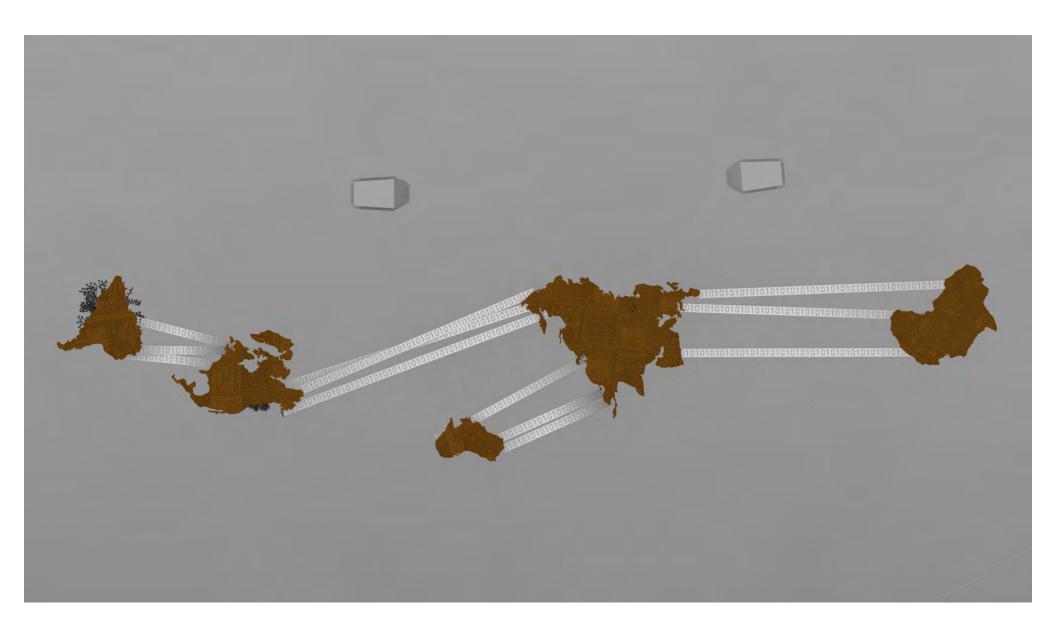


Phase I: Conceptual Design Proposal

06.13.2018

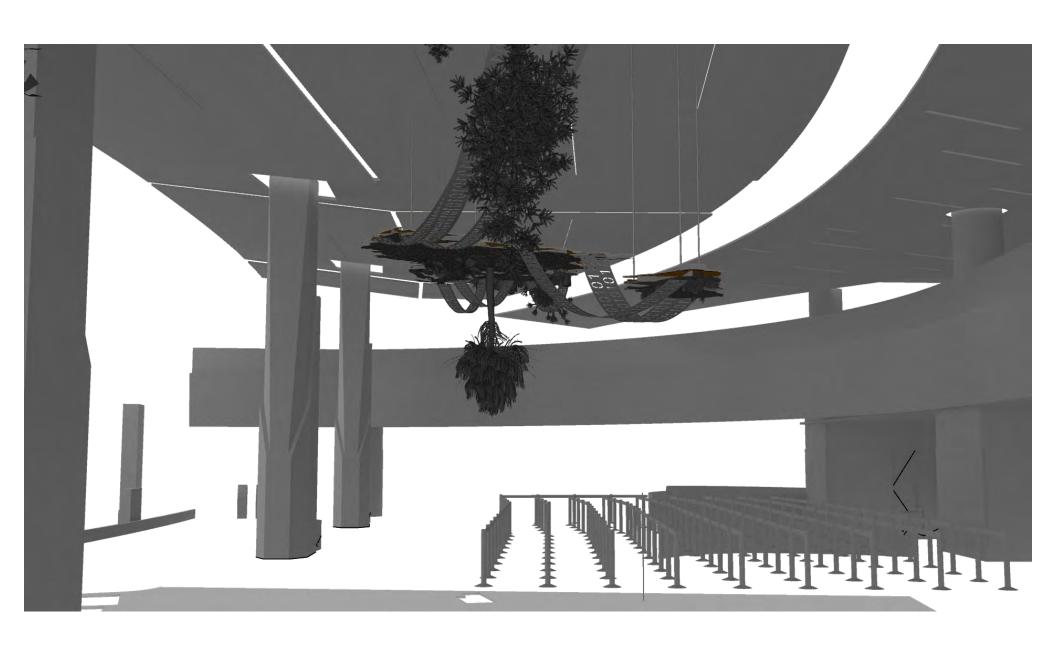
Plan View



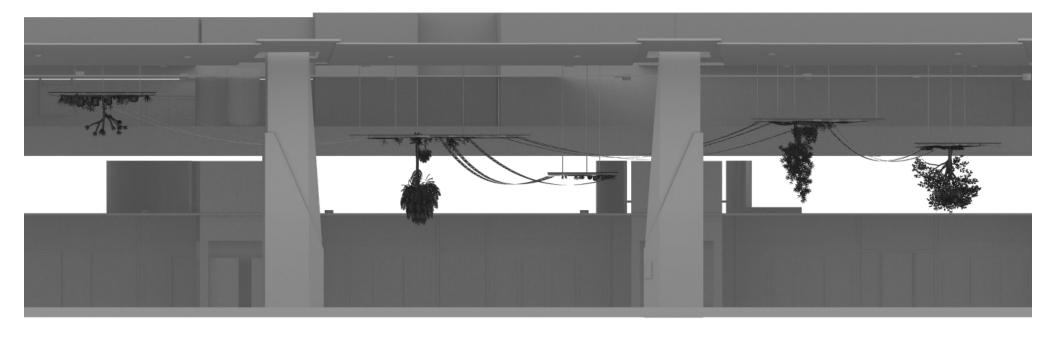
Mezzanine view



Perspective view from terminal floor

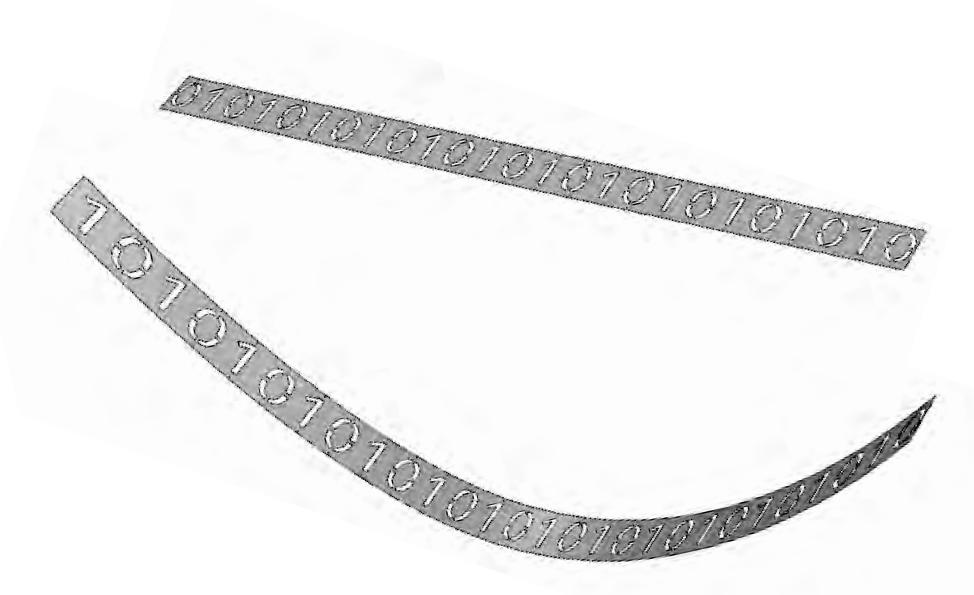


Elevation view



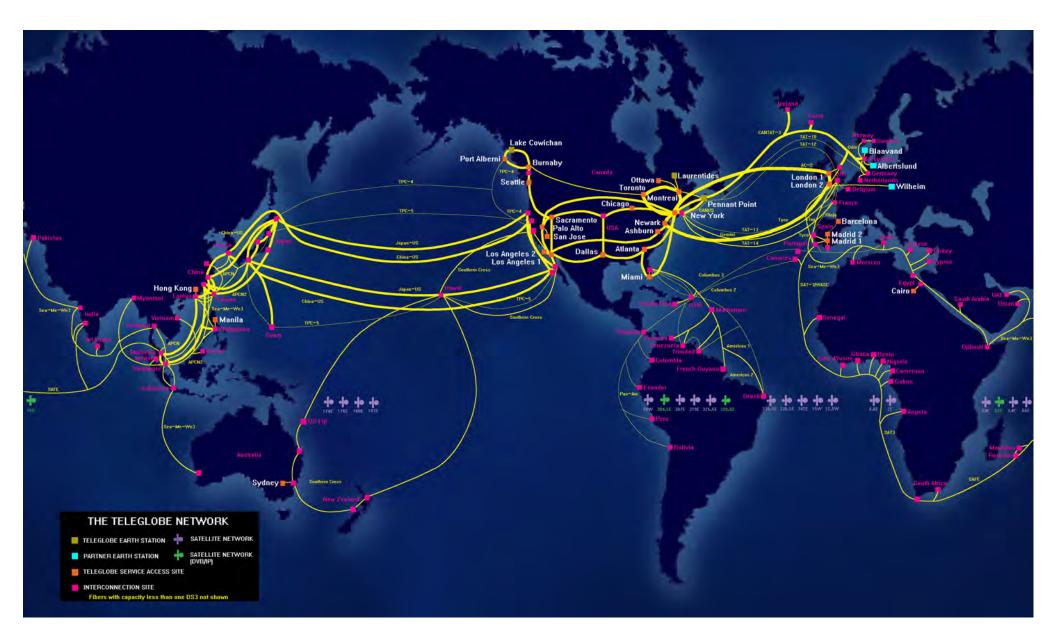
Binary code bands, connecting the islands

Stainless steel bands with laser-cut binary code represent the ethernet connecting the globe's land masses. Zeros and ones will contain an hidden messages, with quotes from Silicon Valley's technological pioneers.

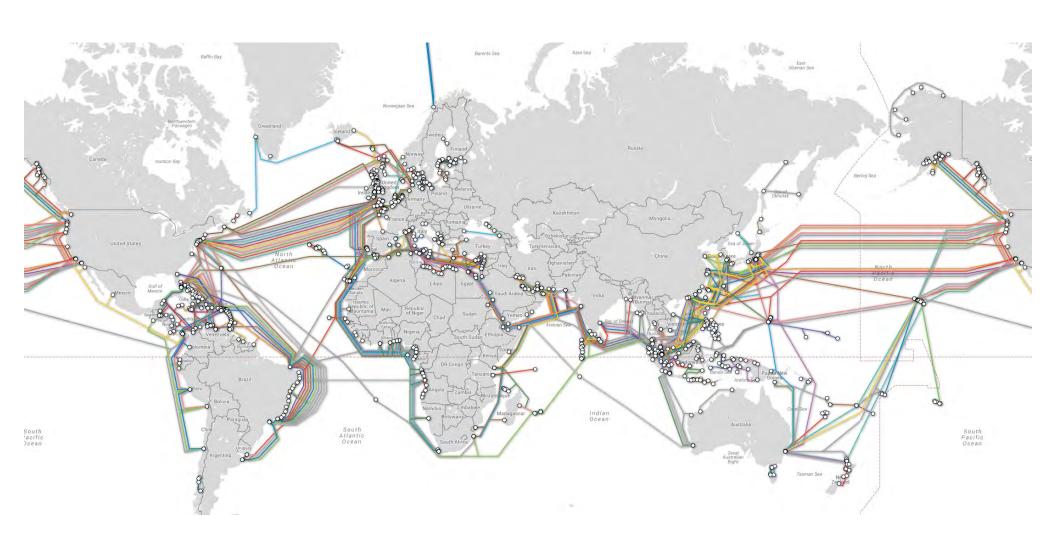


Reference images: The internet's undersea connections

International submarine network of fibre-optic cables, wires we rely on to stay connected.



Concept: The internet's undersea connections; SFO as a hub of global connectivity



Reference image: Authagraph

The Authagraph is the most accurate flat representation of earth's land masses, aiming to fix the distortion in the most commonly referenced "Mercator Projection".



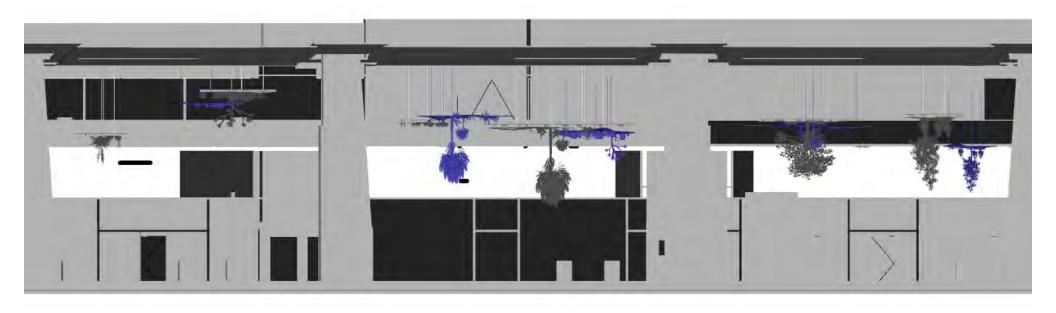
#### Value Engineering

- The total surface area of the islands has increased approximately 24% overall.
- A sixth island is proposed to to balance the distribution of masses evenly among the columns, and include all of earth's continental land masses.
- The continents were resized to proportions based on the Authograph, a flat map which corrects the distortions of the Mercator projection. In some cases, the more feathered edges were extended to increase the overall footprint.

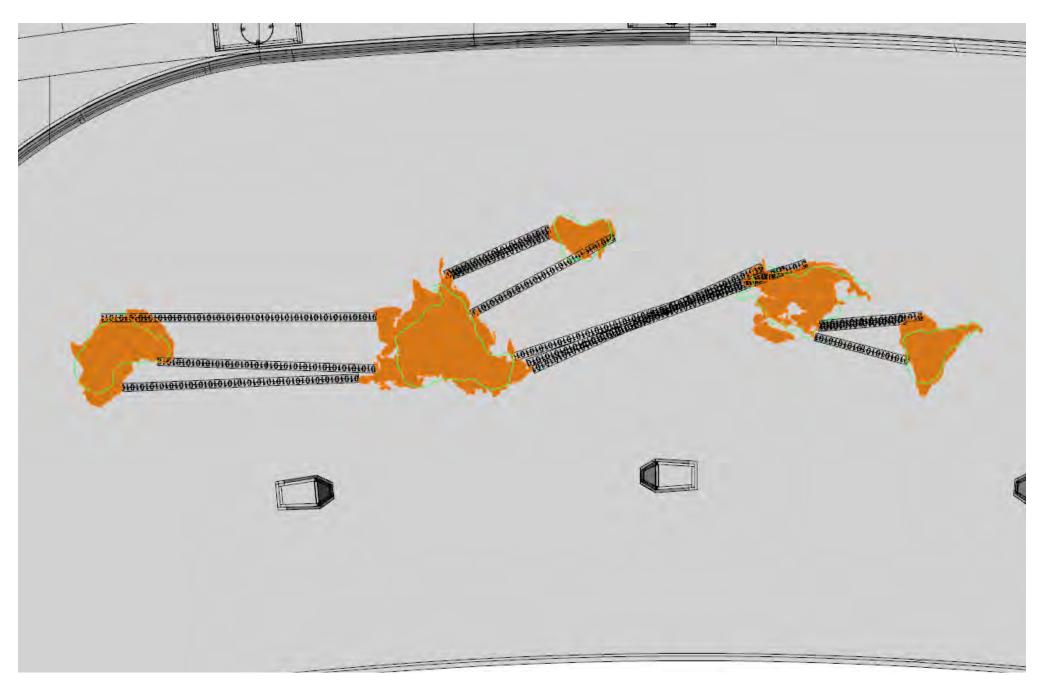
- Tree height increases:	Original	Revised
Sequoia	6'3"	9'
Oak Woodlands	3'9"	8'
Joshua Tree	4'6"	5' 2"
Palm Tree	9'10"	10'6"

- Stainless steel bands of "binary code" connect the islands in a pattern based on maps of under water fiber-optic cables. We believe this is the best value engineering available, as it unifies the space at an additional cost of under \$5000. The number of bands could be increased, if desired, in a cost-effective manner.

Elevation view with scale increase



Plan view with scale increase



Africa | California Desert

Overall dimensions: 12' 9" x 12'

Tree height: 5'2"

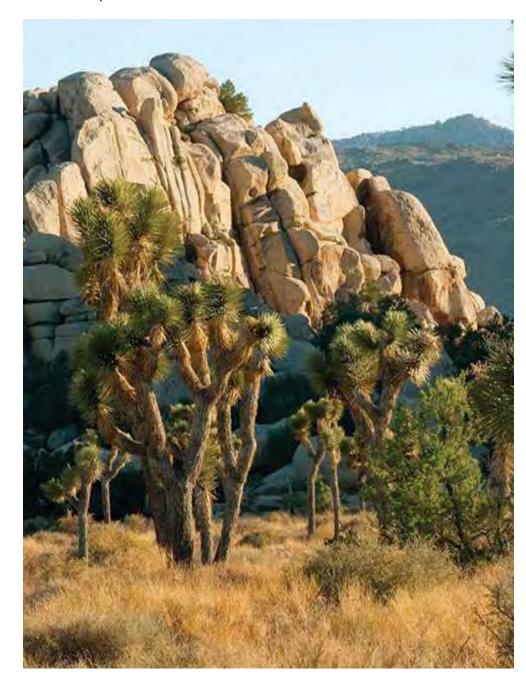
top view bottom view

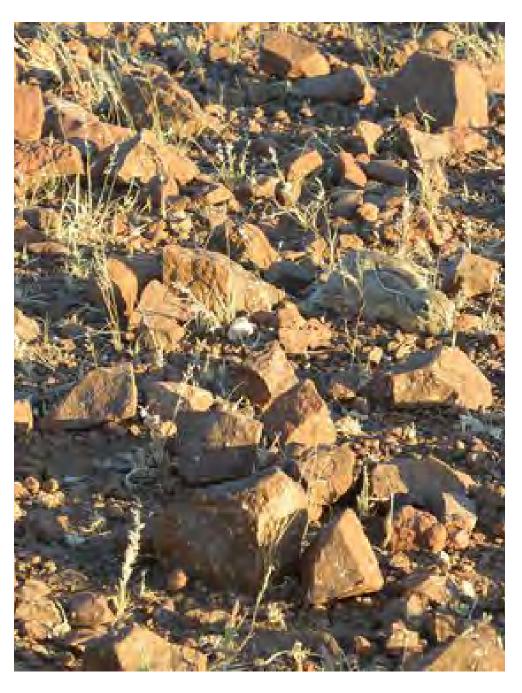


liz glynn studio

**SFAC /** SFO Terminal One Suspended Sculpture

### Africa | California Desert



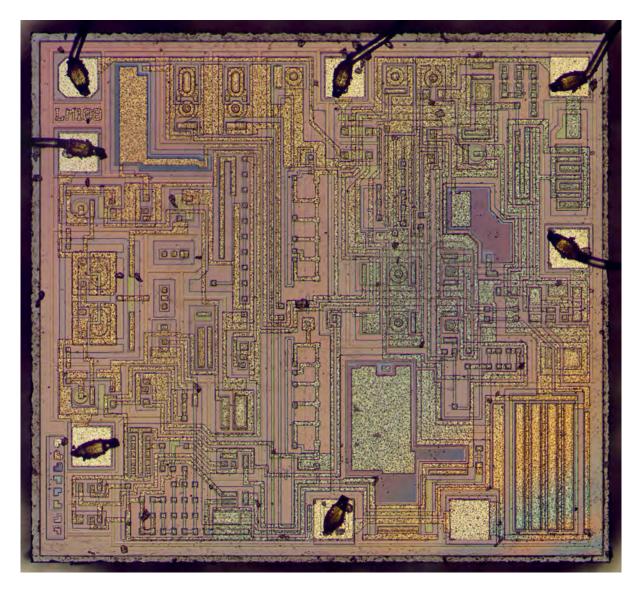


liz glynn studio

SFAC / SFO Terminal One Suspended Sculpture

#### Africa | Circuit board reference **LM108**

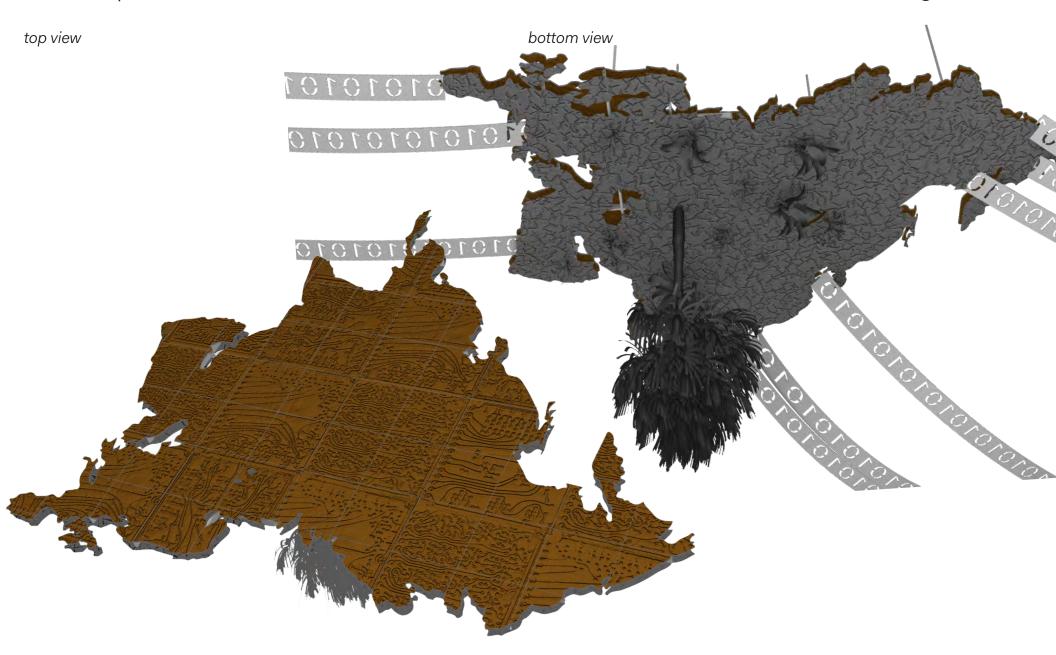
Designed by Bob Widlar in 1969, the LM108 op amp improved upon the 741 which came out a year earlier. This chip uses special superbeta transistors for high performance with a very small input current.



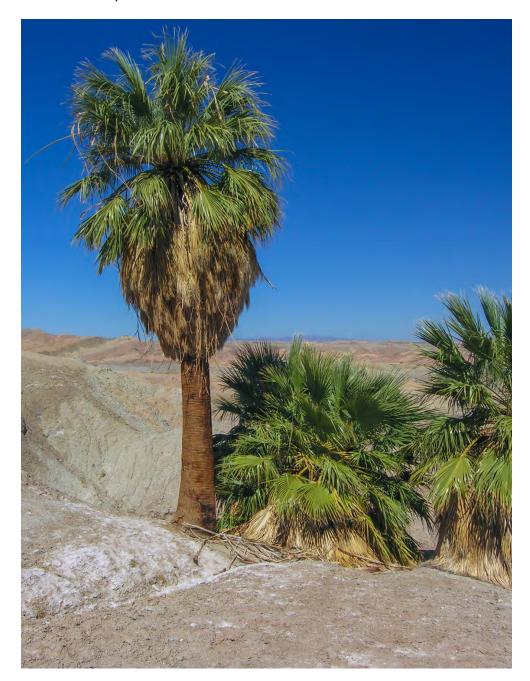
Eurasia | Palm Desert Oasis

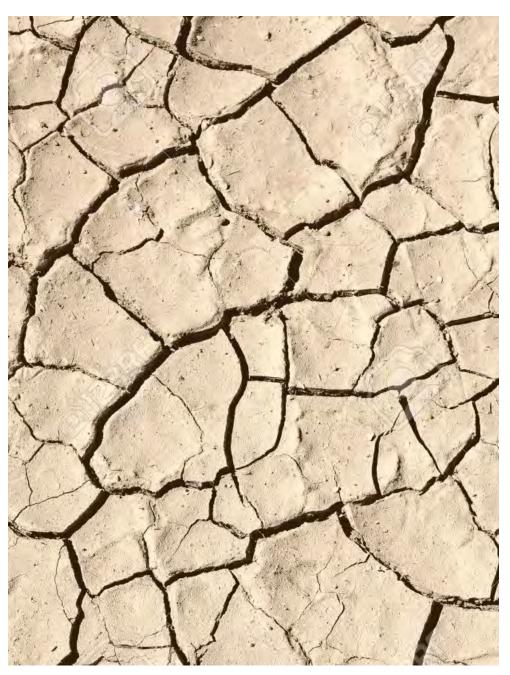
Overall dimensions: 21' 6" x 17' 2"

Tree height: 10'6"



### Eurasia | Palm Desert Oasis

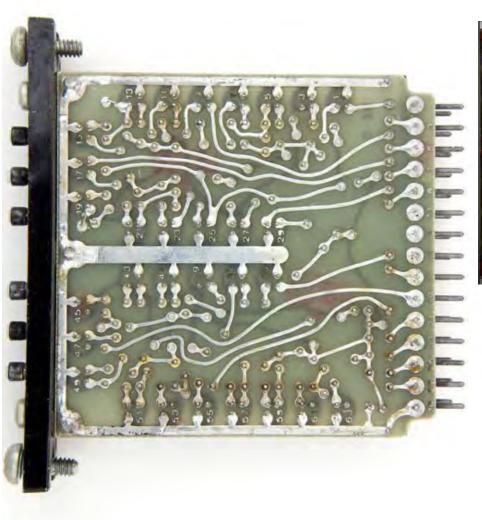


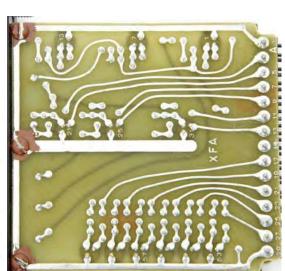


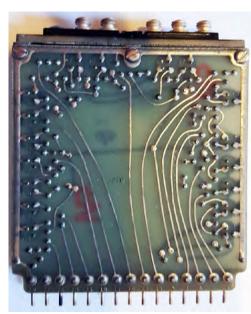
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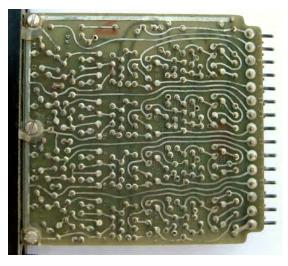
#### Eurasia | Circuit board references CDC 6600

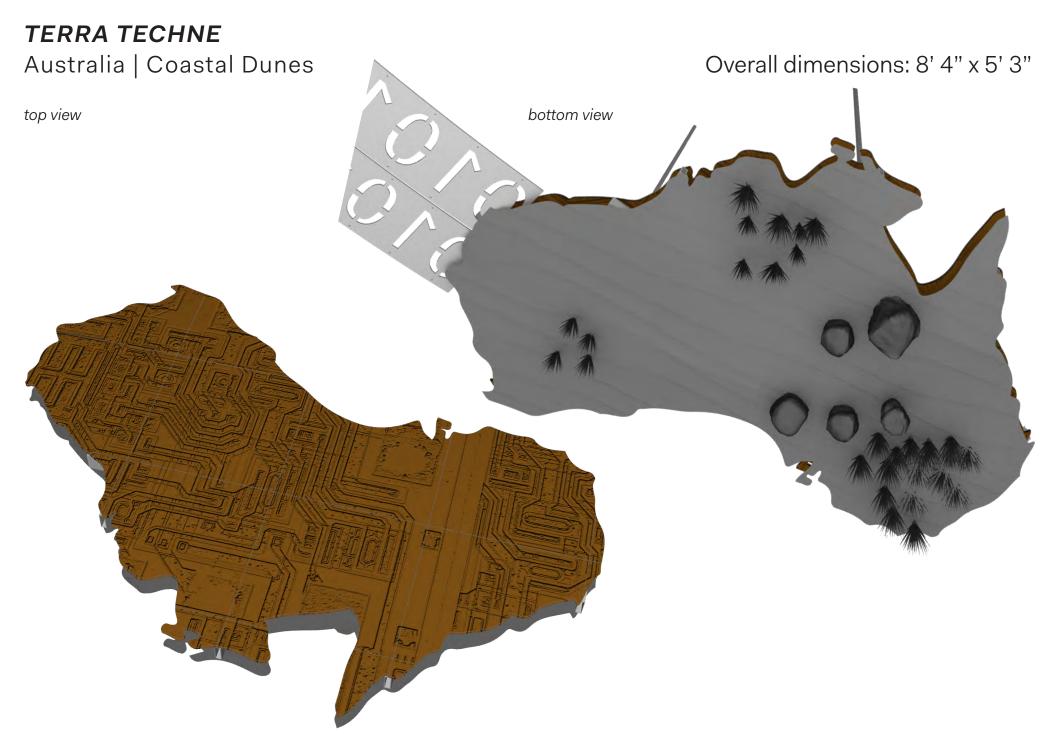
The CDC 6600 was the flagship of the 6000 series of mainframe computer systems manufactured by Control Data Corporation. Generally considered to be the first successful supercomputer, it outperformed the industry's prior recordholder, the IBM 7030 Stretch, by a factor of three.



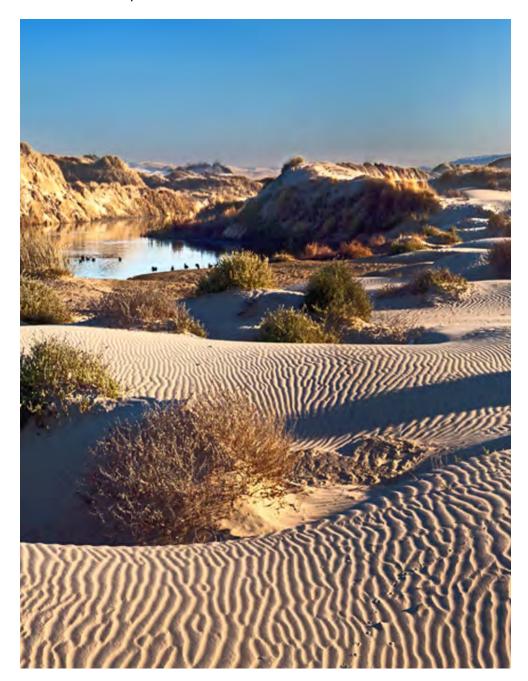








### Australia | Coastal Dunes

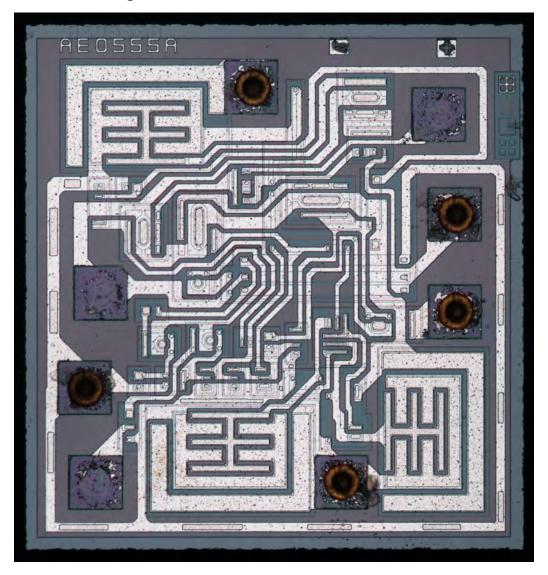




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#### Australia | Circuit board reference LM555CMX

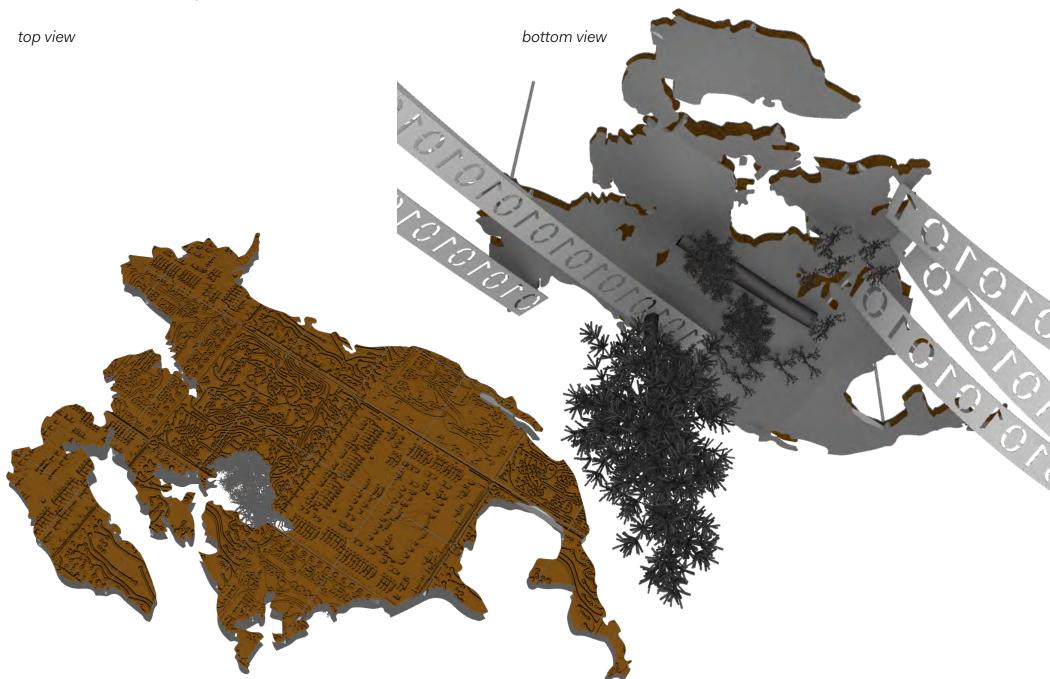
Fairchild Semiconductor International, Inc. was an American semiconductor company based in San Jose, California. Founded in 1957 as a division of Fairchild Camera and Instrument, it became a pioneer in the manufacturing of transistors and of integrated circuits.



North America | Coniferous Forest

Overall dimensions: 15' 10" x 10' 5"

Tree height: 9'



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**SFAC /** SFO Terminal One Suspended Sculpture

### North America | Coniferous Forest

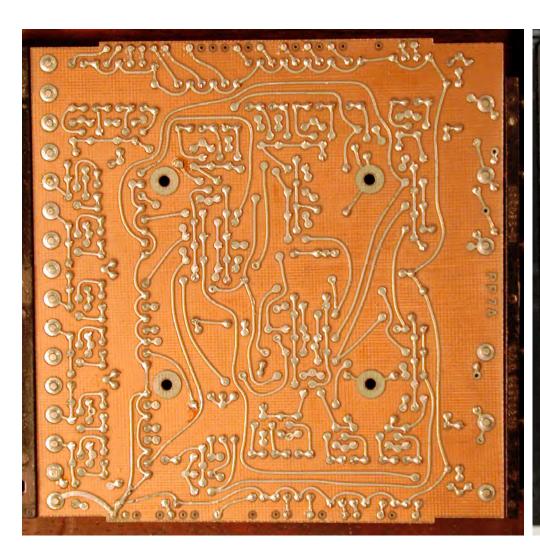


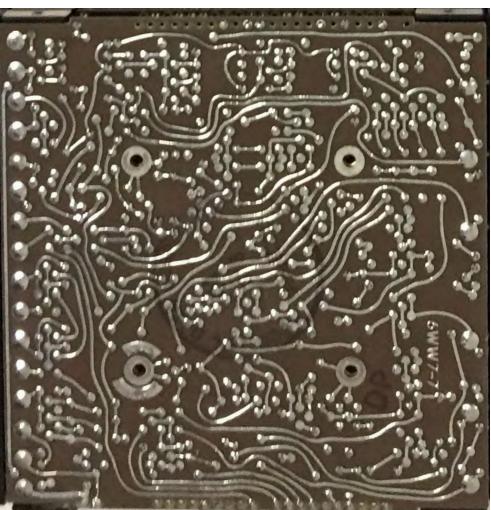


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#### North America | Circuit board reference CDC 7600

The CDC 7600 was the 1972 Seymour Cray-designed successor to the CDC 6600, extending Control Data's dominance of the supercomputer field into the 1970s.





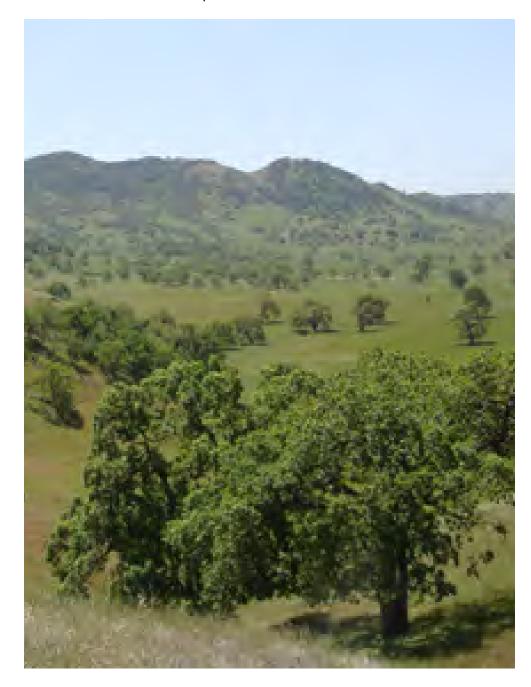
South America | Oak Woodlands

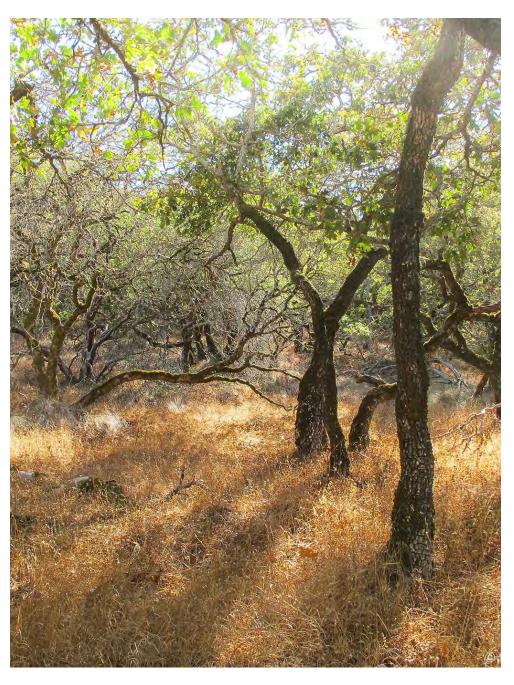
Overall dimensions: 10' 3" x 10' 1"

Tree height: 8'



### South America | Oak Woodlands



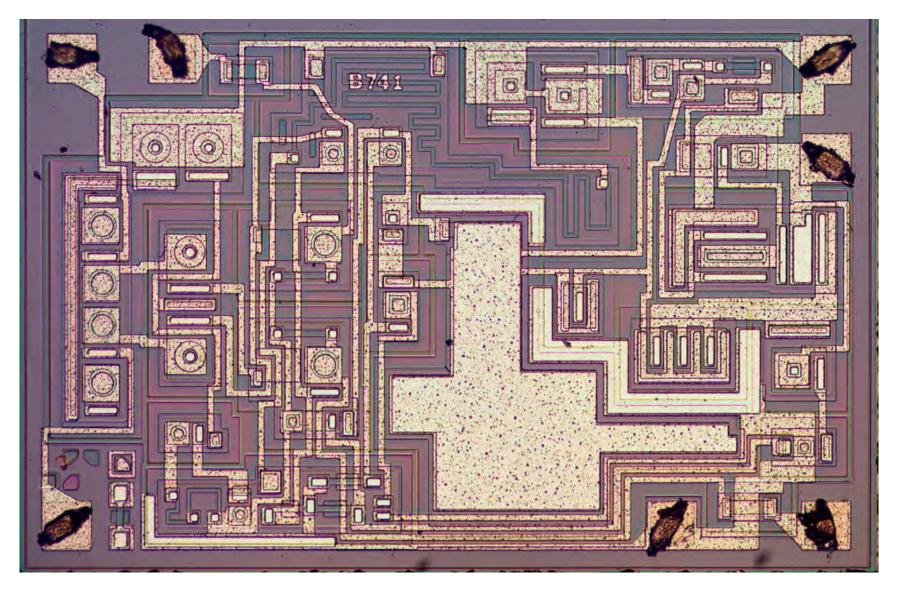


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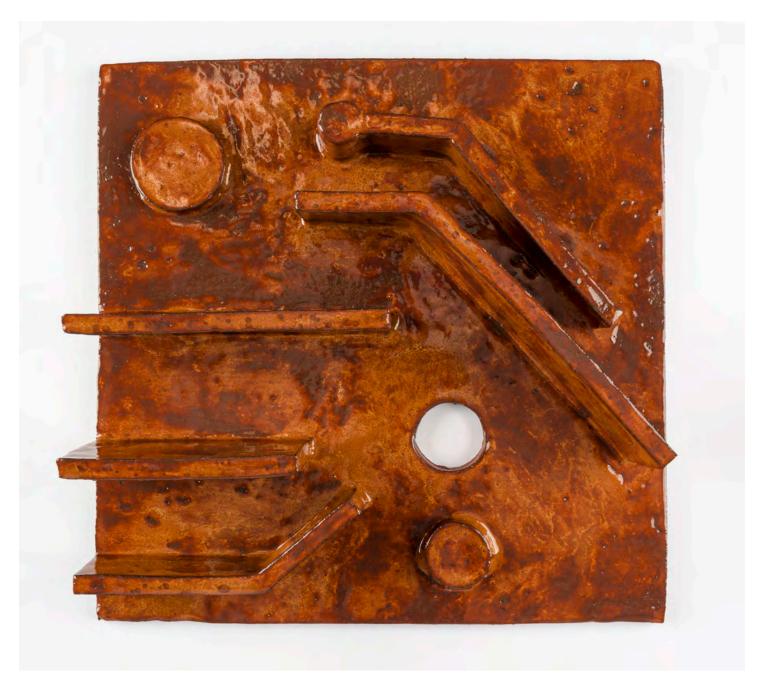
**SFAC /** SFO Terminal One Suspended Sculpture

#### South America | Circuit board reference µA741 Op-Amp

Designed by David Fullagar for Fairchild Semiconductor in 1968, this chip became the de facto standard for analog amplifier ICs. Still in production, it's available everywhere there are electronics.



Materials: Ceramic



Materials: Ceramic (glaze test 1)



Materials: Ceramic (glaze test 2)





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Materials: Ceramic (glaze test 3)



Materials: Ceramic (unglazed)



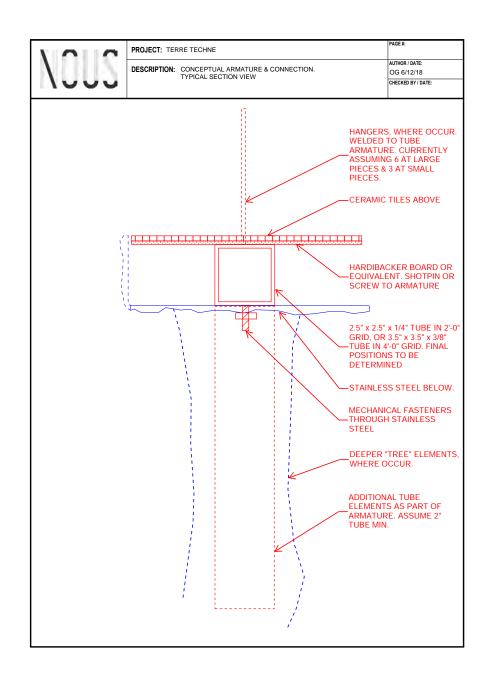
Materials: Cast stainless steel



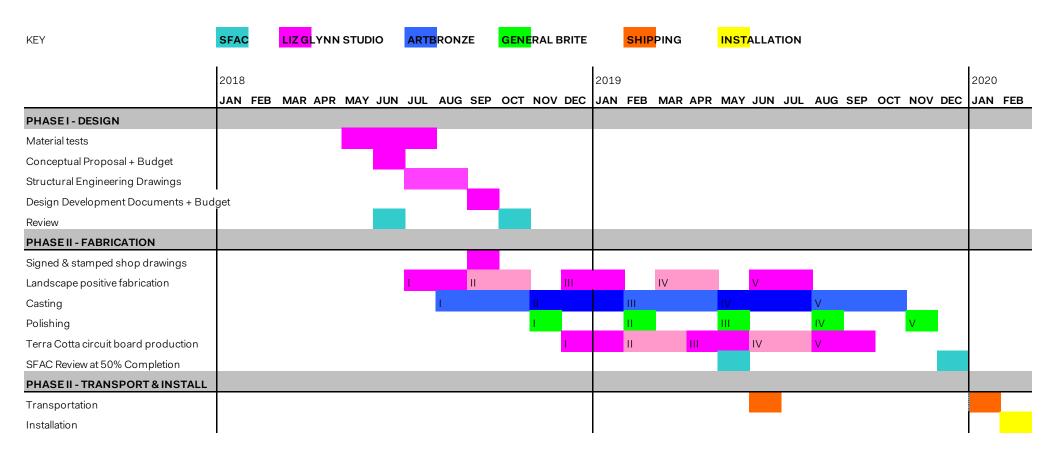
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Island weights & Armature specs

	LBS
Africa   CA Desert	2,982
Eurasia   Palm Desert Oasis	4,994
Australia   Coastal Dunes	1,453
North America   Coniferous Forest	3,183
South America   Oak Woodlands	1,485

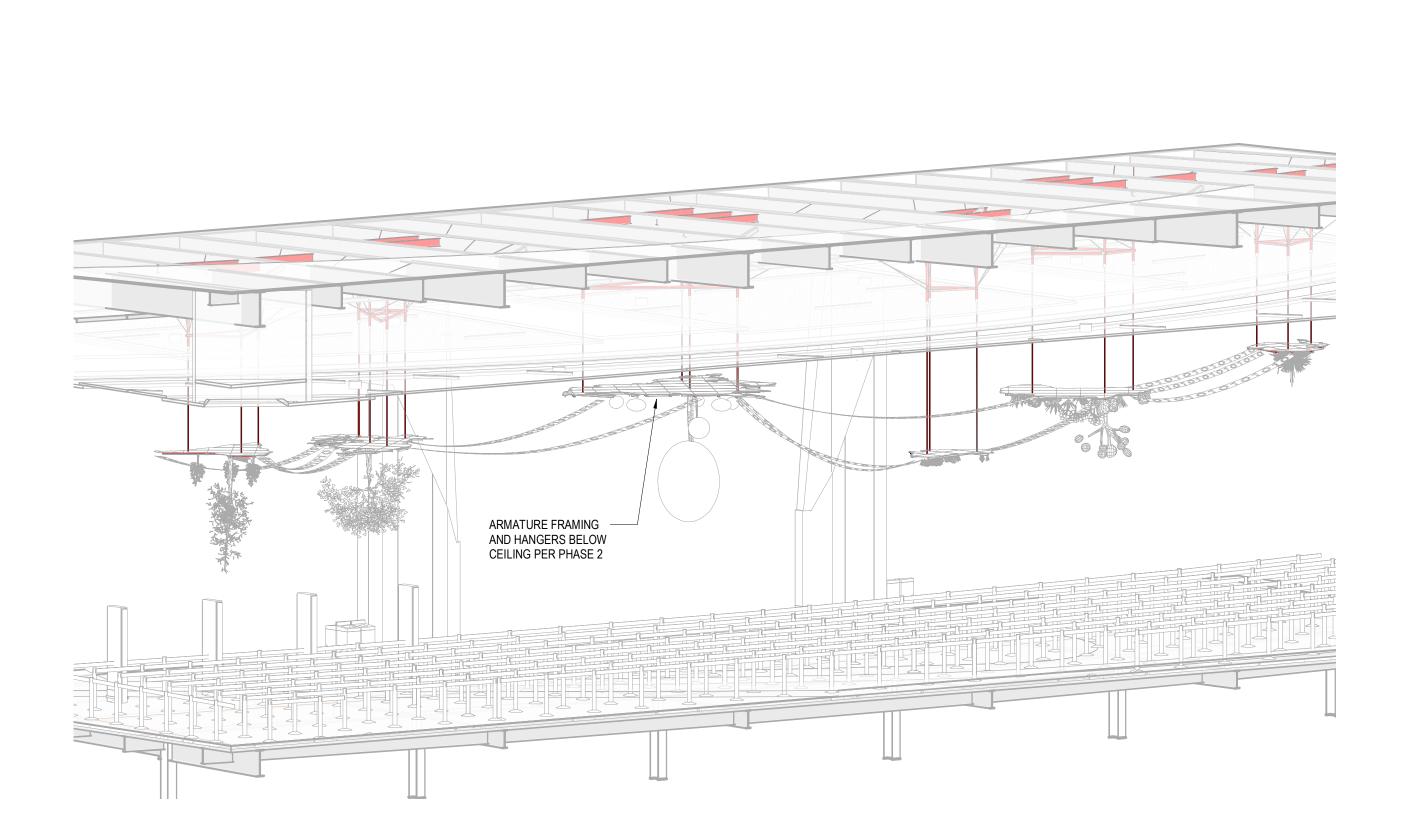


#### PRODUCTION TIMELINE



#### **BUDGET**

	ESTIMATE
Design	
Artist Fee	163,000
Travel	5,000
Insurance	3,000
Structural Engineering	15,000
Implementation	
Modeling & Mold-making Materials	10,000
Terracotta paperclay	5,000
Studio Assistance - Ceramic Building	54,000
Studio Assistance - Modeling and Mold-making	40,800
Digital Assistance	3,000
Stainless Steel foundry work - Art Bronze	346,200
Stainless Steel polishing - General Brite	30,000
Transportation	
Artex	70,000
Contingency	55,000
TOTAL PROJECT BUDGET	800,000



STRUCTURAL TEST AND INSPECTIONS AN INDEPENDENT TESTING AGENCY AND SPECIAL INSPECTORS WILL BE RETAINED BY THE OWNER TO PERFORM THE FOLLOWING TESTS AND INSPECTION. PROVIDE ACCESS AND FURNISH SAMPLES TO THE AGENCY AS REQUIRED BY THE CONTRACT DOCUMENTS. IF INITIAL TESTS OR INSPECTIONS MADE BY THE OWNER'S TESTING AGENCY REVEAL THAT ANY PORTION OF

THE WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, ADDITIONAL TESTS, INSPECTIONS, AND

NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE. THE FOLLOWING ITEMS REQUIRE TESTS AND INSPECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CHAPTER "STRUCTURAL TEST AND INSPECTIONS" OF THE CODE OF THE GOVERNING JURISDICTION AS NOTED IN THE GENERAL SECTION OF THESE GENERAL NOTES. AN "X" PRESENT IN COLUMN "C" INDICATES CONTINUOUS

	INSPECTION & "X" PRESENT IN COLUMN "P" INDICATES PERIODIC INSPECTION.		
	STRUCTURAL STEEL		
	VERIFICATION AND INSPECTION	С	Р
1. MATERIA	L VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS:		
a.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-	Х
b.	IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	-	X
2. INSPECT	ON OF HIGH-STRENGTH BOLTING:		
a.	SNUG-TIGHT JOINTS.	-	Х
b.	PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMAKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION.	-	Х
C.	PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMAKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	Х	-
3. MATERIA	L VERIFICATION OF STRUCTURAL STEEL:		
a.	FOR STRUCTURAL STEEL IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	-	Х
b.	FOR OTHER STEEL, IDENTIFICATION MARKINGS CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	-	X
C.	MANUFACTURER'S CERTIFIED TESTS REPORT.	-	Х
1. MATERIA	AL VERIFICATION OF WELD FILLER MATERIALS:		
a.	IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMNETS.	-	Х
b.	MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	-	Х
5. a INSPEC	CTION OF WELDING - STRUCTURAL STEEL:		
1.	COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	-
2.	SINGLE-PASS FILLET WELDS > 5/16".	Х	-
3.	SINGLE-PASS FILLET WELDS < 5/16".	-	Х
4.	FLOOR AND ROOF DECK WELDS.	-	Х

#### **DESIGN CRITERIA**

APPLICABLE CODE: 2016 CALIFORNIA BUILDING CODE WITH CITY OF SAN FRANCISCO

AMENDMENTS PROJECT TYPE: ART INSTALLATION

TYPE OF CONSTRUCTION: SUSPENDED STEEL STRUCTURE FROM EXISTING

SUPERSTRUCTURE THE STRUCTURAL SCOPE INVOLVES THE INSTALLATION OF A SUSPENDED STEEL STRUCTURE FROM AN EXISTING STEEL SUPERSTRUCTURE ABOVE

**GRAVITY LOADS:** DC-5

#### DEAD LOADS

SOUTH AMERICA = 1730# NORTH AMERICA = 3245# EURASIA = 4820# AUSTRALIA = 1600# AFRICA = 3245# ANTARTICA = 1210#

NOTE: WEIGHT ESTIMATES INCLUDE ARMATURE AND SUPPLEMENTAL FRAMING

THE STRUCTURE HAS BEEN EVALUATED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE.

SEISMIC DESIGN CATEGORY = E

SITE CLASS = F ANALYSIS PROCEDURE = NONSTRUCTURAL ELEMENTS (Fp FORCE)

l,	=	1.0
A <sub>p</sub> R <sub>p</sub>	=	2.5
$R_p^r$	=	2.5
z/h	=	1.0
$S_{ds}$	=	1.04
$F_p$	=	1.248

 $F_{pv}' = 0.208$ 

#### STRUCTURAL DRAWING LIST Sheet Number Sheet Name GENERAL NOTES & SHEET LIST S1.00 S1.01 RT PIECE S2.00

	SENETAL NOTES & SHEET FISH
	(E) ROOF FRAMING PLAN
	CEILING FRAMING PLAN & ELEVATION OF AR
	DETAILS
	GENERAL REQUIREMENTS
MATERIALS AND WO	ORKMANSHIP TO CONFORM WITH THE 2016 FDITION OF THE CALIFORNIA BI

<u>GR</u>	GENERAL REQUIREMENTS
GR-1	MATERIALS AND WORKMANSHIP TO CONFORM WITH THE 2016 EDITION OF THE CALIFORNIA BUILDING CODE, WITH CITY OF SAN FRANCISCO AMENDMENTS AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
GR-2	REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE
	DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.
GR-3	VERIFY ALL DIMENSIONS, ELEVATIONS, & SITE CONDITIONS BEFORE STARTING WORK. NOTIFY STRUCTURAL

ENGINEER OF DISCREPANCIES. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF

CONSTRUCTION, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND FOR CHECKING DIMENSIONS. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES AND RESOLVE BEFORE

PROCEEDING WITH THE WORK. DO NOT SCALE THE DRAWINGS.

PROVIDE MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION, SUCH MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DURING CONSTRUCTION. RETAIN A REGISTERED CIVIL ENGINEER WHOM IS PROPERLY QUALIFIED TO DESIGN BRACING, SHORING, ETC. VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS. INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY FALLING DEBRIS AND OTHER HAZARDS IN CONNECTION WITH

SUBMITTAL REVIEW FOR ITEMS DESIGNED BY NOUS, 10 BUSINESS DAY REVIEW TIME IS REQUIRED UNLESS OTHERWISE AGREED.

RFI REVIEW: ALLOW 5 BUSINESS DAY RESPONSE UNLESS OTHERWISE AGREED. SUBMIT COPIES OF REQUIRED SUBMITTALS TO OWNER'S REPRESENTATIVE FOR REVIEW.

STRUCTURAL STEEL: - A. SUBMIT MILL CERTIFICATES FOR STRUCTURAL STEEL SHAPES INDICATING STRUCTURAL STRENGTH AND

CHEMICAL COMPOSITION FOR EACH HEAT OF STEEL - B. SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION. INCLUDE AT A MINIMUM ASTM MATERIAL DESIGNATIONS, MEMBER SIZES, SIZES AND TYPES OF WELDS, SIZES AND TYPES OF BOLTS AND DIMENSIONS.

- C. SUBMIT MILL CERTIFICATES FOR FASTENERS AND THREADED RODS. - D. SUBMIT WELDING PROCEDURE SPECIFICATION FOR EACH TYPE OF WELD TO BE USED AND PRODUCT DATA

FOR WELDING ELECTRODES.

- E. SUBMIT MANUFACTURERS PRODUCT DATA FOR PRIMER AND FINISH PAINT INCLUDING COLOR CHARTS.

#### STRUCTURAL OBSERVATIONS NOTIFY THE ENGINEER AT SIGNIFICANT CONSTRUCTION STAGES 72 HOURS IN ADVANCE AND PROVIDE ACCESS

FOR THE FOLLOWING STRUCTURAL OBSERVATIONS:

- B. STEEL FRAMING GENERAL

#### STRUCTURAL STEEL

AISC CERTIFIED FABRICATOR IS REQUIRED FOR ALL STRUCTURAL STEEL. FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH AISC "SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS." WELDED CONNECTIONS TO CONFORM TO

HOT DIP GALVANIZE IN ACCORDANCE WITH ASTM A123 AND ASTM A153 STRUCTURAL STEEL AND FASTENERS THAT ARE PERMANENTLY EXPOSED TO THE WEATHER. REPAIR GALVANIZING AFTER WELDING IN ACCORDANCE

ARC-WELDING ELECTRODE / FILLER METALS TO BE LOW HYDROGEN TYPES E7XTX, E7XTXX OR E70XXX MINIMUM AS APPLICABLE. DEMAND CRITICAL WELDS, WHERE NOTED AS "DC", SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CHARPY V-NOTCH (CVN) TOUGHNESS OF 20 FT-LB (27J) AT -20°F (-29°C), AS DETERMINED BY THE APPROPRIATE AWS CLASSIFICATION TEST METHOD, AND 40 FT-LB (54J) AT 70°F (21°C). WHEN THE STEEL FRAME IS NORMALLY ENCLOSED AND MAINTAINED AT A TEMPERATURE OF 50°F (10°C) OR

WELDERS TO BE CERTIFIED BY AWS . ALL SHOP WELDS MUST BE PERFORMED IN AN AWS CERTIFIED

FABRICATORS SHOP. WHERE FIELD WELDING IS NOTED, THE DESIGNATION IS GIVEN AS A SUGGESTED CONSTRUCTION PROCEDURE

FIELD WELDING TO BE DONE BY WELDERS CERTIFIED BY AWS FOR STRUCTURAL.

PROVIDE NATURAL CAMBER UP, UNLESS OTHERWISE NOTED, EXCEPT AT CANTILEVERS. AT CANTILEVERS PROVIDE CAMBER SUCH THAT TIP OF CANTILEVER IS ABOVE FINAL.

SPLICE MEMBERS ONLY WHERE INDICATED.

STRUCTURAL STEEL TO CONFORM TO THE FOLLOWING UNLESS OTHERWISE NOTED:

<u>SECTION</u>	<u>TYPE</u>
ROLLED SHAPES	·
WIDE FLANGES AND WT	ASTM A992, GR50
CHANNELS, ANGLES & OTHER	ASTM A36
PLATES	
COLUMN BASE PLATES	ASTM A572, GR 50
BRACE GUSSET PLATES	ASTM A572, GR 50
BEAM COVER/SIDE PLATES	ASTM A36
COLUMN CONTINUITY PLATES	ASTM A572, GR 50
BEAM STIFFENER PLATES	ASTM A36
DECK CLOSURE PLATES	ASTM A36
OTHER, OUN	ASTM A572, GR 50
OTHER TYPES	
STEEL PIPE	ASTM A53, GRADE B
HOLLOW STRUCTURAL SECTION (HSS)	ASTM A500, GRADE B
STAINLESS STEEL SHAPES, PLATES AND BARS	ASTM A276
BOLTS	ASTM A325X
MACHINE BOLTS	ASTM A307
ANCHOR BOLTS / ANCHOR RODS	ASTM F1554, GR 36
THREADED AND HANGER ROD	ASTM A36
WELDED SHEAR CONNETORS	ASTM A108 GRADE 1015 THROUGH 1020
NUTS FOR BOLTS AND MACHINE BOLTS	ASTM A563
HARDENED WASHERS	ASTM F436
UNHARDED WASHERS	ASTM F844
PLAIN WASHERS	ANSI B18.22.1





NE	Revision	Schedule	

Revision Date

Revision Description

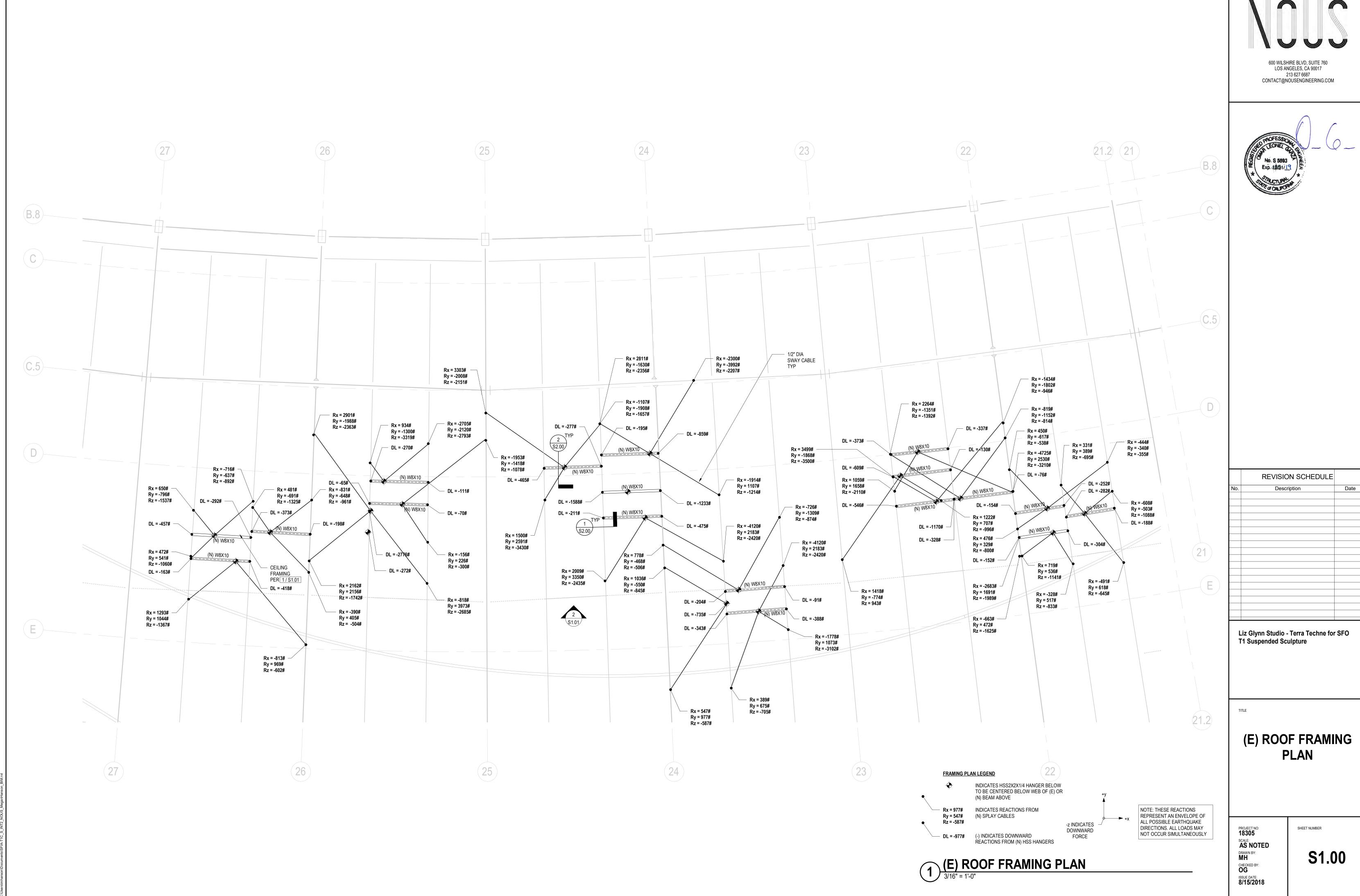
Liz Glynn Studio - Terra Techne for SFO T1 Suspended Sculpture

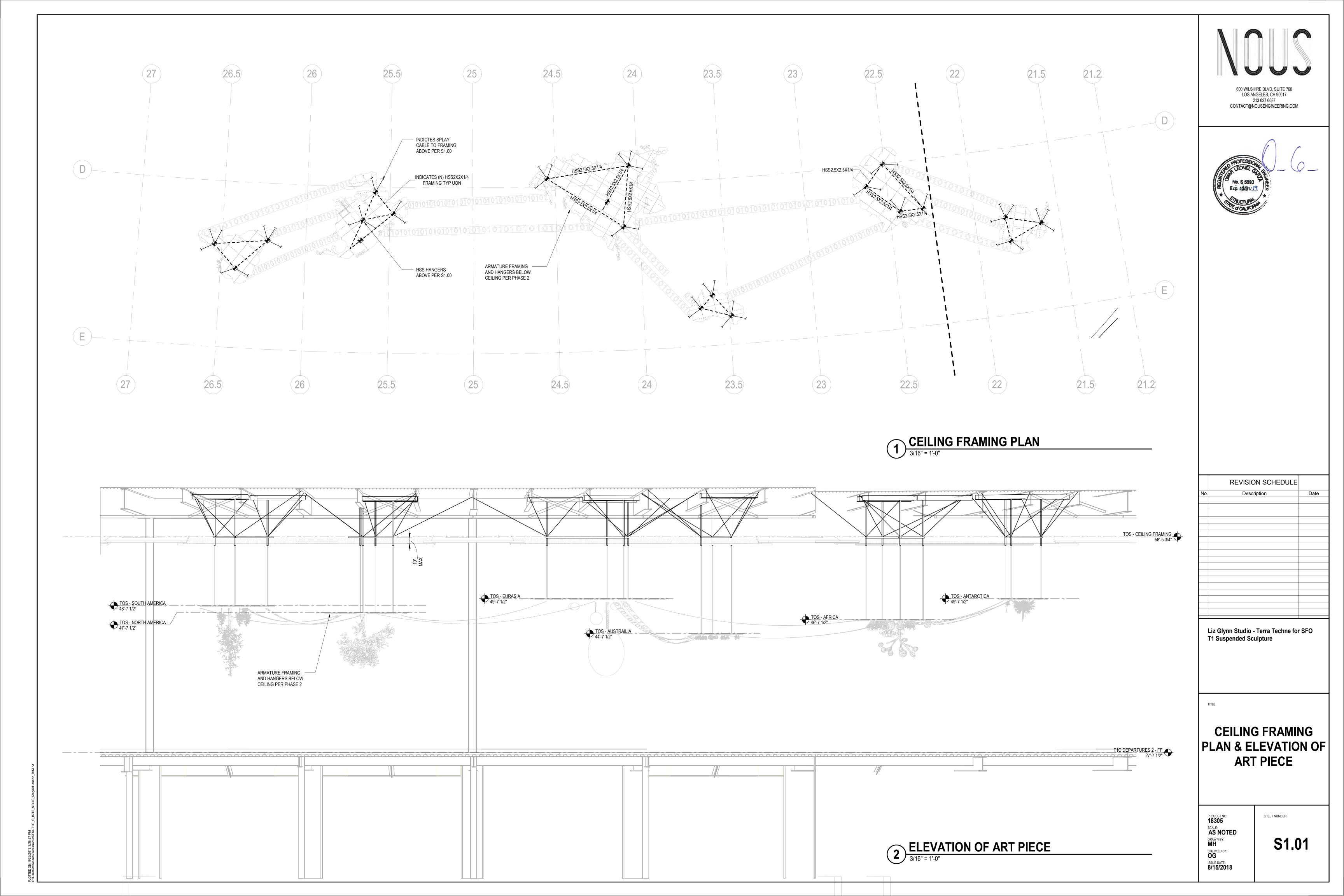
## **GENERAL NOTES & SHEET LIST**

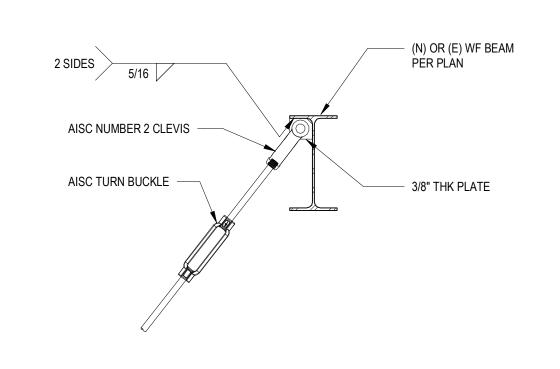
PROJECT NO: **18305** SCALE: AS NOTED DRAWN BY: ISSUE DATE: 8/15/2018

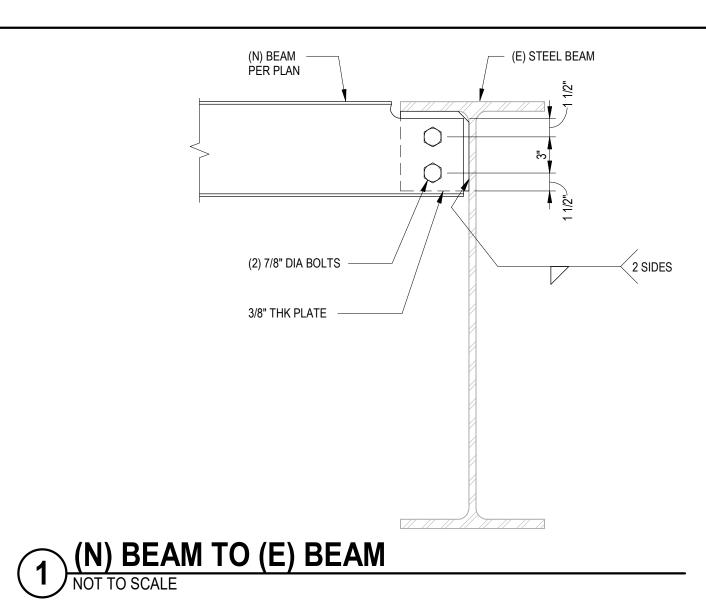
SHEET NUMBER

**S0.00** 





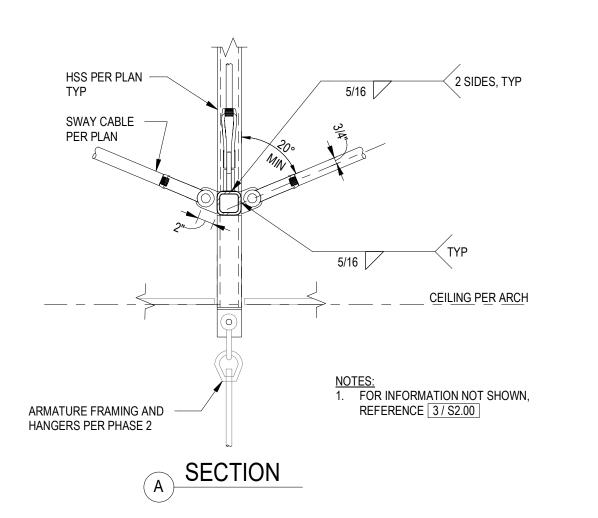


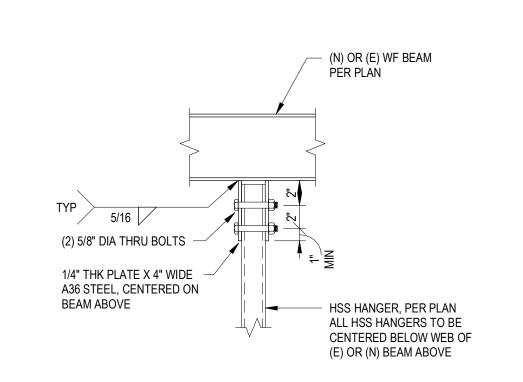




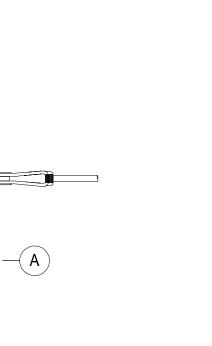


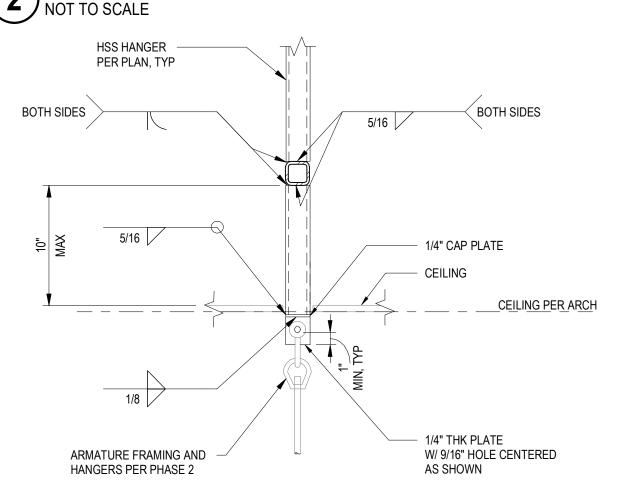
# SWAY CABLE CONNECTION TO STEEL NOT TO SCALE





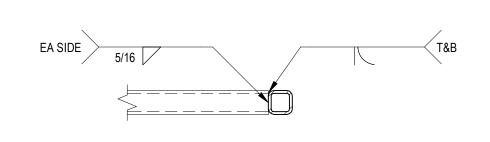
## HANGER TO STEEL CONNECTION NOT TO SCALF





## 7 SWAY BRACE TO ARMATURE NOT TO SCALE





**DETAILS** 

**S2.00** 

Liz Glynn Studio - Terra Techne for SFO T1 Suspended Sculpture

REVISION SCHEDULE

Description

PROJECT NO: **18305** SCALE: AS NOTED DRAWN BY:
MH
CHECKED BY:
OG ISSUE DATE: 8/15/2018

HSS TO HSS FRAMING CONNECTION
NOT TO SCALE