

ENTRY FORM



DVASE 2022 Excellence in Structural Engineering Awards Program

PROJECT CATEGORY (check one):

| | | | |
|--------------------------|--|-----------------------------|---|
| Buildings under \$5M | | Buildings Over \$100M | |
| Buildings \$5M - \$15M | | Other Structures Under \$1M | |
| Buildings \$15M - \$40M | | Other Structures Over \$1M | X |
| Buildings \$40M - \$100M | | Single Family Home | |

| | |
|--|--|
| Approximate construction cost of facility submitted: | |
| Name of Project: | Tyndall Air Force Base, Hangar Door Modification |
| Location of Project: | Panama City, FL |
| Date construction was completed (M/Y): | Estimated completion December, 2022 |
| Structural Design Firm: | Mainstay Engineering Group, Inc. |
| Affiliation: | All entries must be submitted by DVASE member firms or members. |
| Architect: | Kezlo & Associates |
| General Contractor: | SES |

Company Logo (insert .jpg in box below)



Important Notes:

- Please .pdf your completed entry form and email to bsagusti@barrhorstman.com.
- Please also email separately 2-3 of the best .jpg images of your project, for the slide presentation at the annual virtual presentation and for the DVASE website. Include a brief (approx. 4 sentences) summary of the project for the DVASE Awards Presentation with this separate email.

- Provide a concise project description in the following box (one page maximum). Include the significant aspects of the project and their relationship to the judging criteria.

Tyndall AFB tasked the project team with providing support for two new hanger doors. The new doors are approximately 100-feet wide. One side of the building is bi-parting doors and the other side is single parting. Mainstay was the engineer of record for civil design and structural design. The door support structure is a steel framed truss structure which is aligned with the profile of the existing building.

Superstructure Challenges:

- All structural systems were required to be designed for a hurricane force wind speed of 160 MPH per AFB standards.
- Very little existing documentation was available for the existing pre-engineered hanger structure. The hanger door support structures we designed as independent structures and foundations in order to avoid imposing loads on the existing building and evaluating the building for increased lateral loading.
- The tall and slender structure produced high overturning loads at the foundation interface.
- The steel truss system and foundations were designed in RAM structural system. Each connection was detailed utilizing RAM Connection and finite element analysis software.
- All exterior metal panels and roof materials were also replaced a part of the project.

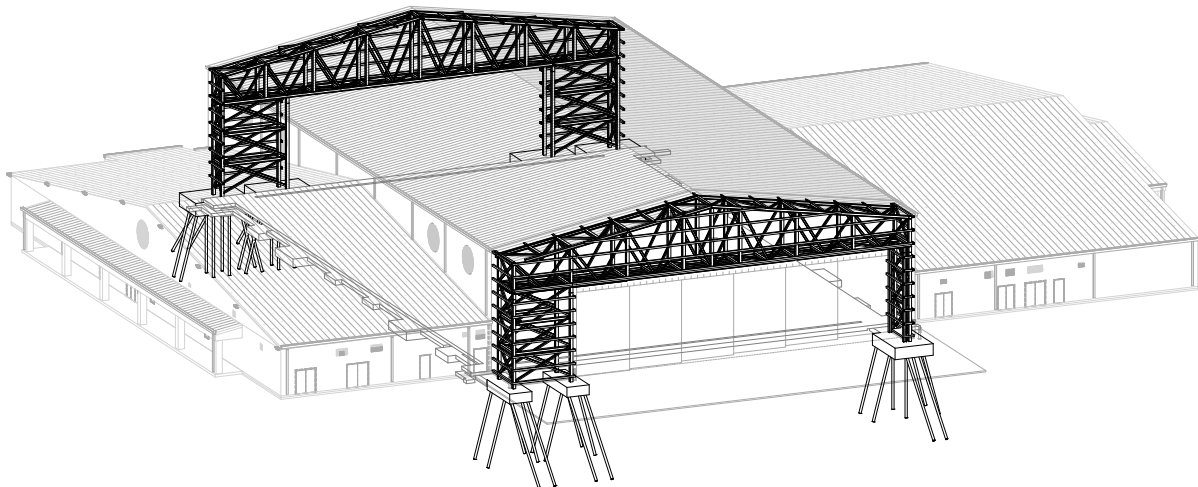
Foundation Challenges.

- The high loads and poor soils necessitated a deep foundation system. Helical piles were selected for use due to availability and ease of installation. Deep pile caps were required to transfer the loads from the structure to the piles. Spread footings and other deep foundation systems were explored during the design process.
- Door base rails were installed in the new concrete slab. The weight of the door was supported on the rails. The truss at the top of the door provided lateral support only.

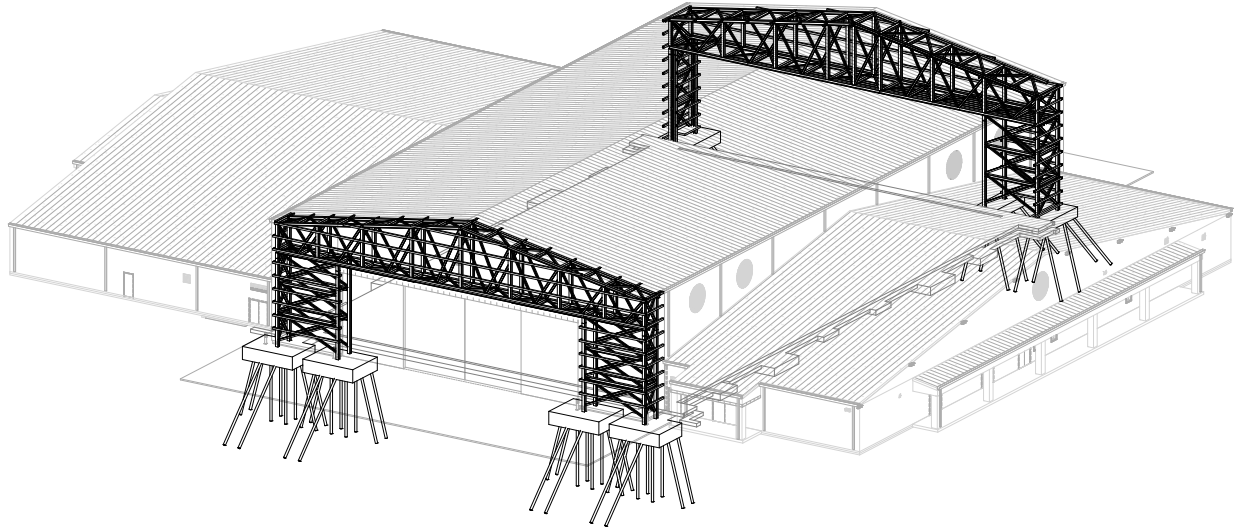
- The following 5 pages (maximum) can be used to portray your project to the awards committee through photos, renderings, sketches, plans, etc...



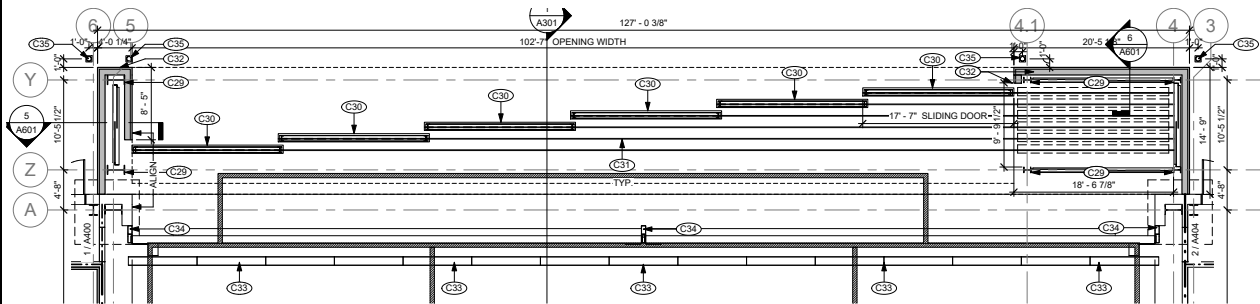
RENDERING - EXTERIOR



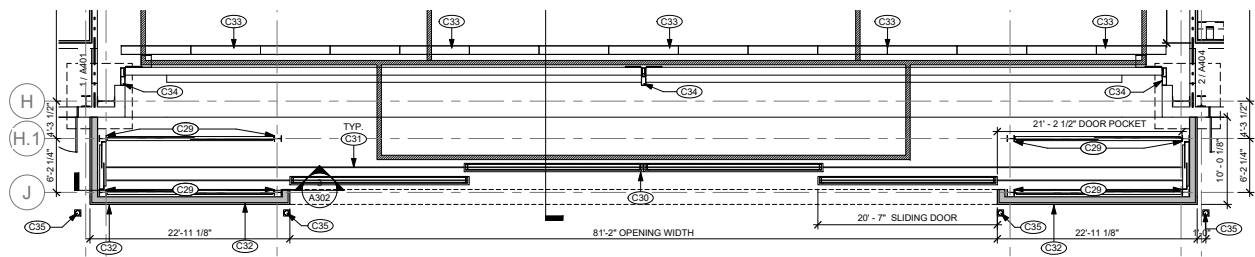
ISOMETRIC VIEW - NORTH DOOR



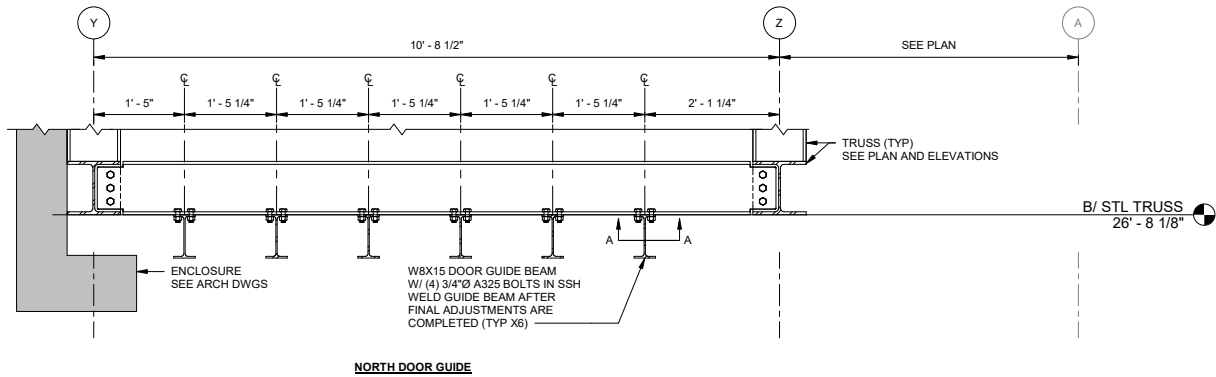
ISOMETRIC VIEW - SOUTH DOOR



FLOOR PLAN - NORTH DOOR

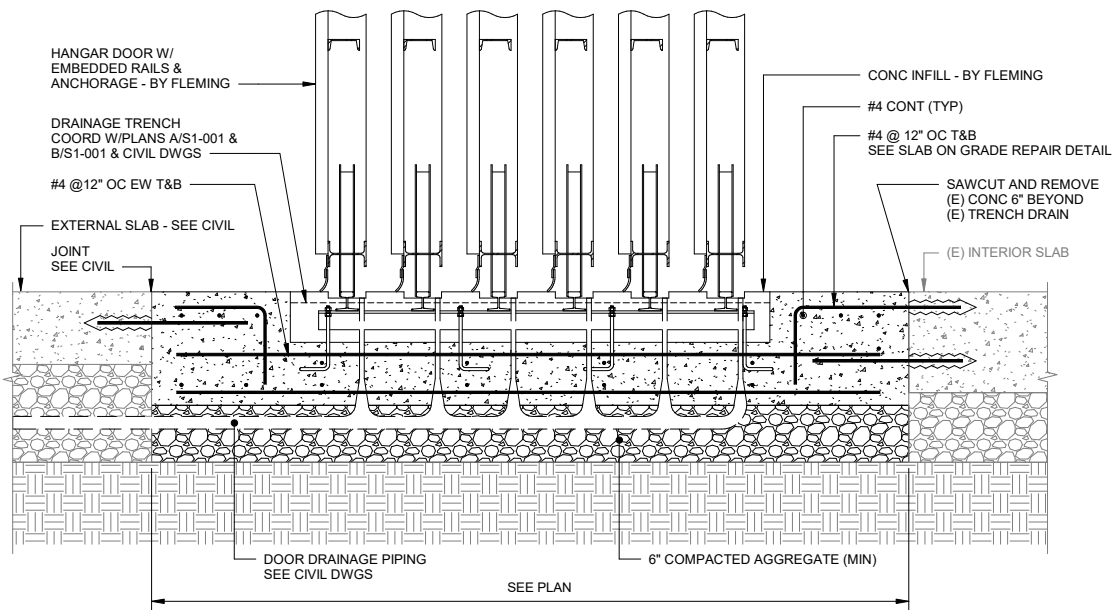


FLOOR PLAN - SOUTH DOOR



1 SECTION AT DOOR GUIDE
S7-022 SCALE: NTS

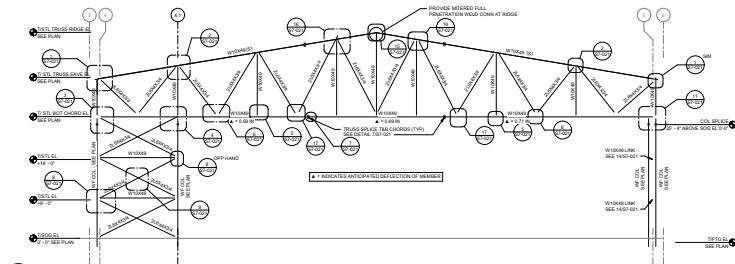
SECTION - DOOR GUIDE SUPPORT - ROOF



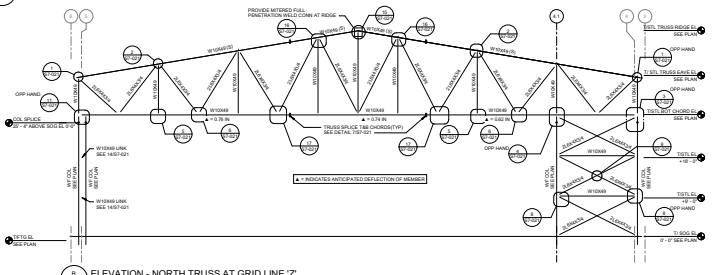
7
S7-011

DETAIL
HANGAR DOOR BOTTOM RAIL
SCALE: 3/4" = 1'-0"

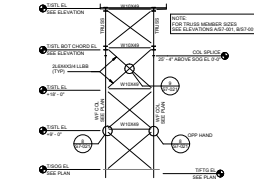
DETAIL - DOOR RAIL GUIDE SUPPORT - FOUNDATION



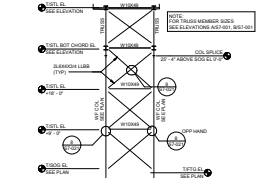
A ELEVATION - NORTH TRUSS AT GRID LINE 'Y'
SCALE: 1/8" = 1'-0"



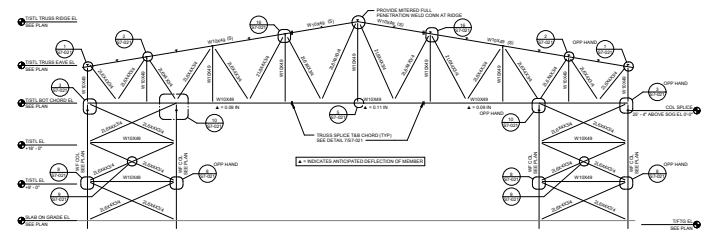
B ELEVATION - NORTH TRUSS AT GRID LINE 'Z'
SCALE: 1/8" = 1'-0"



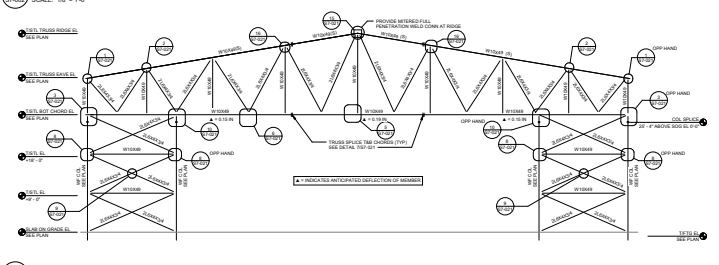
C ELEVATION - NORTH BRACING AT GRID LINE 'S'
SCALE: 1/8" = 1'-0"



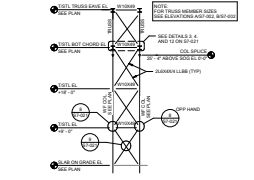
D ELEVATION - NORTH BRACING TRUSS AT GRID LINE '3'
SCALE: 1/8" = 1'-0"



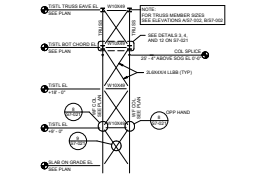
A ELEVATION - SOUTH TRUSS AT GRID LINE 'H.1'
SCALE: 1/8" = 1'-0"



B ELEVATION - SOUTH TRUSS AT GRID LINE 'J'
SCALE: 1/8" = 1'-0"



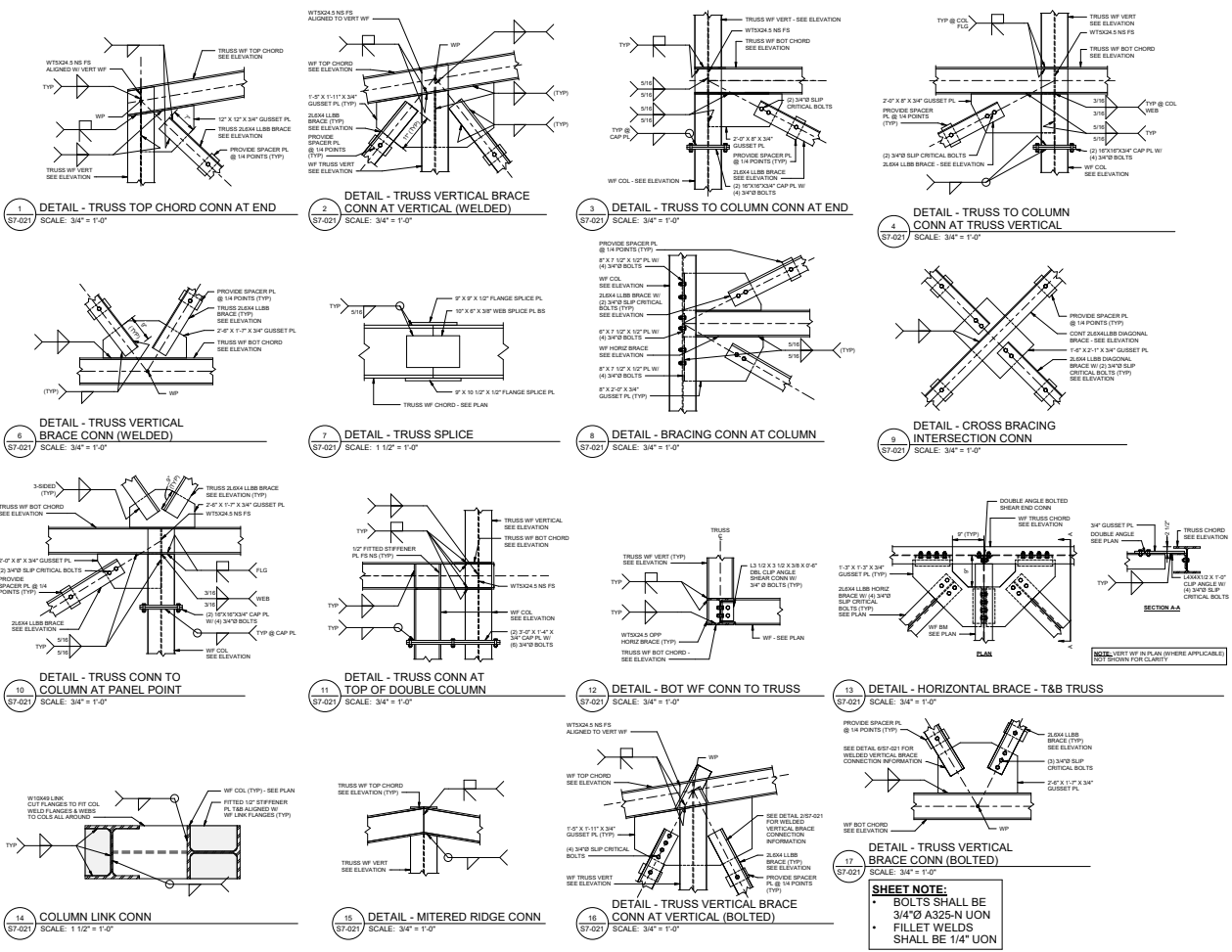
C ELEVATION - SOUTH BRACING AT GRID LINE 'I'
SCALE: 1/8" = 1'-0"



D ELEVATION - SOUTH BRACING AT GRID LINE 'S'
SCALE: 1/8" = 1'-0"

**TRUSS ELEVATIONS
NORTH DOOR
FRONT, REAR AND
SIDE FACES**

**TRUSS ELEVATIONS
SOUTH DOOR
FRONT, REAR AND
SIDE FACES**




TRUSS CONNECTION DETAILS

By signing, signatory agrees to the following and represents that he or she is authorized to sign for the structural design firm of record.

All entries become the property of DVASE and will not be returned. By entering, the entrant grants a royalty-free license to DVASE to use any copyrighted material submitted.

If selected as an award winner, you may be offered the opportunity to present your project at a DVASE breakfast seminar. Would you be willing to present to your colleagues? **YES** **NO**

Submitted by:

| | | |
|--|--|---------------------------------|
| Print name: Justin T. Ruby, PE | Signature:  | Date: 10-APR-2022 |
| Submitting Firm: | Mainstay Engineering Group, Inc. | |
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| Telephone: 215-646-5595 | Fax: | Email: jruby@megr.com |