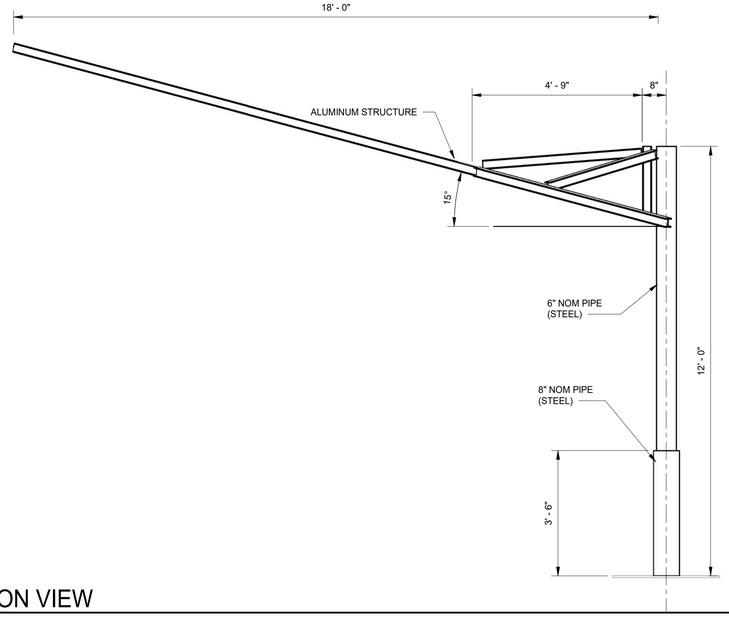
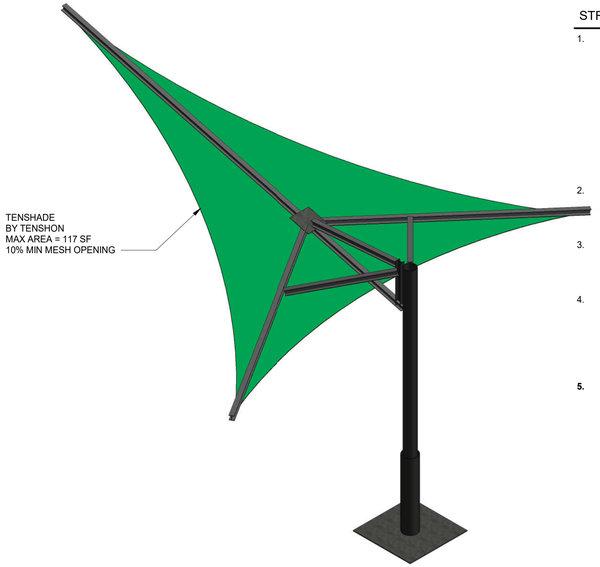


ELEVATION VIEW

SCALE: 1/2" = 1'-0"



{3D}

SCALE:

STRUCTURAL NOTES

1. **GENERAL REQUIREMENTS**
   - A. THE STRUCTURE DEPICTED IS GENERALLY NOTED AND CONSISTS OF NOMINAL 3X3 I-BEAM ALUMINUM SECTIONS OF PROPRIETARY SIZE CONNECTED TO A STEEL MAST THAT ROTATES AND CAN BE "LOCKED" IN VARIOUS POSITIONS. THE PROPRIETARY SYSTEM BY SHADE SAIL STRUCTURES, INC IS PATENT PENDING. ALL COMPONENTS HAVE BEEN CHECKED AND A SEALED SET OF CALCULATIONS, INCLUDING SIZES OF MEMBERS AND CONNECTION DETAILS HAS BEEN PROVIDED TO THE OWNER.
   - B. THE STRUCTURE HAS BEEN DESIGNED FOR USE WITH A "TENSHADE" BY TENSHON. THIS FABRIC HAS AN APPROXIMATE WEIGHT OF 0.1 PSF AND HAS A MINIMUM MESH OPENING OF 10%. GROSS AREA OF THE FABRIC SHADE IS 117 SQUARE FEET.
   - C. ALTHOUGH THE STRUCTURE HAS BEEN DESIGNED FOR THE WIND LOADS NOTED BELOW, THE SHADE MUST BE REMOVED WHEN HIGH WINDS, SNOW OR SEVERE WEATHER IS FORECASTED. THE SHADE IS NOT DESIGNED FOR SNOW LOADS. THE ENGINEER HOLDS NO RESPONSIBILITY FOR MISUSE OF THE STRUCTURE, INCORRECT INSTALLATION, USE OF OTHER SHADES THAN THOSE PERMITTED OR NEGLIGENCE FROM THE END USER OR INSTALLER. THE STRUCTURE SHALL BE INSPECTED REGULARLY TO VERIFY ALL PIECES ARE IN WORKING ORDER AND FREE OF VANDALISM, CORROSION OR OTHER DAMAGE.
   - D. FOUNDATIONS TO BE THE RESPONSIBILITY OF A LOCAL PROFESSIONAL ENGINEER. FOUNDATIONS SHALL BE DESIGNED TO RESIST THE LOADS NOTED. MINIMUM CONCRETE STRENGTH IS 2,500 PSI WHEN PUT INTO SERVICE.
2. **APPLICABLE CODES AND STANDARDS**
   - A. "VIRGINIA UNIFORM STATEWIDE BUILDING CODE" (2015 INTERNATIONAL BUILDING CODE).
   - B. AISC, "MANUAL OF STEEL CONSTRUCTIONS - ALLOWABLE STRESS DESIGN".
   - C. STRUCTURAL WELDING CODE, AWS D1.1.
   - D. THE ALUMINUM ASSOCIATE, "ALUMINUM DESIGN MANUAL - 2010"
3. **DESIGN LOADS**
   - A. WIND LOAD
     - a. ULTIMATE WIND SPEED, V_{ULT} — 115 MPH WITH SAIL, 200 MPH WITHOUT SAIL ATTACHED
     - b. RISK CATEGORY — I
     - c. EXPOSURE CATEGORY — B
4. **MATERIALS**
   - A. ALUMINUM - 6061 - T6
   - B. STRUCTURAL STEEL
     - a. PLATE, ANGLE, CHANNEL — ASTM A36
     - b. STRUCTURAL BOLTS — A304 SS, GRADE 5
     - c. PIPE — ASTM A53, TYPE S, GRADE B
     - d. WELDING ELECTRODES — E70XX
   - C. COATING - ALL METAL IS POWDER COATED.
5. **GEOTECHNICAL**
   - A. A COMPACTED POROUS BACKFILL SHALL BE PROVIDED AT THE BASE OF THE STRUCTURE FOR DRAINAGE. FINAL DEPTH SHALL BE DETERMINED BY THE FOUNDATION ENGINEER.

△1

△2

REVISIONS:

1	LOADING CLARIFICATION	12/11/20
2	GEOTECHNICAL NOTE	03/01/21
3	ALT BASE PLATE	09/14/23

Digitally signed by Jeremy L Lucas
DN: CN=JL Civil, O=Senior Engineer, OU=Master Engineers and Designers Inc, C=US
Reason: I am the author of this document
Date: 2023-09-14 13:22:42
Foxit PhantomPDF Version: 9.7.5

COMMONWEALTH OF VIRGINIA
JEREMY LUCAS
Lic. No. 44991
09/14/2023
PROFESSIONAL ENGINEER

MASTER ENGINEERS & DESIGNERS
904 Lakeside Drive, Lynchburg, VA 24501
434-846-1350 Fax: 434-846-1351

SHADE SAIL STRUCTURE, INC

350 LANDON ROAD
EVINGTON, VA 24550

GENERAL STRUCTURAL REQUIREMENTS

DATE ISSUED:	11/04/2020
SCALE:	AS NOTED
JOB. NO.	558-1450
DESIGNED:	MCS
DRAWN:	MCS
CHECKED:	JLL
APPROVED:	JLL

DRAWING NO.
S1
SHEET OF
REVISION 3

COLUMN DETAIL

COLUMN DETAIL IF MOUNTING IN GROUND CONCRETE FOUNDATION

BASE OPTIONS - FOUNDATION REQUIREMENTS

SCALE: 3/4" = 1'-0"

FOUNDATION DESIGN FOR BOTH BASE PLATE OPTION AND SLEEVED (BURIED) OPTION BY OTHERS. REACTIONS ARE PROVIDED AS FOLLOWS AND CAN BE IN ANY DIRECTION.

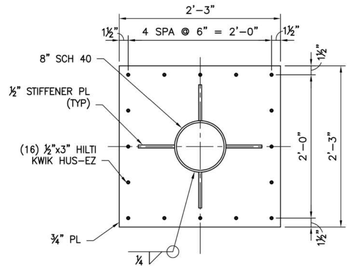
WORKING STRESS:
SHEAR - 181 LBS
MOMENT - 8,500 LB FT
UPLIFT - 300 LBS

ULTIMATE LOADS:
SHEAR - 302 LBS
MOMENT - 14,000 LB-FT
UPLIFT - 550 LBS

PLAN VIEW

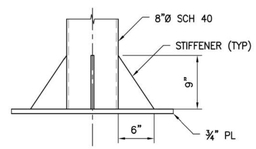
SCALE: 3/8" = 1'-0"

△3



PLAN

SCALE: 1"=1'-0"



ELEVATION

SCALE: 1"=1'-0"

NOTES:
WORK WITH SHADE SAIL DRAWING S1 DATED 11/04/2020 REV 2 03/01/21. GENERAL NOTES, REQUIREMENTS AND DISCLAIMERS FOUND ON S1 APPLY.

MIN THICKNESS OF CONCRETE IS 4". NOT TO BE CLOSER THAN 9" TO A JOINT.

ALTERNATE BASE PLATE

SCALE: 12" = 1'-0"