES IN CONNECTION THEREWITH.
 - E. PROVIDE ALL SIGNS REQUIRED BY THE MUNICIPAL AUTHORITIES.

PLUMBING SPECIFICATIONS

- 1.01 GENERAL:**
 - A. ALL PROVISIONS IN THE GENERAL SPECIFICATIONS ABOVE APPLY TO THE PLUMBING SPECIFICATIONS.
 - B. PROVIDE APPROVED BACKFLOW PREVENTION FOR CONNECTION TO NON-POTABLE FIXTURES AND EQUIPMENT AS REQUIRED BY CODE.
- 1.02 MATERIALS OF PIPING SYSTEMS:**
 - A. WATER PIPING SHALL BE SEAMLESS DRAWN OR EXTRUDED TYPE "L" COPPER TUBING, HARD TEMPER IN ACCORDANCE WITH ASTM SPECIFICATION B-88. JOINTS SHALL BE WROUGHT OR CAST BRASS SOLDERED FITTINGS AS MADE BY AMERICAN BRASS CO., OR AS APPROVED, OF STANDARD DESIGN. SOLDER JOINTS SHALL BE MADE WITH 95-5 (TIN AND ANTIMONY) SOLDER. NO OTHER TYPE OF SOLDER IS TO BE USED FOR ANY PURPOSE ON THE PROJECT.
 - B. STORM DRAINAGE PIPING SHALL BE STAINLESS STEEL AND CONFORM TO THE FOLLOWING:
 1. JOINTS BETWEEN LENGTHS OF S.S. PIPING SHALL BE THREADED, FLANGED, GROOVED OR WELDED AS SCHEDULED HEREIN BELOW OR ON THE CONSTRUCTION DOCUMENTS.
 2. MAKE SCHEDULED JOINTS WITHOUT THE USE OF LAMPWORK OR FILLER, EXCEPT "UTILITY COUPLER" OR PERMACEL TEFLON TAPE APPLIED TO MALE THREADS ONLY.
 3. FITTINGS FOR USE WITH GROOVED STAINLESS STEEL PIPE (G.S.S.) SHALL BE CAST OR SEGMENTALLY WELDED, SCHEDULED TO MATCH THE PIPING MATERIAL THE FITTINGS WILL BE CONNECTED TO.
 4. MECHANICAL COUPLINGS MAY BE USED IN LIEU OF THREADED STAINLESS STEEL FITTINGS.
 5. MECHANICAL COUPLINGS SHALL CONSIST OF TWO (2) PIECES OF STAINLESS STEEL HOUSINGS WITH ANGLED PADS, COUPLING GASKETS SHALL BE AN EPDM SYNTHETIC RUBBER. COUPLING BOLTS AND NUTS SHALL BE HEAT-TREATED CARBON STEEL, TRACKHEAD DESIGN CONFORMING TO PHYSICAL PROPERTIES OF ASTM A-183. ALL MECHANICAL COUPLINGS FOR STAINLESS STEEL PIPE SHALL BE STYLE 489 AS MANUFACTURED BY VITCALIC COMPANY OF AMERICA.
 6. INSTALLATION OF MECHANICAL COUPLINGS SHALL BE PER MANUFACTURER'S LATEST RECOMMENDATIONS.
 7. SUPPLY GROOVED FULL-FLOW STANDARD RADIUS FITTINGS WITH ROLL-GROOVED ENDS.
- 1.03 VALVES:**
 - A. BALL VALVES SHALL BE ALL BRASS OR BRONZE CONSTRUCTION WITH REPLACEABLE TEFLON SEAT RING, TWO PIECE UNION OR THREE-PIECE BOLTED DESIGN AS SCHEDULED HEREIN.
 - B. THREADED VALVES USED IN BRAZED OR SOLDERED PIPING SYSTEMS SHALL BE FITTED WITH ADAPTERS. WHEN BRAZING, THREE-PIECE DESIGN SHALL BE USED AND REINFORCED TEFLON SEATS MUST BE REMOVED PRIOR TO BRAZING.
 - C. BALL VALVES SHALL BE TWO-PIECE TYPE WITH ADJUSTABLE STEM PACKING USING A THREADED PACKING NUT. VALVES SHALL PROVIDE POSITIVE SHUTOFF.
 - D. DRAIN VALVES (AT RISER HEELS AND LOW POINTS): BALL VALVES TO BE USED AS DRAIN VALVES AT ALL LOW POINTS IN WATER PIPING. PROVIDE A 3/4 IN. (19 MM) BALL VALVE WITH MALE THREADED NIPPLE FOR HOSE CONNECTION WITH 3/4 IN. (19 MM) HOSE CAP TO PROTECT HOSE THREADS AND CHAIN APOLLO 70LF-HC SERIES
- 1.04 INSULATION:**
 - A. ALL INSULATION SHALL BE DONE BY AN APPROVED SUBCONTRACTOR SPECIALIZING IN THIS TYPE OF WORK. INSULATION SHALL BE OWENS-CORNING FIBERGLAS, OR AS APPROVED.
 - B. ENDS OF PIPE INSULATION SHALL BE SEALED OFF AT THE VALVES, FITTINGS, FLANGES AND 21 FEET OF CONTINUOUS RUNS WITH BF 85-20 OR IC-225.
 - C. ALL VAPOR BARRIERS SHALL BE SEALED AND CONTINUOUS THROUGH HANGERS, SLEEVES, ETC.
 - D. WHERE MANUFACTURED, USE FACTORY PREMOLDED GLASS FIBER COVERS ON ALL FITTINGS AND VALVES. FOR HOT SERVICE APPLICATIONS, INSULATE FITTINGS WITH OC 100 INSULATING CEMENT TO A THICKNESS EQUAL TO THE ADJOINING INSULATION.
- 1.05 WATER PIPING CONSTRUCTION DETAILS:**
 - A. INSTALL APPROVED TYPE OF VACUUM BREAKERS AND/OR CHECK VALVES OR BACKFLOW PREVENTERS, AS HEREIN SPECIFIED, ON ALL EQUIPMENT AND FIXTURE CONNECTIONS REQUIRED BY CODE, INDICATED ON THE DRAWINGS, AS SPECIFIED, OR AS REQUIRED FOR THE PROPER FUNCTIONING OF THE EQUIPMENT.
- 1.06 TESTS:**
 - A. SUBJECT THE DRAINS, WASTE, TO A WATER TEST IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS. THE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE EQUIVALENT TO AT LEAST A TEN FOOT OF HEAD OF WATER, AFTER FILLING, DISCONNECT WATER SUPPLY AND LET IT STAND FOR TWO HOURS UNDER TEST, DURING WHICH TIME THERE SHALL BE NO LOSS OR LEAKAGE.
 - B. TEST ALL INTERIOR WATER DISTRIBUTION SYSTEMS TO A PRESSURE OF AT LEAST 50 LBS. GAUGE HIGHER THAN THEIR NORMAL OPERATING STATIC PRESSURE; MINIMUM TEST 150 LBS. GAUGE. RUN TEST FOR TWO HOURS WITH NO LOSS IN PRESSURE.
 - C. FURNISH AND PAY FOR ALL DEVICES, MATERIALS, SUPPLIES AND LABOR REQUIRED IN CONNECTION WITH TESTS. MAKE ALL TESTS IN THE PRESENCE, AND TO THE SATISFACTION OF THE OWNER, ENGINEER, PLUMBING AND OTHER INSPECTORS OF THE AGENCIES HAVING JURISDICTION, AND ANY APPLICABLE INSURANCE ASSOCIATIONS AND PUBLIC UTILITIES. REPAIR, OR IF REQUIRED BY THE ENGINEER, REPLACE DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE OWNER. REPEAT TESTS AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY. RESTORE TO ITS ORIGINAL CONDITION ANY WORK DAMAGED OR DISTURBED BY TESTS, ENGAGING THE ORIGINAL TRADES TO DO THE RESTORATION WORK. NOTIFY THE OWNER, ENGINEER, AND INSPECTORS HAVING JURISDICTION AT LEAST 48 HOURS IN ADVANCE OF MAKING THE REQUIRED TESTS SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS THE SAME.
- 1.07 TESTS:**
 - A. SUBJECT THE DRAINS, WASTE, TO A WATER TEST IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS. THE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE EQUIVALENT TO AT LEAST A TEN FOOT OF HEAD OF WATER, AFTER FILLING, DISCONNECT WATER SUPPLY AND LET IT STAND FOR TWO HOURS UNDER TEST, DURING WHICH TIME THERE SHALL BE NO LOSS OR LEAKAGE.
 - B. TEST ALL INTERIOR WATER DISTRIBUTION SYSTEMS TO A PRESSURE OF AT LEAST 50 LBS. GAUGE HIGHER THAN THEIR NORMAL OPERATING STATIC PRESSURE; MINIMUM TEST 150 LBS. GAUGE. RUN TEST FOR TWO HOURS WITH NO LOSS IN PRESSURE.
 - C. FURNISH AND PAY FOR ALL DEVICES, MATERIALS, SUPPLIES AND LABOR REQUIRED IN CONNECTION WITH TESTS. MAKE ALL TESTS IN THE PRESENCE, AND TO THE SATISFACTION OF THE OWNER, ENGINEER, PLUMBING AND OTHER INSPECTORS OF THE AGENCIES HAVING JURISDICTION, AND ANY APPLICABLE INSURANCE ASSOCIATIONS AND PUBLIC UTILITIES. REPAIR, OR IF REQUIRED BY THE ENGINEER, REPLACE DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE OWNER. REPEAT TESTS AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY. RESTORE TO ITS ORIGINAL CONDITION ANY WORK DAMAGED OR DISTURBED BY TESTS, ENGAGING THE ORIGINAL TRADES TO DO THE RESTORATION WORK. NOTIFY THE OWNER, ENGINEER, AND INSPECTORS HAVING JURISDICTION AT LEAST 48 HOURS IN ADVANCE OF MAKING THE REQUIRED TESTS SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS THE SAME.
- 1.08 GENERAL INSTALLATION OF PIPE:**
 - A. MAINTAIN A MINIMUM OF 1/8" FALL PER FOOT ON ALL DRAINAGE LINES 3" AND LARGER, MAINTAIN A MIN. 1/4" FALL PER FOOT ON ALL DRAINAGE LINES LESS THAN 3".
 - B. USE REDUCING FITTINGS, UNLESS OTHERWISE APPROVED IN SPECIAL CASES, IN MAKING REDUCTION IN SIZE OF PIPE. BUSHINGS WILL NOT BE ALLOWED UNLESS SPECIFICALLY APPROVED.
- 1.05 TESTS:**
 - A. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP AS WELL AS DAMAGE TO THE WORK OF OTHER TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR THE DURATION OF STIPULATED GUARANTEE PERIODS. THE DURATION OF GUARANTEE PERIODS SHALL BE ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION BY THE OWNER, UNLESS A MORE STRINGENT PERIOD IS STIPULATED ELSEWHERE.
- 1.06 GUARANTEES AND CERTIFICATIONS:**
 - A. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP AS WELL AS DAMAGE TO THE WORK OF OTHER TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR THE DURATION OF STIPULATED GUARANTEE PERIODS. THE DURATION OF GUARANTEE PERIODS SHALL BE ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION BY THE OWNER, UNLESS A MORE STRINGENT PERIOD IS STIPULATED ELSEWHERE.
- 1.07 ENGINEER'S REVIEW, SHOP DRAWINGS, AND CERTIFICATIONS:**
 - A. PREPARE AND SUBMIT DETAILED SHOP DRAWINGS. THE ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES IS ONLY FOR THE CONVENIENCE OF THE OWNER IN FOLLOWING THE WORK AND DOES NOT RELIEVE THIS TRADE OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT BE CONSIDERED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THIS TRADE OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH HAVE BEEN OMITTED FROM THE SHOP DRAWING SUBMITTALS.
 - B. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD UNTIL THE ENGINEER HAS REVIEWED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWINGS. PRIOR TO ASSEMBLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED: SCALED FLOOR PLAN AND CEILING DRAWINGS WITH DIMENSIONED LOCATIONS OF ALL PIPING AND EQUIPMENT INCLUDING SIZES, ELEVATIONS, AND APPROPRIATE INDICATION OF COORDINATION BETWEEN STRUCTURAL AND MECHANICAL ELEMENTS; MANUFACTURER'S CATALOGUE OF ALL EQUIPMENT TO BE USED; SAMPLES OF ALL DEVICES, WHICH WILL BE CLEARLY VISIBLE TO VIEW. ALL SUBMITTALS SHALL BE PROPERLY IDENTIFIED WITH PROJECT NAME, ARCHITECT, ENGINEER, AND SUBCONTRACTOR'S NAME, ADDRESS, AND TELEPHONE NUMBER. PROVIDE CLEAR DETAILED REPRODUCIBLE "AS-BUILT" DRAWINGS UPON COMPLETION OF WORK AND PROVIDE SETS OF THE SAME TO LANDLORD AS DIRECTED.
 - C. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES WITH REASONABLE PROMPTNESS AND WILL RETURN THEM TO THE CONTRACTOR STAMPED TO INDICATE THE APPROPRIATE ACTION AS FOLLOWS:
 1. "NO EXCEPTIONS TAKEN" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE CONTRACT DOCUMENTS.
 2. "MAKE CORRECTIONS NOTED" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL SHALL BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR SHALL RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT".
 3. "REVISE AND RESUBMIT" MEANS THAT THE CONTRACTOR MUST COMPLY WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND RESUBMIT BEFORE FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.
 4. "REJECTED" MEANS THAT THE SUBMITTAL DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS AND THAT FABRICATION, MANUFACTURE OR CONSTRUCTION SHALL NOT PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

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HUDSON YARDS VESSEL

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