

# THE NEW TRANSFORMED AGUADILLA AIRPORT

## Hub, Sustainable & Modern

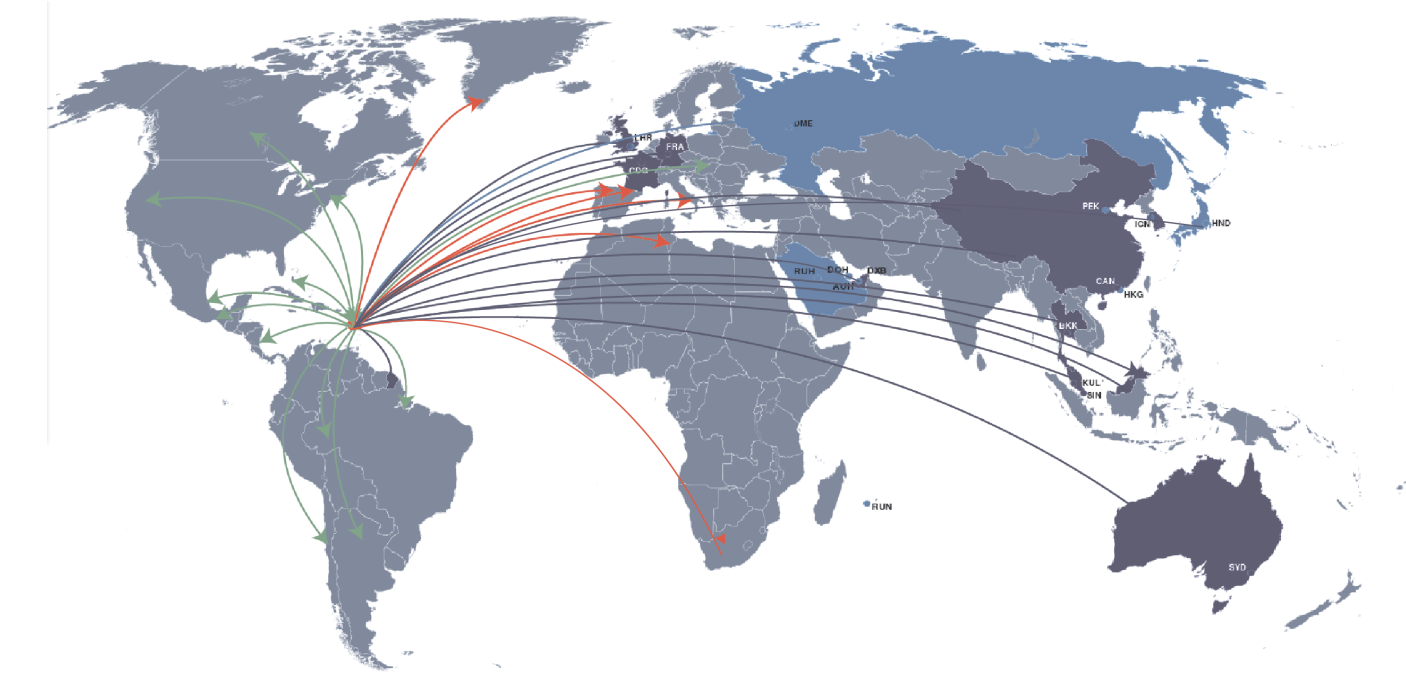
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### PROJECT DESCRIPTION

A total transformation to the Aguadilla airport was performed to accomplish a **hub, sustainable and modern** airport with a capacity of **5 million passengers a year (4.5 transfer passengers)**. This project would bring an enormous economic and social impact to Puerto Rico generally and to the western area of the island specifically.

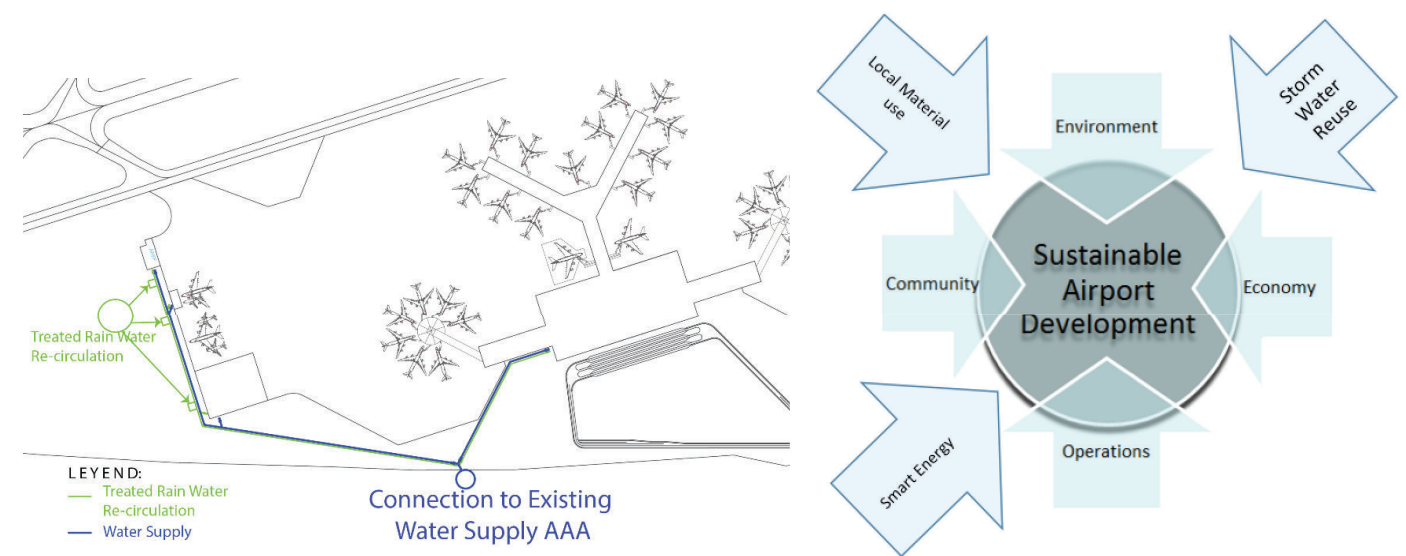
### OBJECTIVE

- Develop a mega construction project that directly impacts important areas socially and economically.
- Design a **modern, sustainable, hub** airport capable to receive and provide maintenance to jumbo aircrafts, such as the Airbus A380 and Boeing 747.
- Connect Puerto Rico with the rest of the world.
- Attract more tourism to the island.



### SUSTAINABILITY

- Use of local and recycled construction materials from de site.
- Smart energy and Natural lighting.
- Storm water treatment and use.
- The use of ultra high performance concrete in the airfield pavement

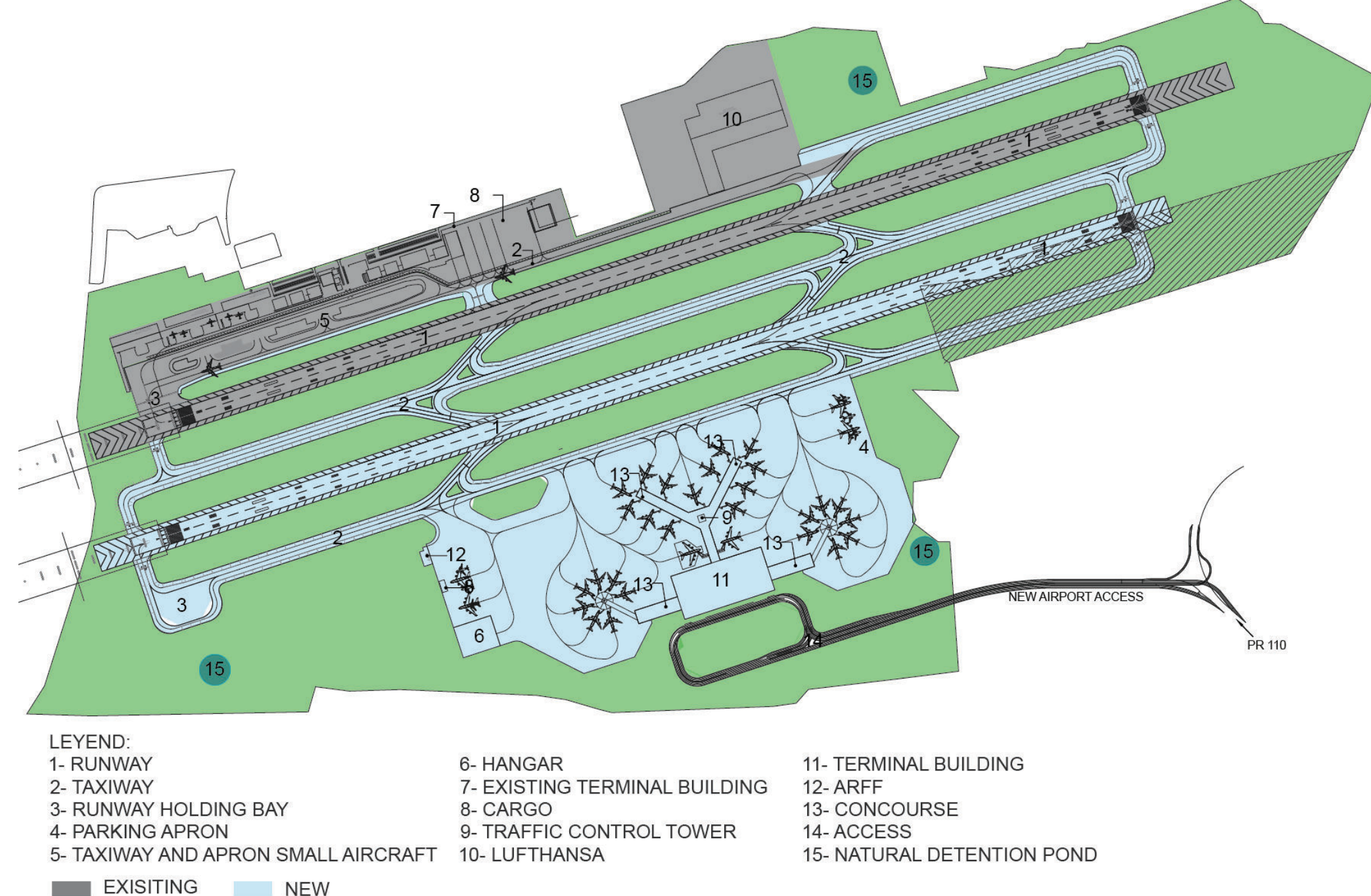


### Smart Airport

This personnel is needed due to the use of smart technology to make passengers' stay more pleasant.



### MASTER PLAN



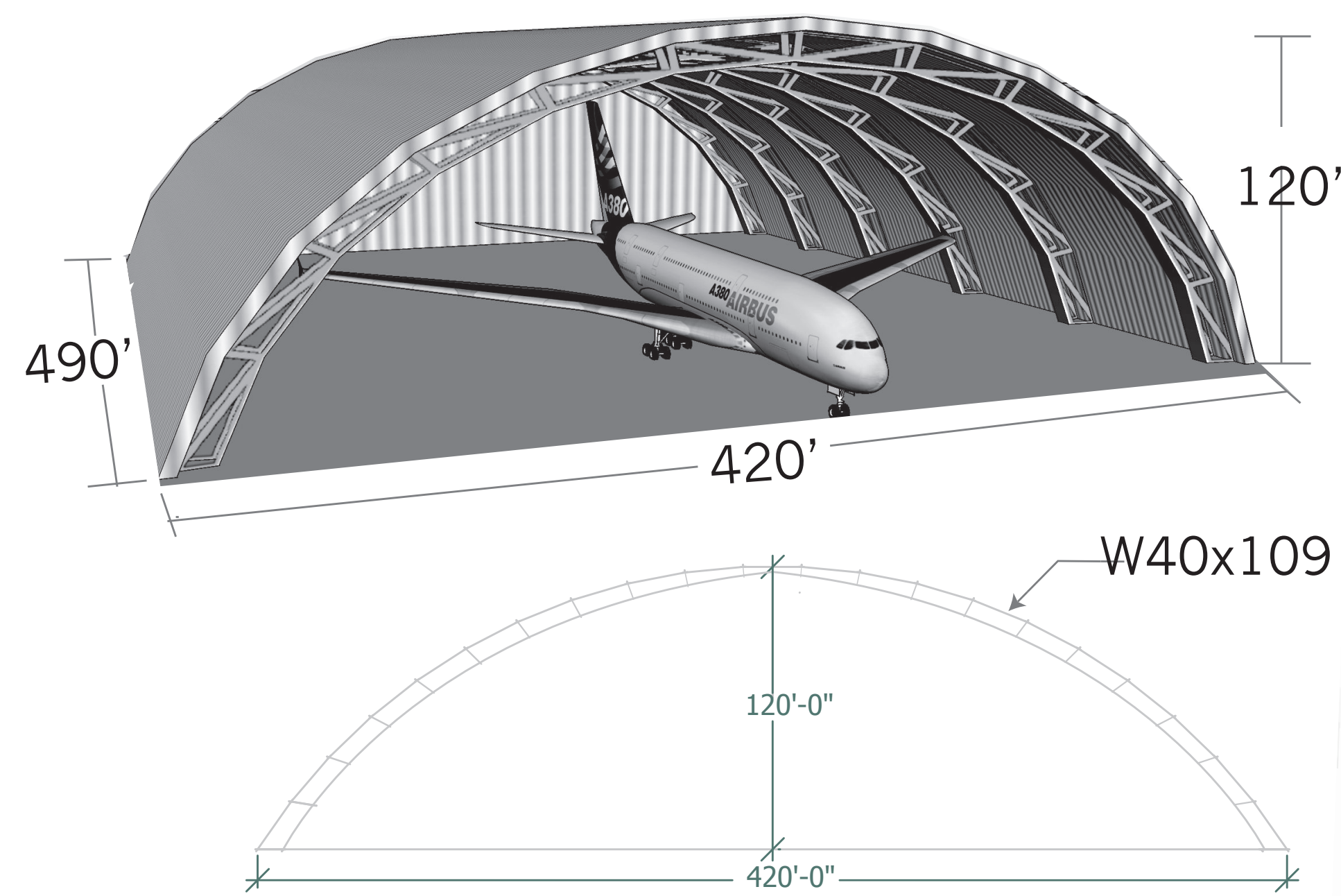
### CONSTRUCTION

Detailed construction schedule was developed to include:

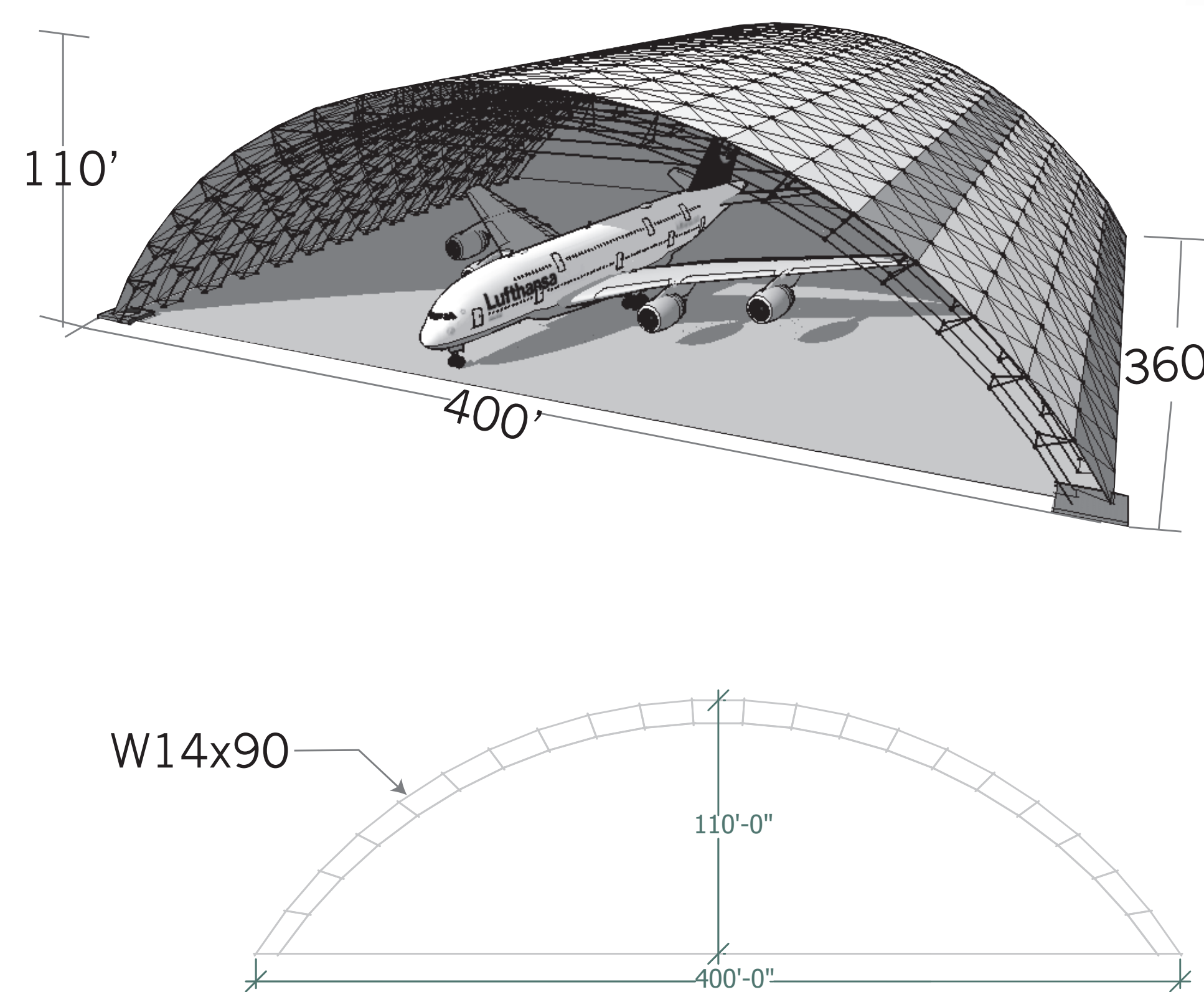
- Access to the airport, runway and taxiway terminal building, control tower, hangar and Aircraft Rescue Firefighting (ARFF).
- The total construction duration will be about 4.5 years.
- The estimated construction cost will be 600 million dollars.

### HANGAR

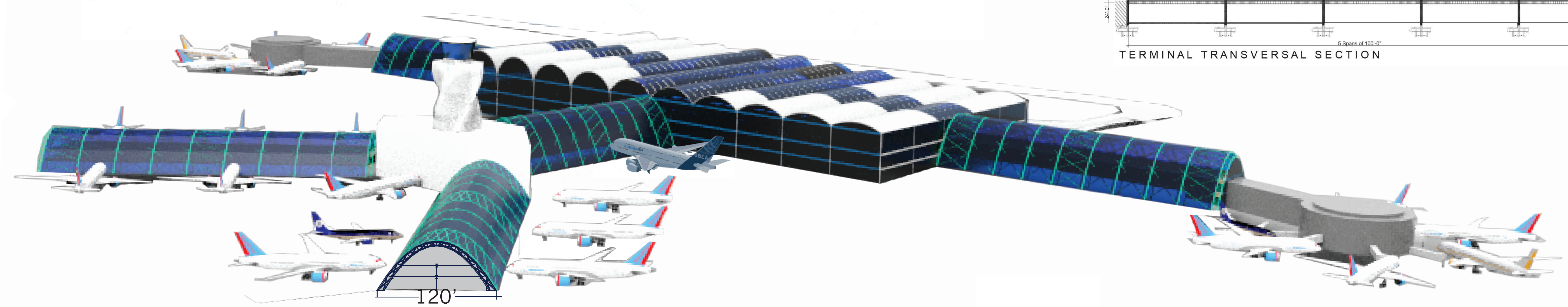
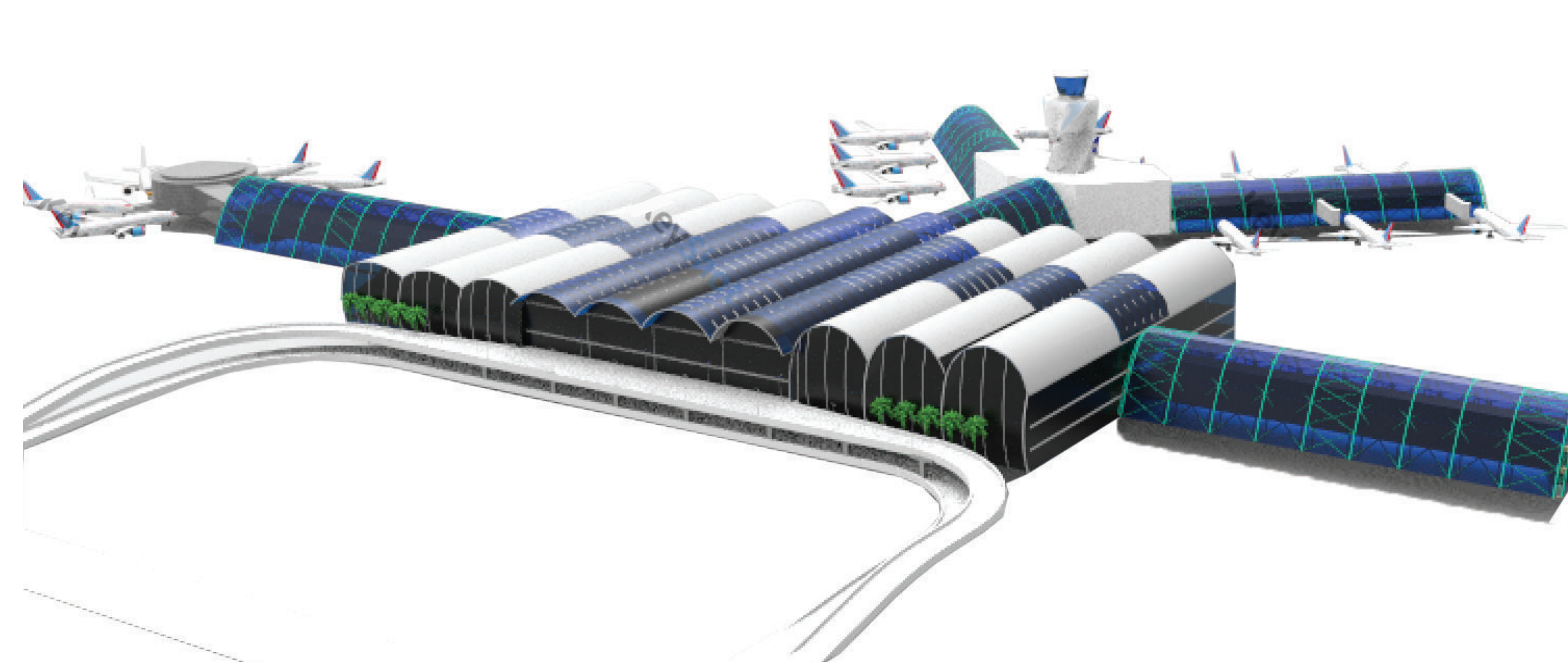
#### OPTION A: Three-point Pin Articulated Arch



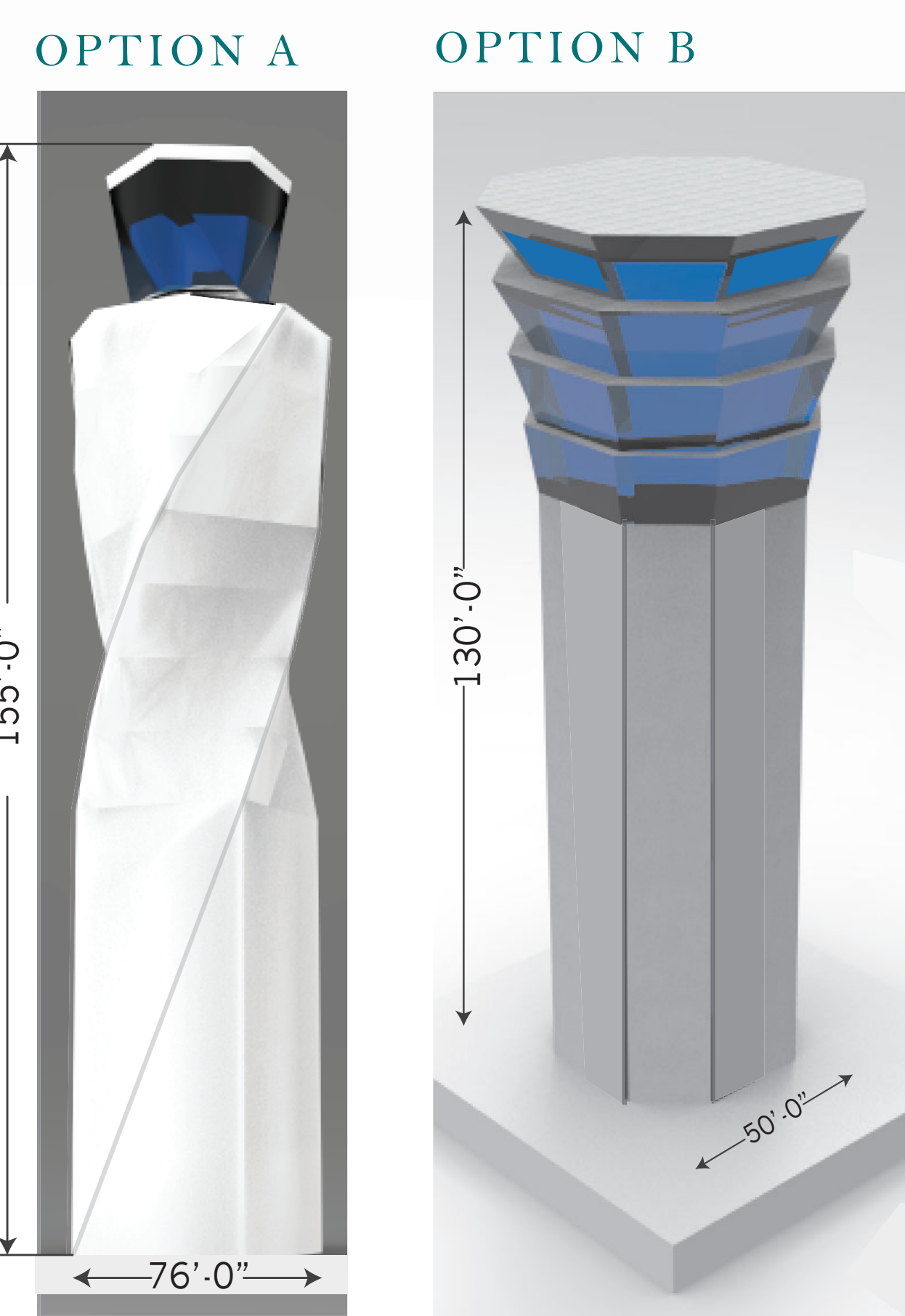
#### OPTION B: Two-point Articulated Arch



### OPTION A

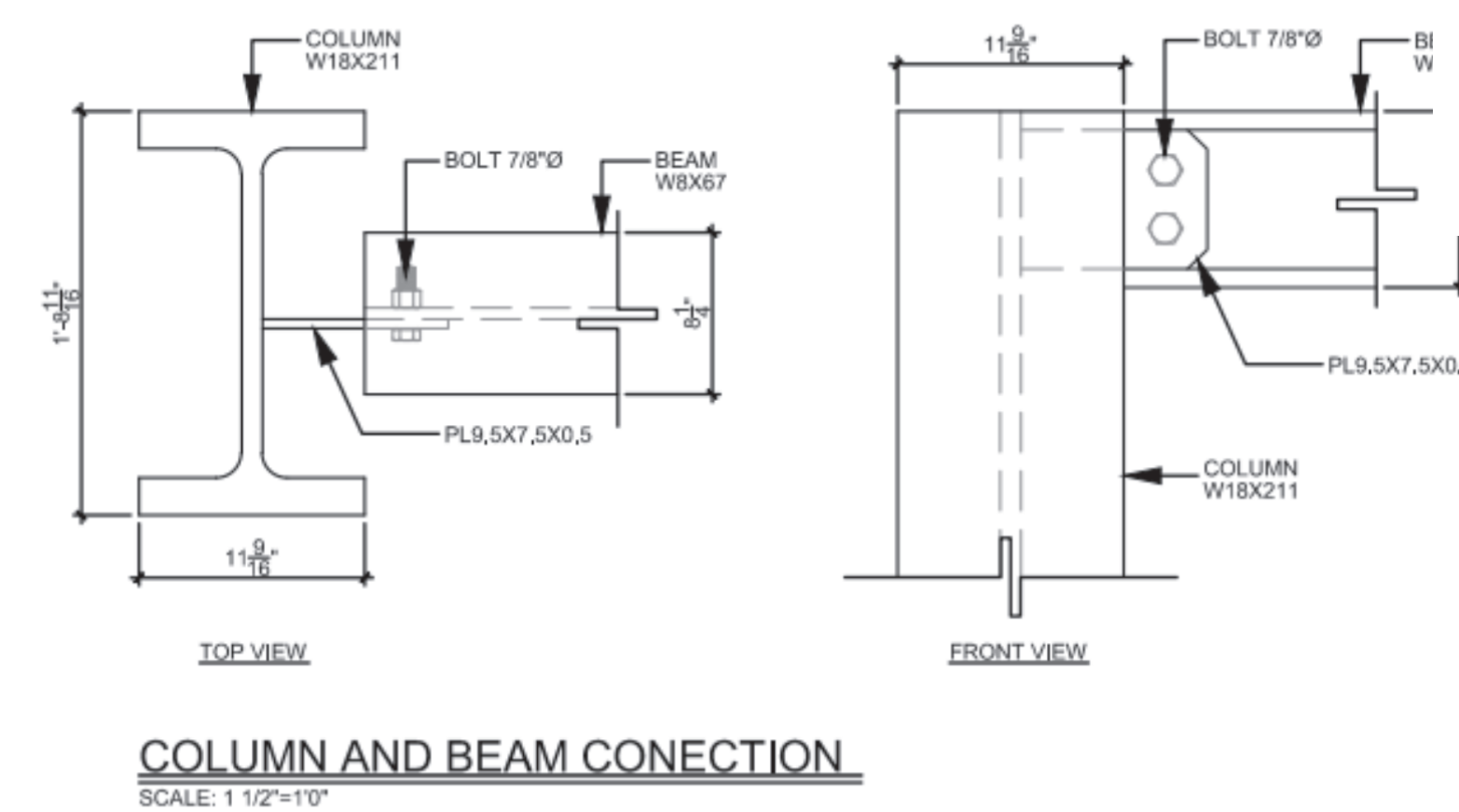


### CONTROL TOWER

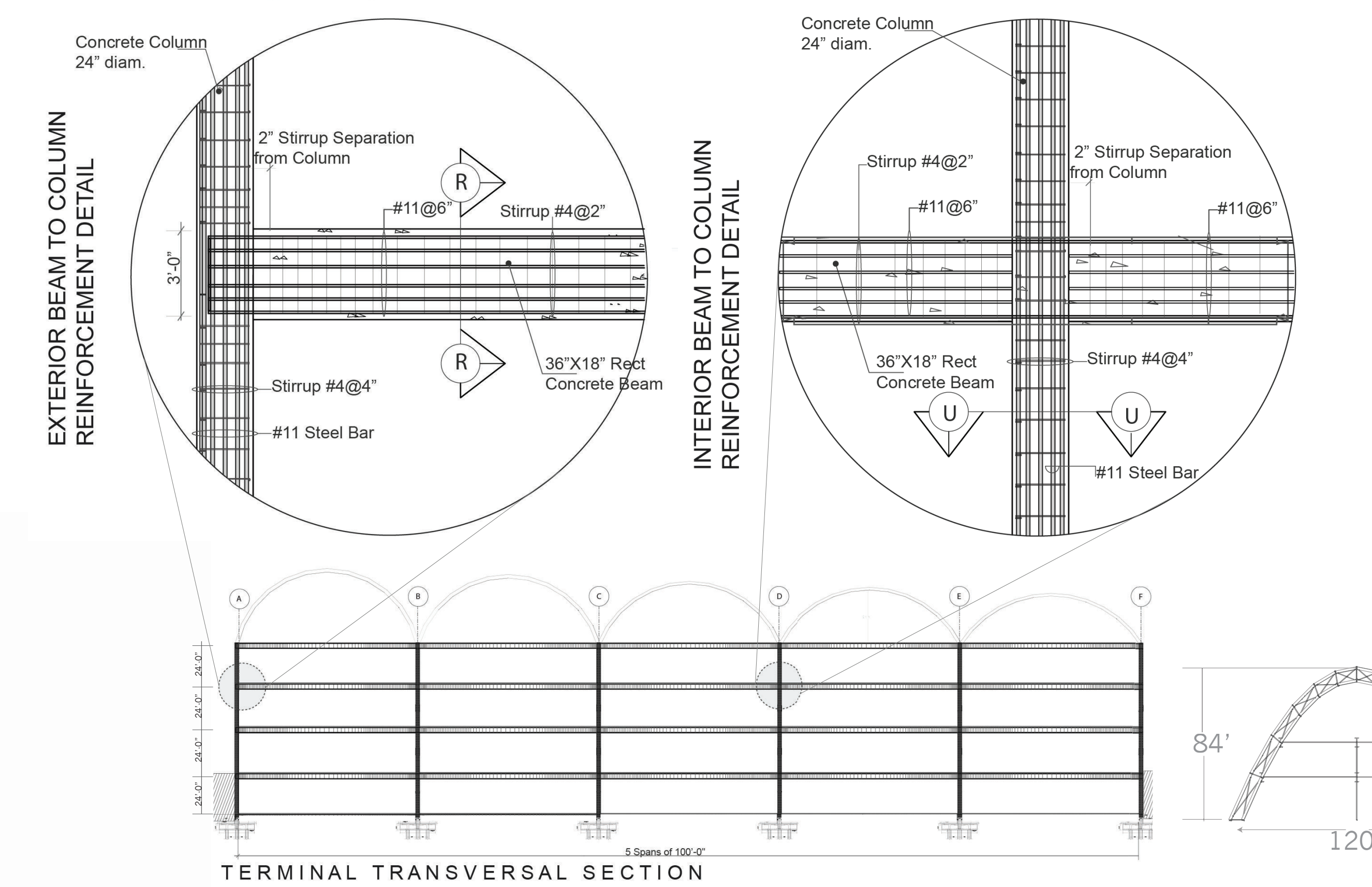
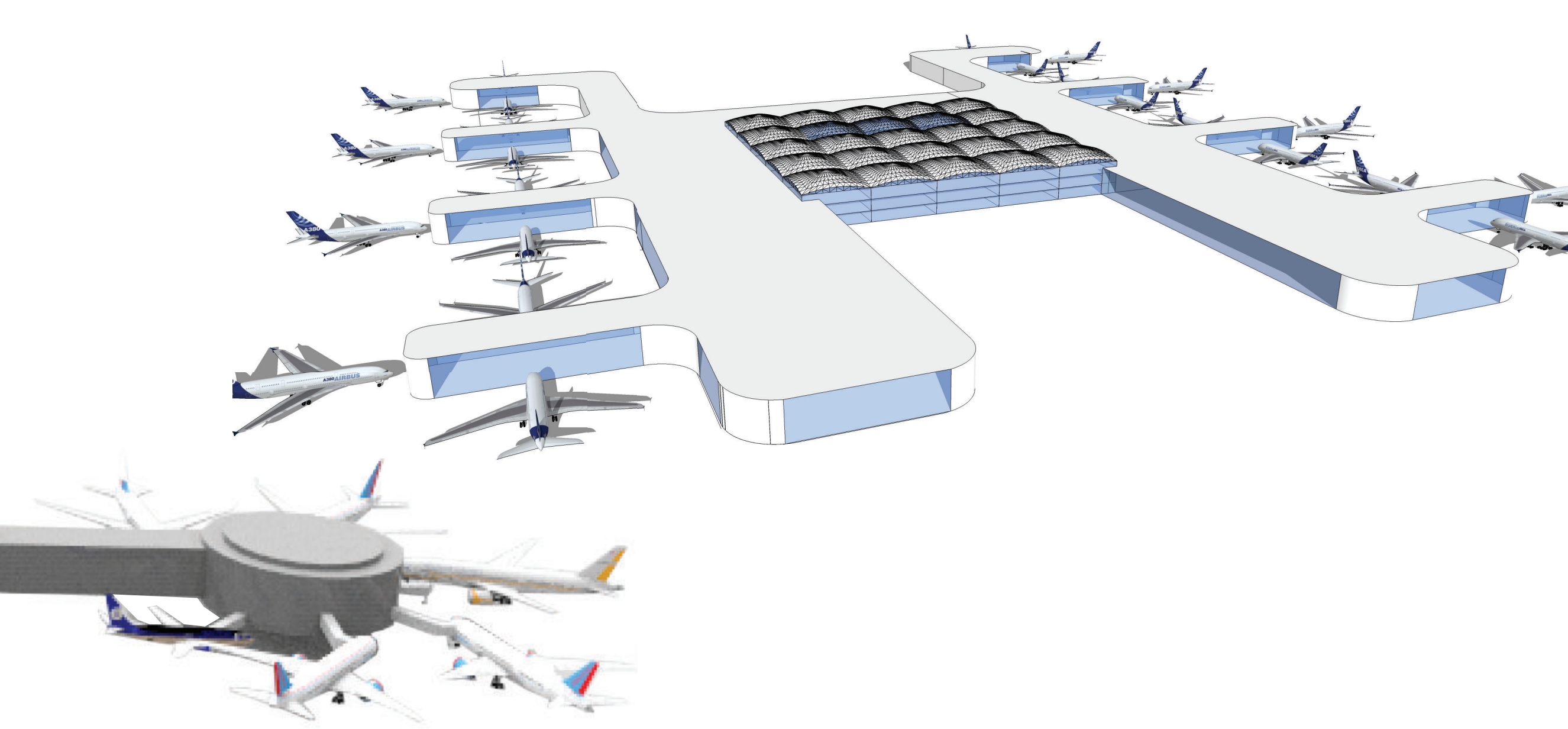


#### CONNECTION SCHEDULE - BEAM COLUMN (MAJOR AXIS)

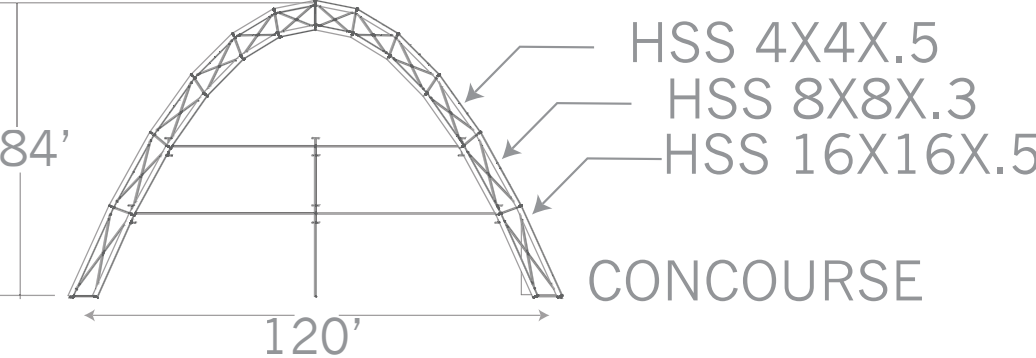
CONNECTION ID	CONNECTION COUNT	BEAM SECTION	FIN PLATE T	FIN PLATE W	FIN PLATE H	BOLTS TYPE	BOLTS SIZE	BOLTS NT
SC03	472	W8x57	1/2"	4"	6"	A325	7/8"	2
SC05	8	W10x112	1/2"	4"	6"	A325	7/8"	2
SC08	2	W8x57	1/2"	4 1/2"	6"	A325	7/8"	2



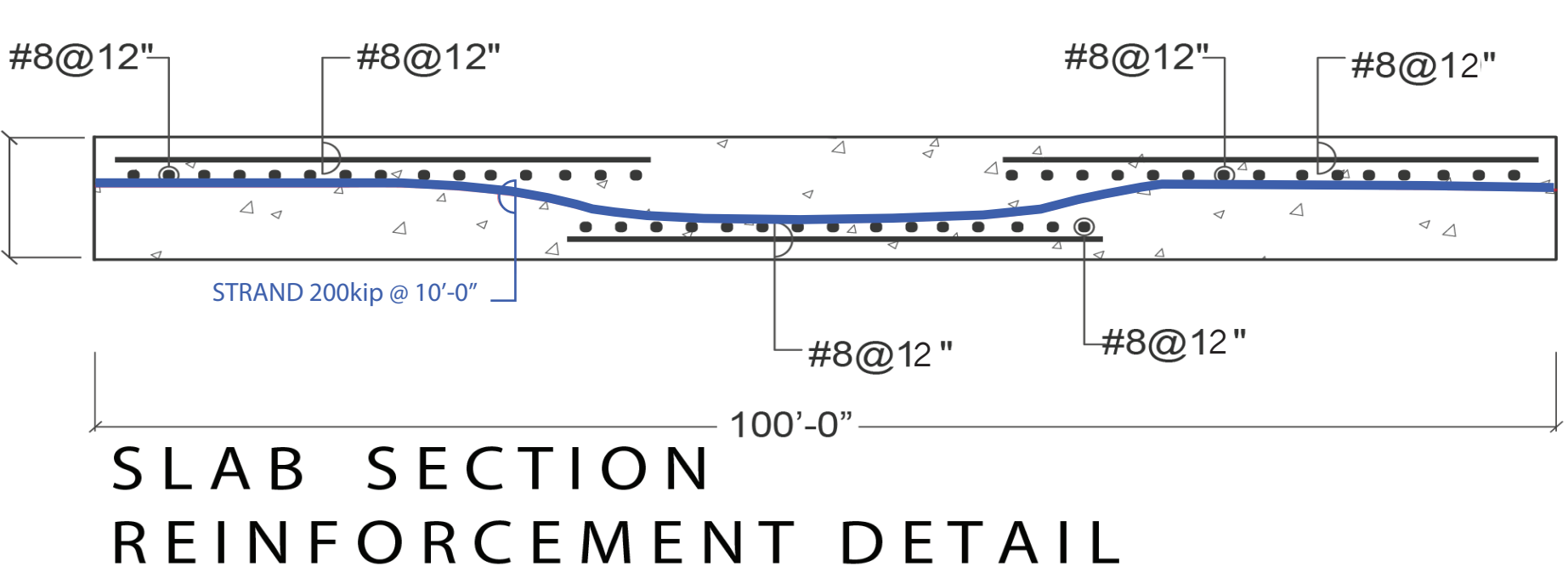
### OPTION B



#### TERMINAL TRANSVERSAL SECTION



#### CONCOURSE

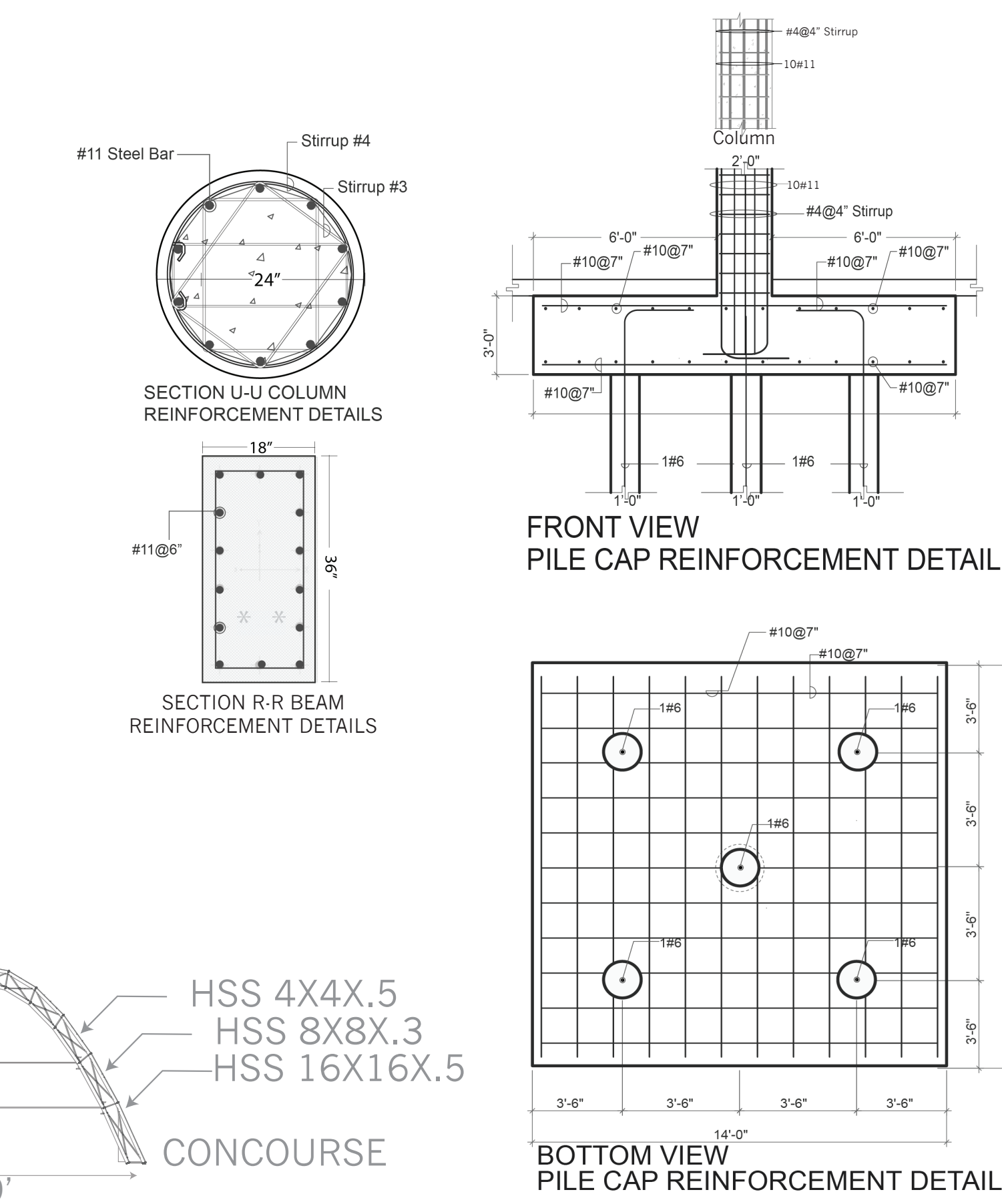


#### SLAB SECTION REINFORCEMENT DETAIL

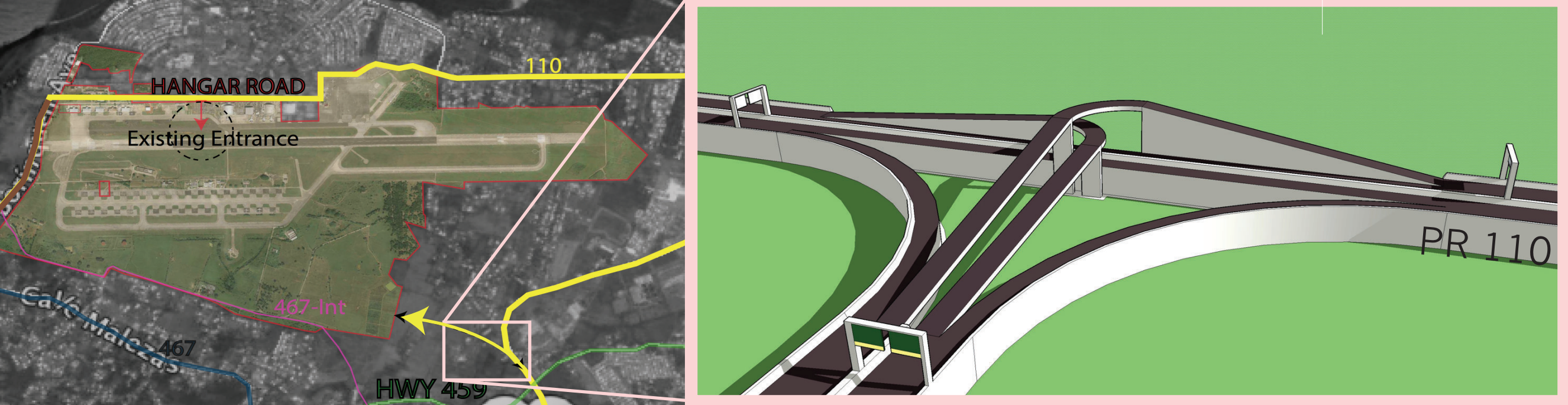
### DESIGN PROCESS

Model design tools & modern construction materials using modern structural technics were used to achieve the established objects:

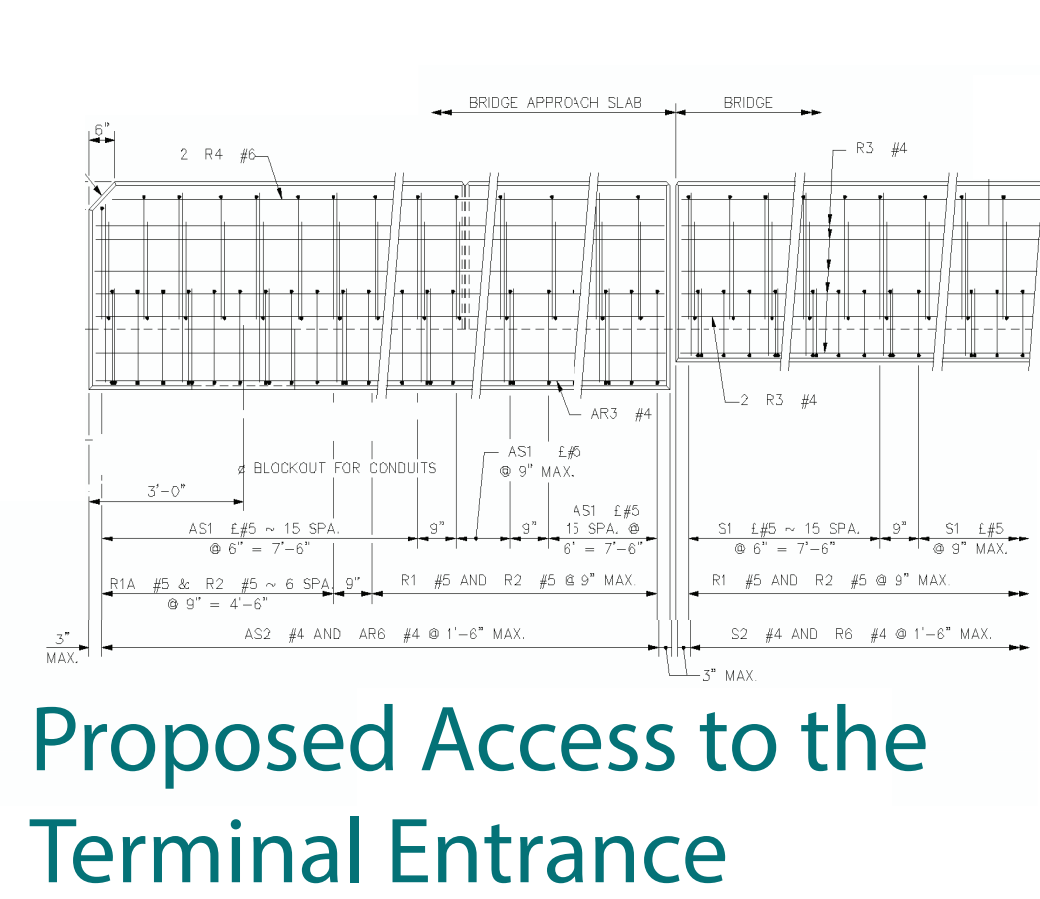
- Airport master plan including runway and taxiway pavement design.
- Structural Analysis and design, including post-tensional concrete slab, beam and pre-stressed steel structures; As well as three point spatial steel frames.
- Storm water drainage system, wastewater, and two water supply resources.
- Environmental and solid waste management.



### PROPOSED ACCESS



Proposed Access from PR 110 to the site.



Proposed Access to the Terminal Entrance

### CONCLUSIONS

- A sustainable type hub airport with modern materials and technology.
- Cost effective construction.

### FUTURE WORKS

- A collective transportation system is recommended to connect the airport with the SJU airport.
- Public Transportation System for Aguadilla, Puerto Rico.

### SOFTWARES

- ADE (Airport Design Editor)
- COMFAA (Runway and Taxiway Design)
- DRIP (Drainage Analysis of Pavements)
- ETABS (Structural Analysis)
- SAP 2000 (Structural Analysis)
- EPANET (Water Systems Analysis)
- STREETPAVE (Pavement Design)