



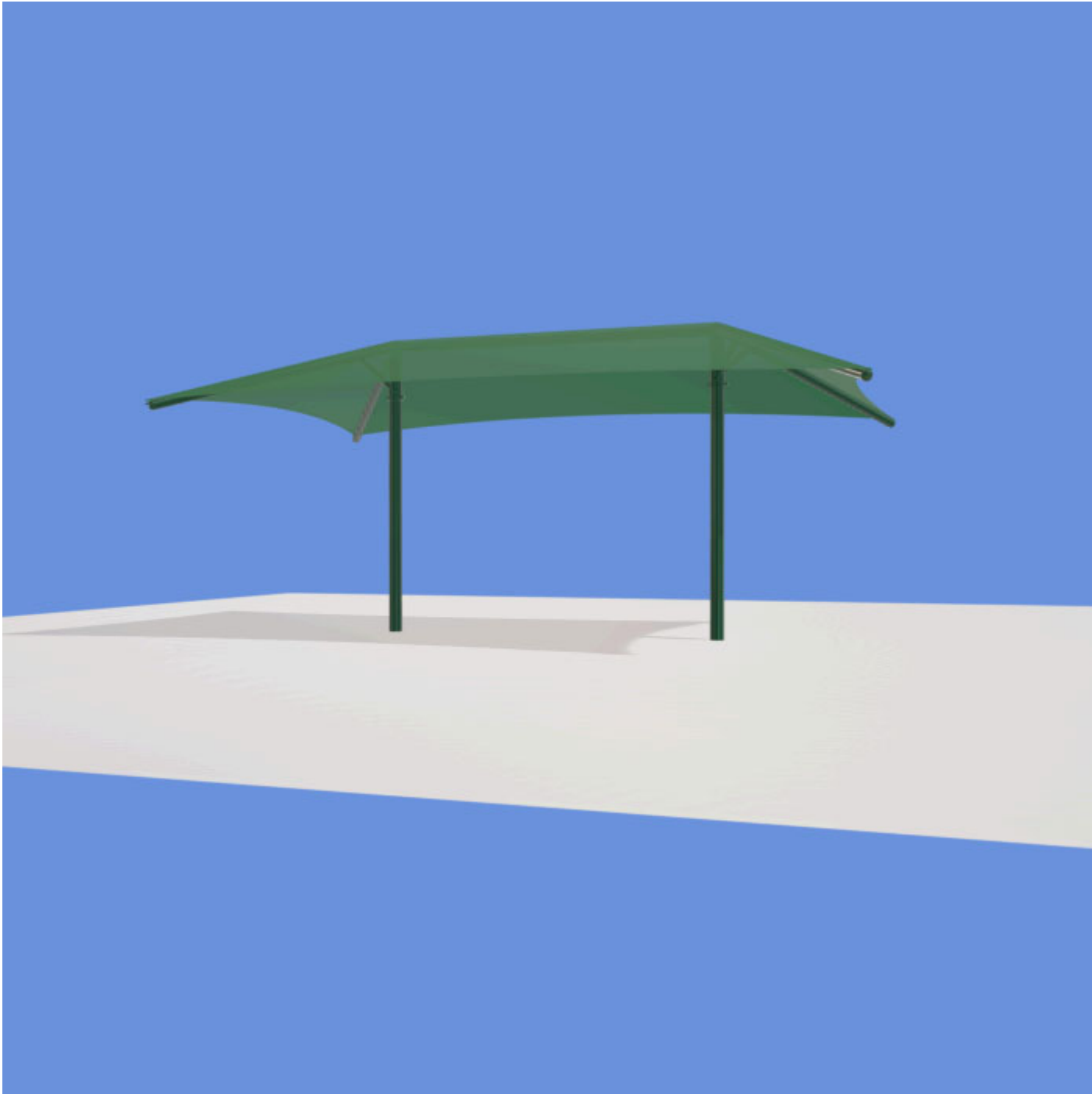
PE-66873-NONST-2026-000000029

**Town of Tyrone—Dorthea Redwine
Pickleball Sunshade**

Submitted By:

Alex Klebansky





GENERAL NOTES

DESIGN LOADS

BUILDING CODE	INTERNATIONAL BUILDING CODE 2018
LIVE LOADS	5 PSF
SNOW LOAD	5 PSF
WIND LOADS	115 MPH*
	3-Sec. Gust, RISK CATEGORY II & EXPOSURE C

* 115 MPH ACCORDING TO THE BASIC WIND SPEED MAPS OF ASCE 7-16 IS EQUIVALENT TO THE ALLOWABLE STRESS DESIGN WIND SPEED OF 90 MPH ACCORDING TO ASCE 7-05 AND IBC 2018 EQ 16-33.

STRUCTURAL STEEL

- ALL STRUCTURAL SHAPES SHALL BE COLD FORMED HSS ASTM A500 GRADE C. UNLESS OTHERWISE NOTED. TYPICAL MECHANICAL PROPERTIES FOR HSS PRODUCTS:

SQUARE AND RECTANGULAR

50,000 PSI YIELD / 62,000 PSI TENSILE

ROUND PIPE

50,000 PSI YIELD / 62,000 PSI TENSILE
- ALL GALVANIZED STEEL TUBE PRODUCTS ARE MANUFACTURED PER ASTM A500, TYPICAL MECHANICAL PROPERTIES ACHIEVED FOR GALVANIZED TUBE PRODUCTS:

ROUND TUBE

50,000 PSI YIELD / 62,000 PSI TENSILE
- ALL PLATES SHALL COMPLY WITH ASTM A572 GRADE 50.
- ALL STEEL TUBING SHALL BE TRIPLE COATED FOR RUST PROTECTION USING THE IN-LINE ELECTROPLATING COAT PROCESS. TUBING SHALL BE INTERNALLY COATED WITH ZINC AND ORGANIC COATINGS TO PREVENT CORROSION AS MANUFACTURED BY ALLIED TUBE & CONDUIT.
- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS.
- ALL SHOP WELDS SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1 SPECIFICATIONS. ALL WELDS SHALL BE CONTINUOUS WHERE LENGTH IS NOT GIVEN, UNLESS OTHERWISE SHOWN OR NOTED ON DRAWINGS. ALL WELDS SHALL DEVELOP THE FULL STRENGTH OF THE WEAKER MEMBER. ALL WELDS SHALL BE MADE USING E70XX .045 WIRE.
- SHOP CONNECTIONS SHALL BE WELDED UNLESS NOTED OTHERWISE. FIELD CONNECTIONS SHALL BE AS INDICATED ON THE DRAWINGS (IF REQUIRED). ALL FILLET WELDS SHALL BE A MINIMUM OF 3/16" UNLESS OTHERWISE NOTED. FIELD WELDS SHALL NOT BE ALLOWED.
- ALL HIGH STRENGTH BOLTS SHALL COMPLY WITH ASTM F3125 GRADE A325 (GALVANIZED). ALL NUTS SHALL COMPLY WITH ASTM A563DH, AND WASHERS SHALL COMPLY WITH ASTM F436.
- ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION.
- ALL STAINLESS STEEL BOLTS / STUDS SHALL COMPLY WITH ASTM F-593, ALLOY GROUP 1 OR 2 ALL NUTS SHALL COMPLY WITH ASTM F-594 ALLOY GROUP 1 OR 2.
- ALL STRUCTURAL STEEL SHALL BE POWDER COATED WITH ONE SHOP COAT (2.5 MILS MIN.) OF ZINC-RICH PRIMER, UNDERCOAT, AND FINISH COAT, OR EQUIVALENT PAINT SYSTEM. THIS COAT IS A WEATHER RESISTANT POWDER COATING BASED ON POLYESTER TGIC (MANUFACTURED BY SHERWIN WILLIAMS, ASKO NOBEL, PPG OR TIGER DRYLAC). TO ACHIEVE OPTIMUM ADHESION, IT IS RECOMMENDED THAT THE PROPER TREATMENT AND DRYING TAKE PLACE BEFORE COATING. POLYESTER POWDER (TGIC) SPECIFICATIONS SHALL BE AS FOLLOWS:

PENCIL HARDNESS (ASTM D-3363).

HUMIDITY (ASTM D-2247).

SOLVENT RESISTANCE (PCI METHOD) - 50 DBL RUBS SL. SOFTNESS.

FABRIC SPECIFICATION

- FABRIC SHALL BE A HIGH DENSITY POLYETHYLENE WITH ULTRA VIOLET ADDITIVES, WITH MONOFILAMENT AND TAPE CONSTRUCTION GIVING A STABLE MATERIAL AND RACHEL KNITTED TO ENSURE MATERIAL WILL NOT UNRAVEL IF CUT
- TEAR STRENGTH

SOLID COLORS

WARP 220.4622 LB

WEFT 462.9707 LB

STRIPE COLORS

WARP 182.9836 LB

WEFT 401.2413 LB

BURST STRENGTH

37.7098 PSIA

33.0686 PSIA

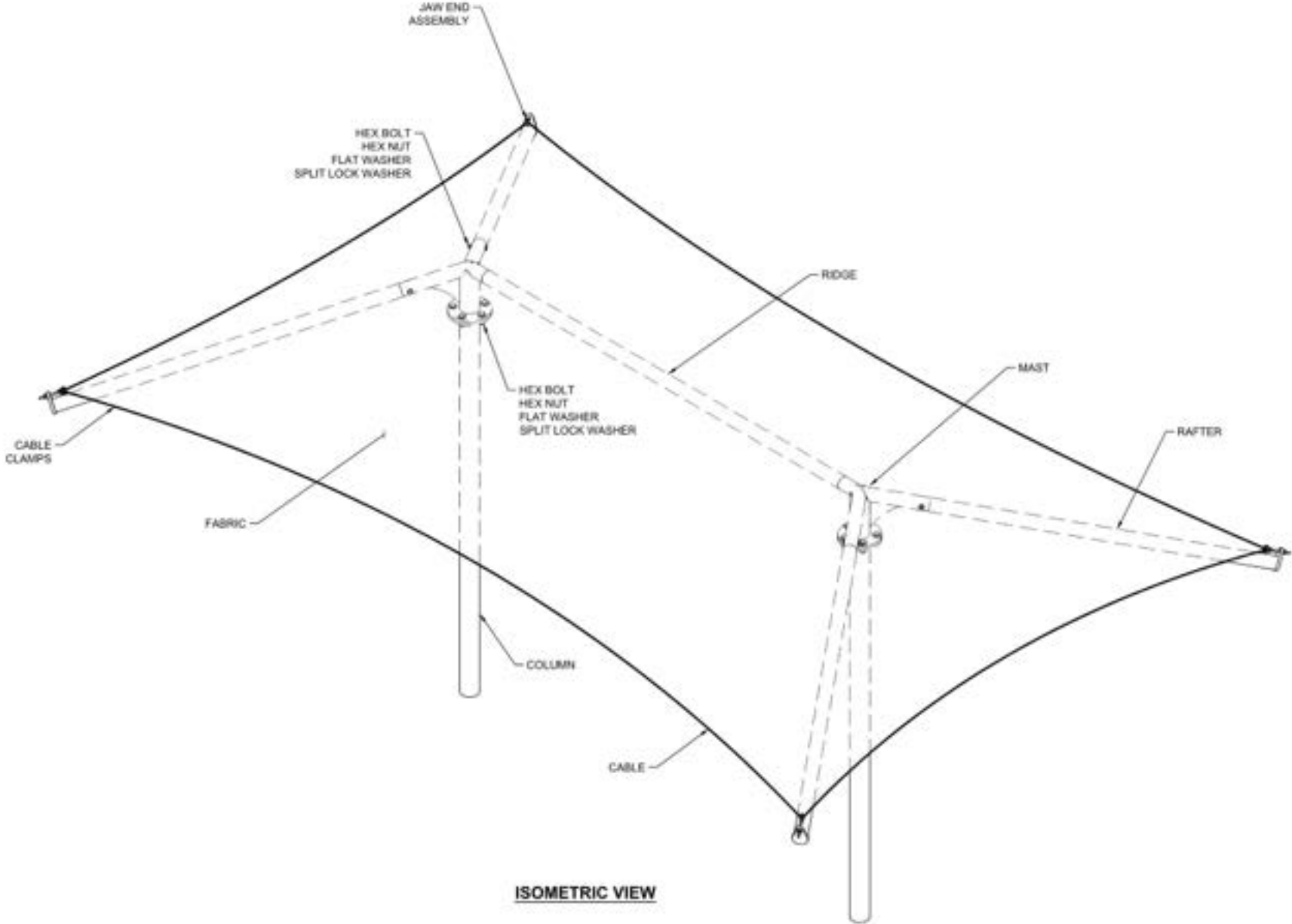
FADING

MINIMUM FADING AFTER 5 YEARS

LIFE EXPECTANCY: A MINIMUM OF 8 YEARS CONTINUOUS EXPOSURE TO THE SUN
- FIRE TEST ON FABRIC: NFPA 701 TEST 2 AND ASTM E 84
- THREAD-PTFE (TEFLON) USED MEET THE FOLLOWING SPECIFICATIONS: HIGH STRENGTH, LOW SHRINKAGE, WIDE TEMPERATURE RANGE, FLEX ABRASION RESISTANT AND UV RADIATION IMMUNITY. LOCKSTITCH - 1200 DENIER. CHAINSTITCH THREAD - 2400 DENIER.

AIRCRAFT CABLE

- WIRE ROPE CABLE SHALL BE 7x19 STRAND CORE GALVANIZED WIRE ROPE WITH A BREAKING STRENGTH VALUE OF 7,000 LBS (1/4" DIAMETER)
- CABLES SHALL BE FED THROUGH THE FABRIC SLEEVES AROUND THE PERIMETER OF THE CANOPY AND TENSIONED UNTIL THE FABRIC PANELS (DESIGNED PURPOSEFULLY UNDERSIZED) REACH A TAUT APPEARANCE. ANY LONG TERM CABLE SAG SHALL BE MINIMIZED DURING THE MAINTENANCE RE-TIGHTENING VISITS AS REQUIRED.



LIST OF MATERIALS

ITEM	QTY	DESCRIPTION	SMI PART No.
ANCHOR ROD	8	ANCHOR ROD Sets,5/8"x24" F1554 GR55	307611
BOLT	4	BOLT,HEX,1/2"-13 x 4-1/2",GLV ASTM A325	309108
HEX NUT	4	NUT,HEX,1/2",GLV 1213 A 194 2H	308069
FLAT WASHER	8	WASHER,FLAT,1/2" GLV ASTM F436	307622
WASHER	4	WASHER,SPLIT LOCK, 1/2",GLV	307625
BOLT	10	BOLT,HEX,3/4"-10 x 3",GLV ASTM A325	308073
HEX NUT	10	NUT,HEX,3/4",GLV A194 2H	307687
WASHER	20	WASHER,FLAT,3/4",GLV ASTM F436	307624
SPLIT LOCK WASHER	10	WASHER,SPLIT LOCK, 3/4",GLV	307832
JAW END	4	JAW,W/BNC RH&HDW,1/2"x6" DF GLV	308046
CABLE CLAMP	4	CLAMPS,CABLE,1/4" DF GLV	307633
COLUMN	2	5.0 GA 07 RD TUBING	SPUBPC-500-125
RAFTER	4	3.5 GA 08 RD TUBING	SPR-350-QRE-97
RIDGE	1	3.500 GA 08 ROUND TUBING	RID-350-126
CROWN	2	UNPAINTED MAST, SIHCP-F3-350-QRE	SIHCP-F3-350-QRE
FABRIC	1	FABRIC SHADESURE FOREST GREEN	200000SFG
CABLE	1	WIRE ROPE, 7x19, 1/4", GALV	307604

NOTICE

- FABRIC TOP NEEDS TO BE REMOVED IF SNOW EXCEEDING 5 PSF IS ANTICIPATED
- FABRIC TOP NEEDS TO BE REMOVED IF WINDS EXCEEDING 115 MPH ARE ANTICIPATED. SEE NOTES FOR DESIGN LOADS

CODE ANALYSIS

BUILDING	OCCUPANCY	CONSTRUCTION TYPE	AREA (SQFT)	OCCUPANT LOAD
SHADE STRUCTURE 14'-0" x 22'-0"	U	V-B	308	N/A

THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF USA SHADE AND FABRIC STRUCTURES AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.



CORPORATE HEADQUARTERS
2580 ESTERS BLVD., SUITE 100
DFW AIRPORT, TX 75261
800-966-5005

CERTIFICATIONS:

IAS CERTIFICATION No: FA-428
CLARK COUNTY MANUFACTURER CERTIFICATION NUMBER (NEVADA): 355

CUSTOMER:

Doug Howard

PROJECT NAME:

Town of Tyrone - Pickleball Sunshade

LOCATION:

Tryone GA

PROJECT NUMBER:

Q-107113

STRUCTURE TYPE:

2 Post Hip QRE 227

SIZE:

14' 0" x 22' 0" x 8' 0"

SCALE: AS NOTED

DRAWING SIZE

B

ENG	MB
CHK	MB
DRW	QD
DATE	
DESCRIPTION	RELEASE FOR CONSTRUCTION
REV	NC

Eng. By:	MB
Design By:	QD
Approved By:	MB
DRAWING DESCRIPTION:	
NOTES / LOM	
DWG.	
PAGE	
1000	
REV	
NC	
4	

TABLE OF DIMENSIONS									
W	L	A	H	C	HT	CL	CW	RL	R
14'-0"	22'-0"	11' 6"	8' 0"	2' 8"	10' 8"	1' 5"	0' 11"	8' 1"	10' 6"

TABLE OF DIMENSIONS KEY	
W	WIDTH
L	LENGTH
A	WIDTH BETWEEN COLUMNS
H	ENTRY HEIGHT
C	SHADE HEIGHT
HT	TOTAL HEIGHT
CL	FABRIC CATENARY - LENGTH
CW	FABRIC CATENARY - WIDTH
RL	RAFTER LENGTH
R	RIDGE LENGTH



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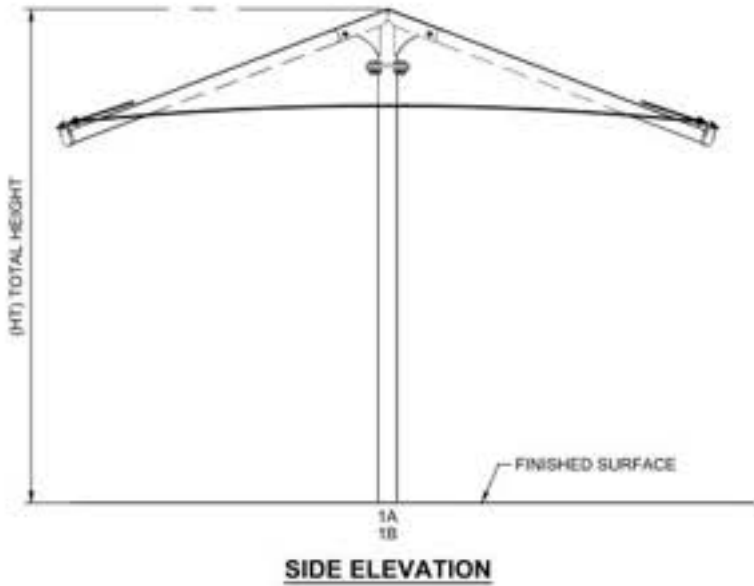
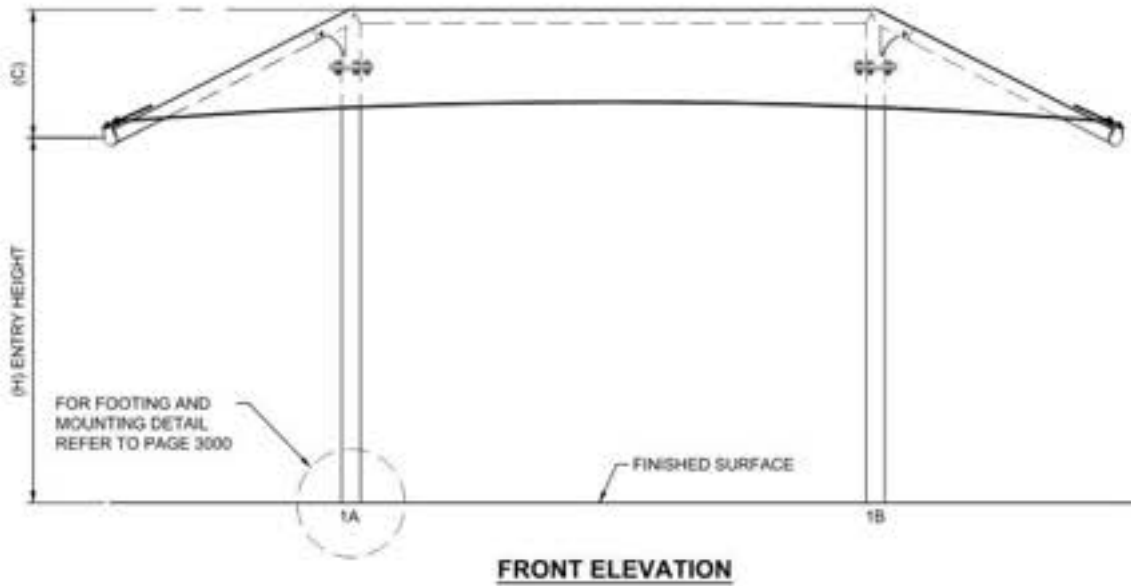
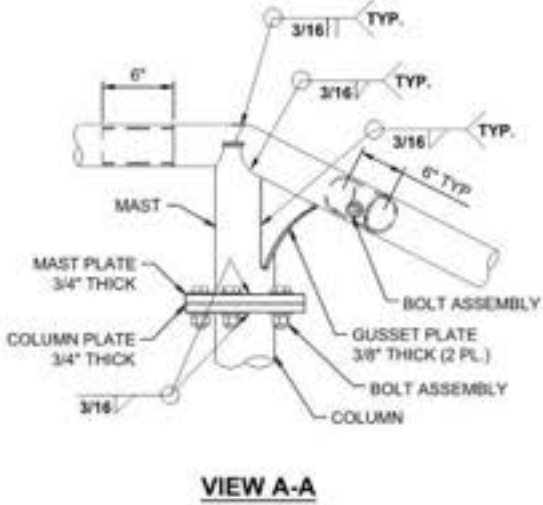
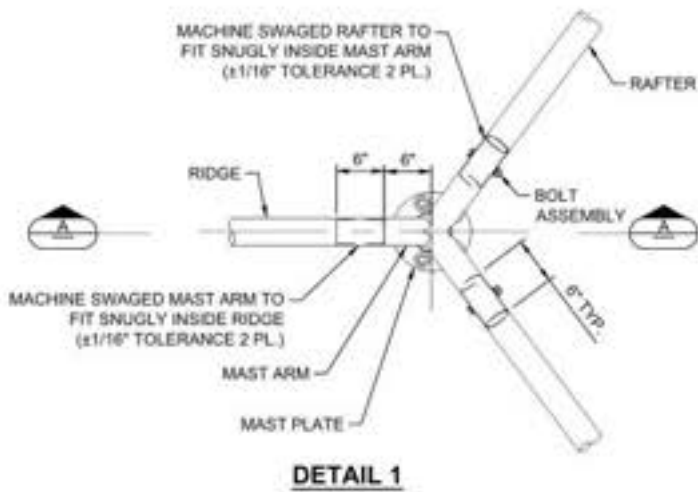
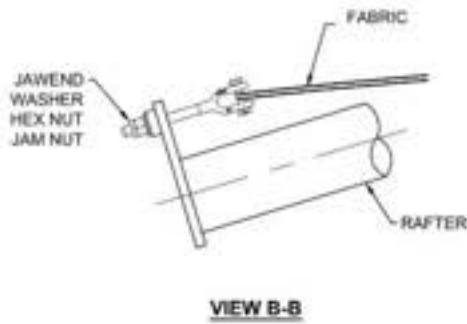
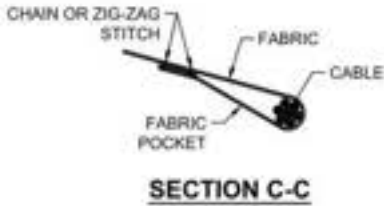
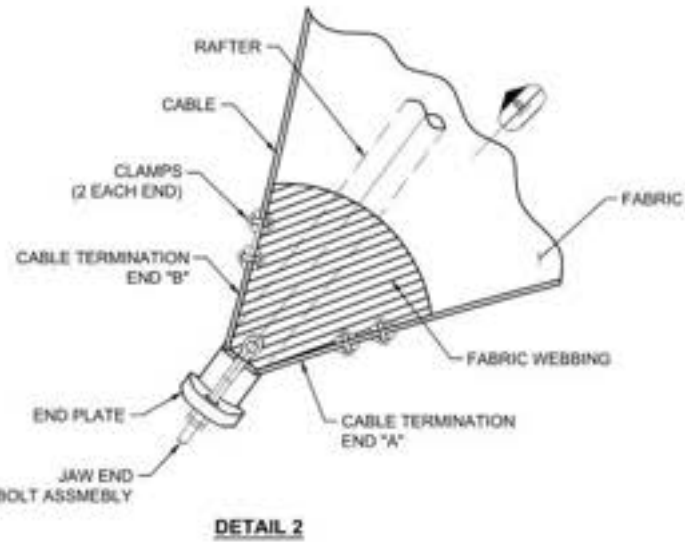
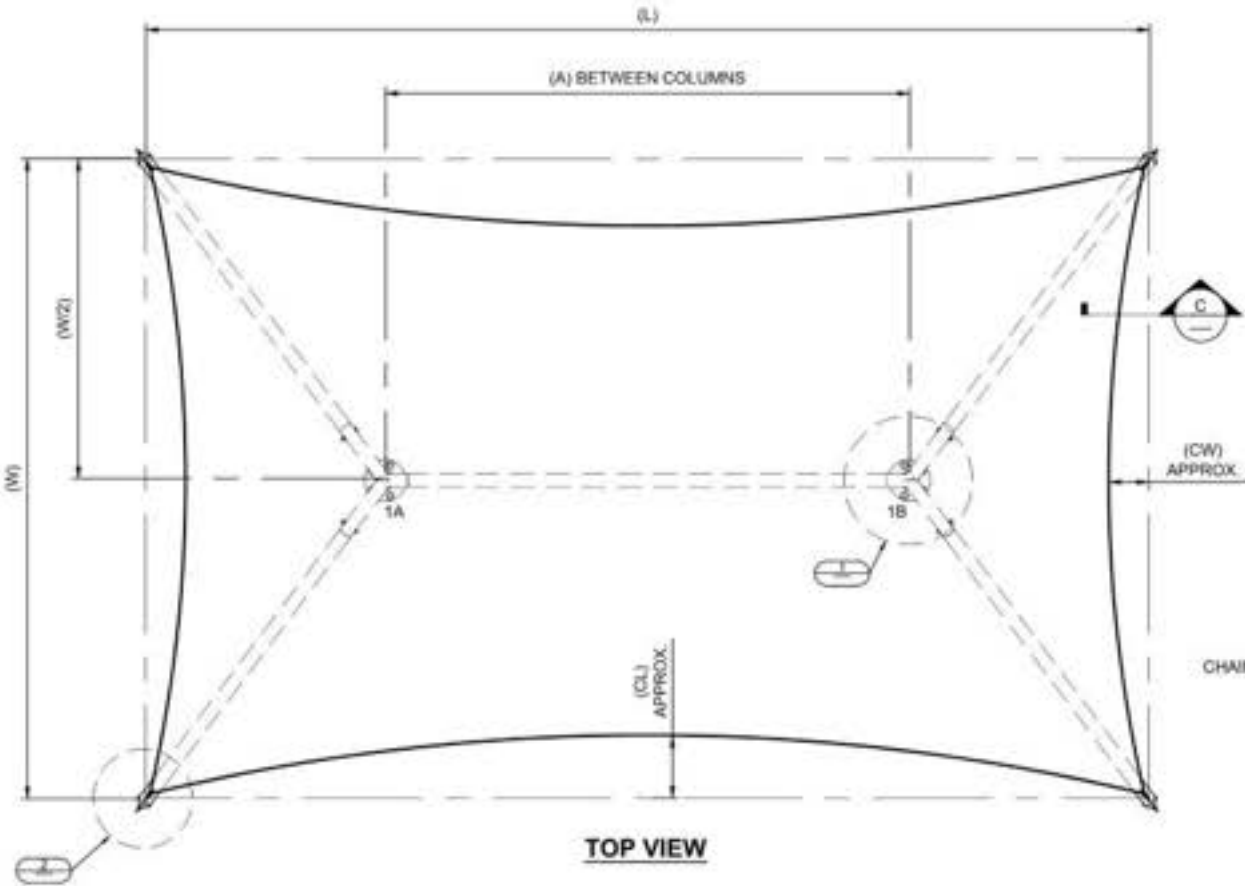
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LOCATION:
Tryone GA
PROJECT NUMBER:
Q-107113

STRUCTURE TYPE:
2 Post Hip QRE 227
SIZE:
14' 0" x 22' 0" x 8' 0"

SCALE: AS NOTED
DRAWING SIZE

B



Eng. By:	MB
Design By:	QD
Approved By:	MB
DRAWING DESCRIPTION:	
ELEVATIONS AND DETAILS	
DWG.	
PAGE	2000
REV	NC
	5

REINFORCED CONCRETE NOTES

1. CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE ACI 301 AND BUILDING CODE ACI 318. CONCRETE SPECIFICATIONS SHALL BE AS FOLLOWS:
- 28 DAY STRENGTH: 2500 PSI

• SLUMP: 3-5

• PORTLAND CEMENT SHALL CONFORM TO C-150

• AGGREGATE SHALL CONFORM TO ASTM C-33
2. ALL REINFORCEMENT STEEL SHALL CONFORM TO ASTM A-615 GRADE 60; AND SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ACI SPECIFICATION FOR STRUCTURAL CONCRETE ACI 301, ACI DETAILING MANUAL AND CRSI MANUAL OF STANDARD PRACTICE.
3. ALL ANCHOR BOLTS SET IN NEW CONCRETE (WHEN APPLICABLE) SHALL COMPLY WITH ASTM F-1554 GRADE 55 (GALVANIZED).
4. ALL NON-SHRINK GROUT SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 5000 PSI, AND SHALL COMPLY THE REQUIREMENTS OF ASTM C109, ASTM C939, ASTM C1090, ASTM C1107, WHEN APPLICABLE.
5. SOIL PARAMETERS FOR FOOTING ANALYSIS; TABLE 1806.2, CLASS : 5 - 1500(PSF)
6. FOR SPREAD FOOTING, EDGE OF COLUMN OR ANCHOR BOLTS MUST BE SET AT LEAST 12" FROM THE EDGE OF SPREAD FOOTING EDGE.
7. SPREAD FOOTING ALLOWED TO BE ROTATED AS REQUIRED.
8. ANCHOR ROD Sets,5/8"x24" F1554 GR55, Qty 8

TABLE FOR SPREAD FOOTING								
LENGTH	THICKNESS	TOP AND BOTTOM REINFORCEMENT				MIN. COLUMN EMBEDMENT (EMBED)	MIN. ANCHOR EMBEDMENT (RECESS. & SURFACE)	
(FT)	(FT)	QTY.	SIZE	SPACING (IN)		(IN)	(IN)	
3.50	3.00	5.00	#5	@	9.00	O.C.E.W.	33	19

TABLE FOR NON-CONSTRAINED DRILLED PIER FOOTING								
DIAMETER	DEPTH	VERTICAL REBAR		TIES			MIN. COLUMN EMBEDMENT (EMBED)	MIN. ANCHOR EMBEDMENT (RECESS. & SURFACE)
(FT)	(FT)	QTY.	SIZE	QTY.	Ø LOOP (FT)	SIZE	(IN)	(IN)
2.00	4.00	6.00	#6	8	1.50	#3	36	19



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2580 ESTERS BLVD., SUITE 100
DFW AIRPORT, TX 75261
800-966-5005

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CUSTOMER:

Doug Howard

PROJECT NAME:

Town of Tyrone - Pickleball Sunshade

LOCATION:

Tryone GA

PROJECT NUMBER:

Q-107113

STRUCTURE TYPE:

2 Post Hip QRE 227

SIZE:

14' 0" x 22' 0" x 8' 0"e

SCALE: AS NOTED

DRAWING SIZE

B

ENG	MB
CHK	MB
DRW	QD
DATE	
DESCRIPTION	
RELEASE FOR CONSTRUCTION	
REV	NC

Eng. By:	MB
Design By:	QD
Approved By:	MB

DRAWING DESCRIPTION:

FOOTING DETAILS

DWG.

PAGE

3000

REV

NC

6

NOTE: ADDITIONAL
INSTALLATION COSTS
FOR SPREAD FOOTING

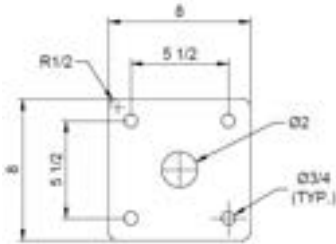
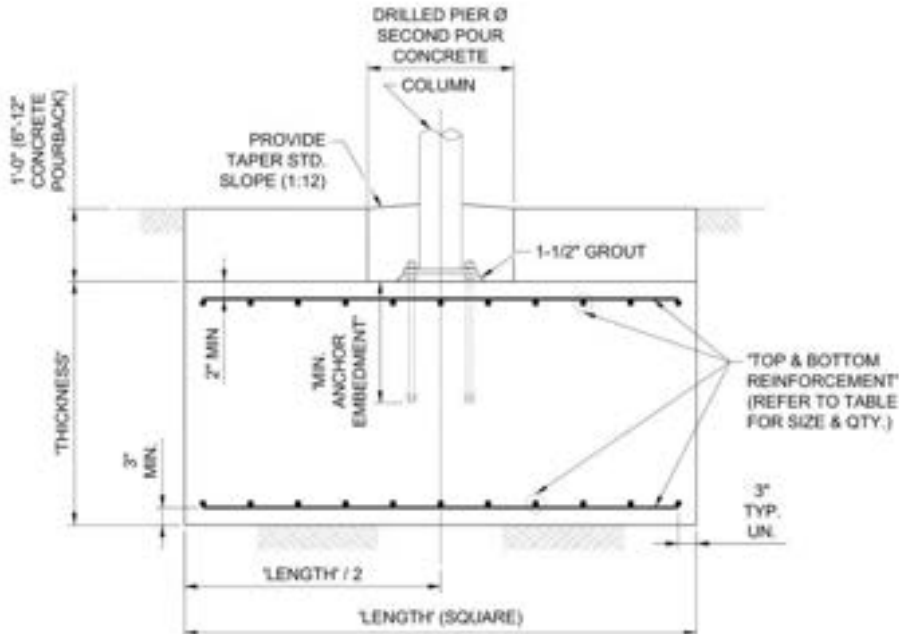


PLATE DETAIL

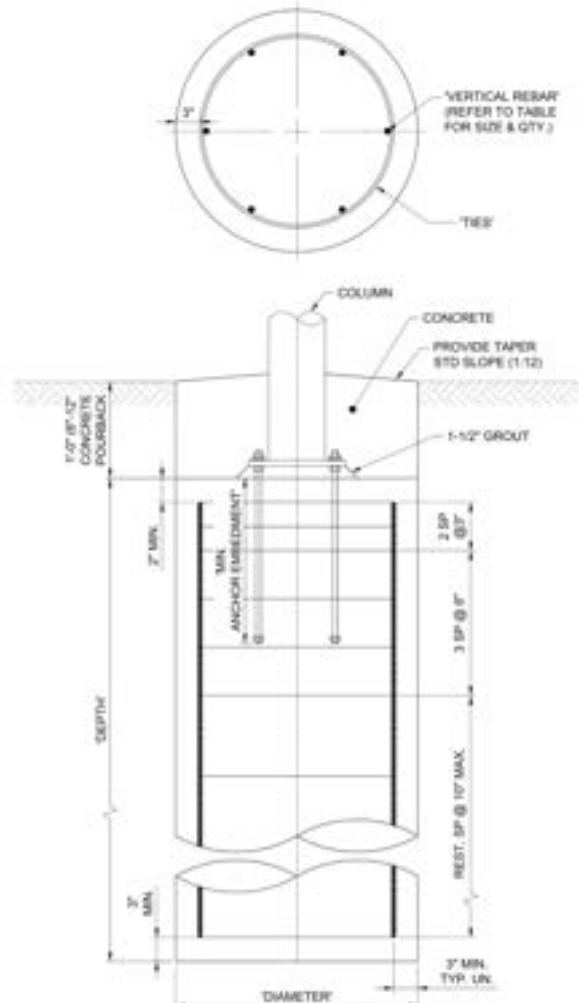
PLT-005

THK= 3/4" (A572 GR. 50)



SPREAD FOOTING TYPE

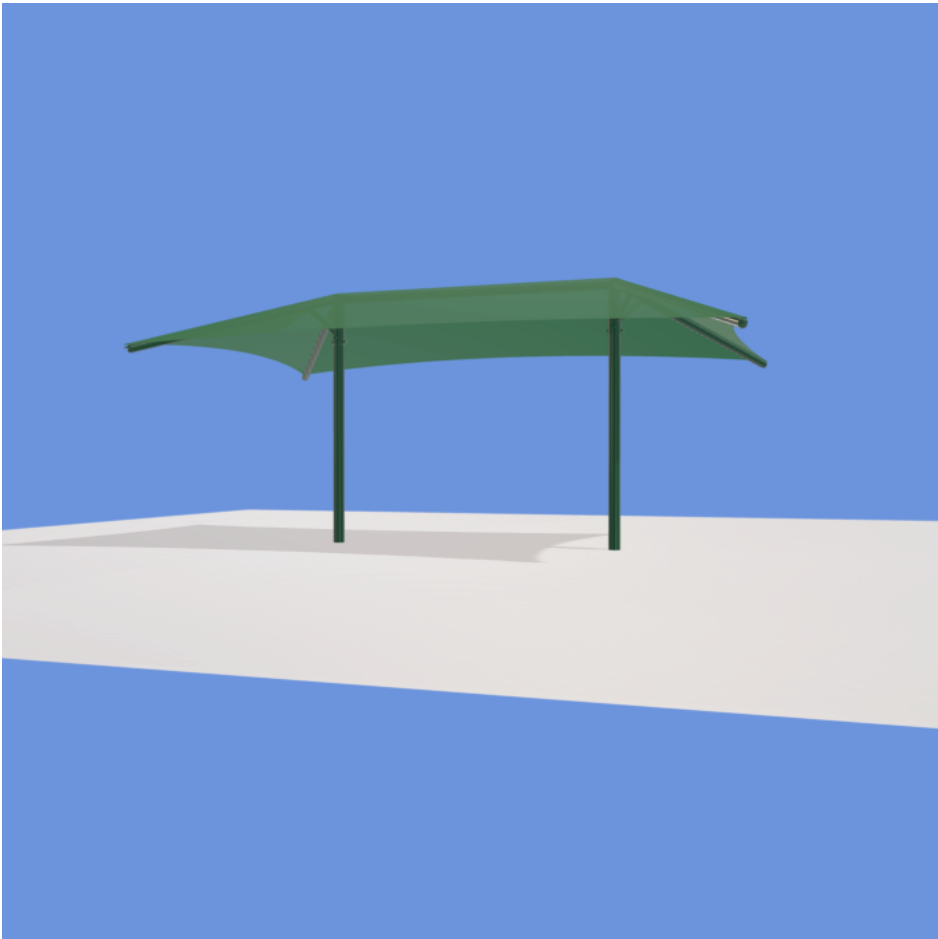
RECESSED BASE PLATE
SCHEMATIC VIEW ONLY
REFER TO TABLE FOR VARIABLE DIMENSIONS



DRILLED PIER FOOTING TYPE

RECESSED BASE PLATE
SCHEMATIC VIEW ONLY
REFER TO TABLE FOR VARIABLE DIMENSIONS & QTY.

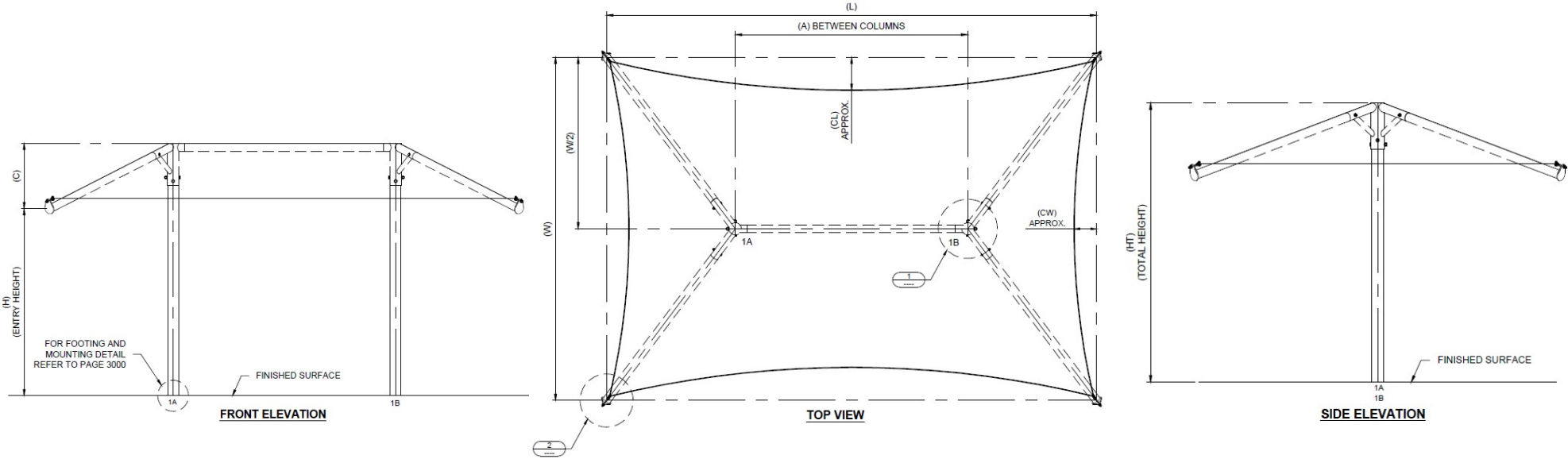
CUSTOMER NAME: Doug Howard
PROJECT NAME: Town of Tyrone - Pickleball Sunshade
LOCATION: Tryone GA
CONFIGURATION #: Q-107113



Alex Klebansky
Playworx
8014 Cumming Hwy Ste 403
#313
Canton, GA 30115
alex@playworx.com
404-382-6242

CUSTOMER NAME:
PROJECT NAME:
LOCATION:
CONFIGURATION #:

Doug Howard
Town of Tyrone - Pickleball Sunshade
Tryone GA
Q-107113



GENERAL NOTES

DESIGN LOADS

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LIVE LOADS	5 PSF
SNOW LOAD	5 PSF
WIND LOADS	115 MPH* 3-Sec. Gust, RISK CATEGORY II & EXPOSURE C

* 115 MPH ACCORDING TO THE BASIC WIND SPEED MAPS OF ASCE 7-16 IS EQUIVALENT TO THE ALLOWABLE STRESS DESIGN WIND SPEED OF 90 MPH ACCORDING TO ASCE 7-05 AND IBC 2018 EQ 16-33.

ESTIMATED STEEL WEIGHT

Total Structure Weight	773.6 lbs
Single Column Weight	96.9 lbs
Total Upper Frame Weight	579.8 lbs
Steel Sizes	5.0 GA 07 RD TUBING

DIMENSIONS

L	A	W	H	HT	CL	CW	CHT
22'-0"	11' 6"	14'-0"	8' 0"	10' 8"	1' 5"	0' 11"	10' 8"



CORPORATE HEADQUARTERS
2580 Esters Blvd, Ste 100
DFW Airport, TX 75261
800-966-5005

- NOT TO SCALE
- NOT FOR CONSTRUCTION OR PERMITS
- DUE TO REPRODUCTION, ACTUAL COLORS MAY DIFFER FROM REPRESENTATION

These plans and specifications are the property of USA Shade and Fabric Structures and shall not be reproduced without their written permission.

CUSTOMER NAME:
PROJECT NAME:
LOCATION:
CONFIGURATION #:

Doug Howard
Town of Tyrone - Pickleball Sunshade
Tryone GA
Q-107113

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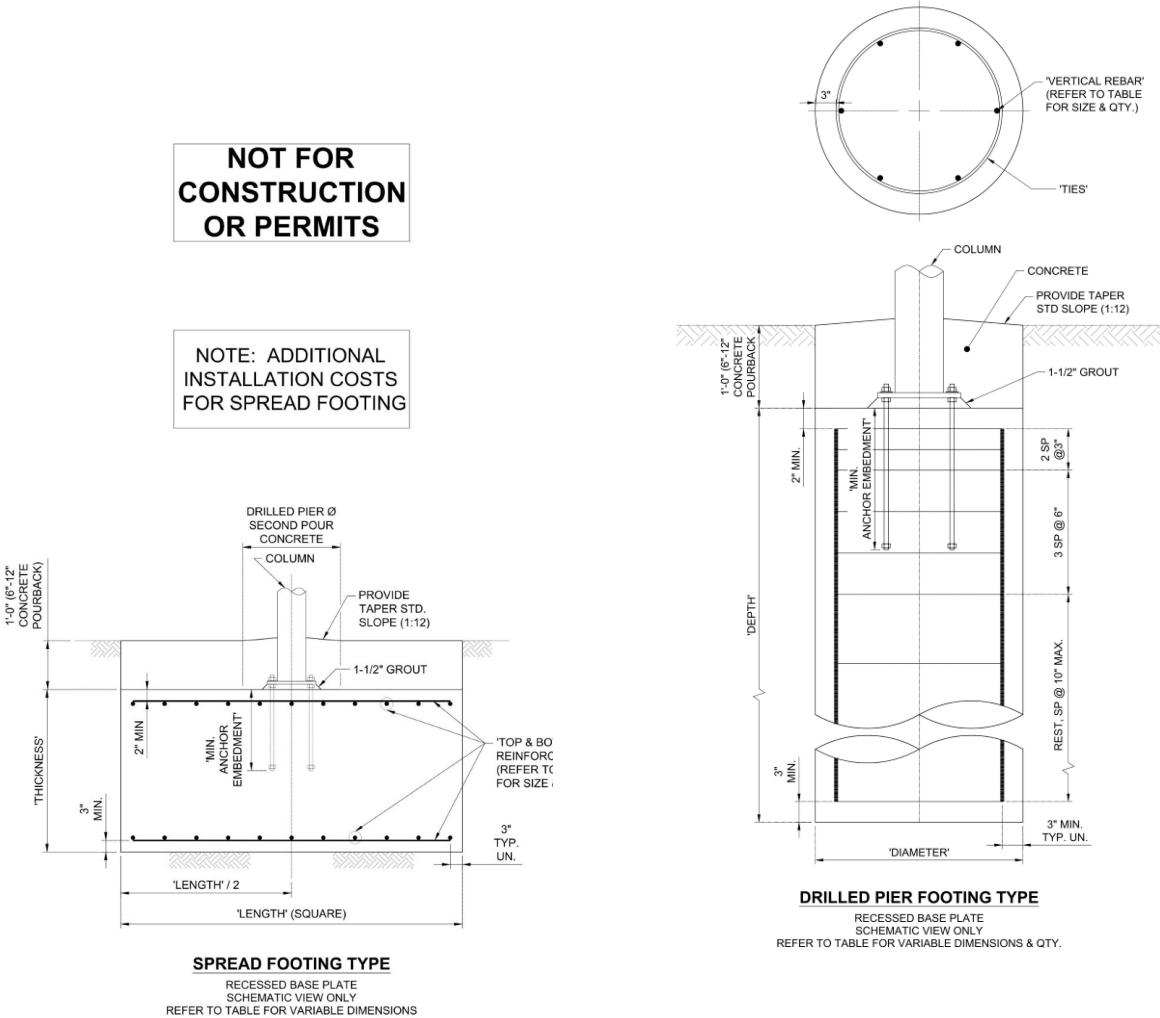
• SLUMP: 3-5

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(FT)	(FT)	QTY.	SIZE	QTY.	Ø LOOP (FT)	SIZE	(IN)	(IN)
2.00	4.00	6.00	#6	8	1.50	#3	33	19

TABLE FOR SPREAD FOOTING								
LENGTH	THICKNESS	TOP AND BOTTOM REINFORCEMENT					MIN. COLUMN EMBEDMENT (EMBED)	MIN. ANCHOR EMBEDMENT (RECESS. & SURFACE)
(FT)	(FT)	QTY.	SIZE	SPACING (IN)			(IN)	(IN)
3.50	3.00	5.00	#5	@	9.00	O.C.E.W.	33	19





Playworx Playsets LLC
8014 Cumming Hwy., Suite 403 #313
Canton, GA 30115 US
+18665025013
Orders@playworx.com
www.playworx.com

Quote

ADDRESS

Lynda Owens,
770-487-4694
Lynda.owens@tyronega.gov
Tyrone, Town of
950 Senoia Rd.
Suite A
Tyrone, GA 30290

SHIP TO

Town of Tyrone
Dorothea Redwine Park
226 Byewood Ln #218,
Tyrone, GA 30290

QUOTE # 4794

DATE 08/06/2025

EXPIRATION DATE 09/08/2025

SALES REP

Alex K.

ACTIVITY	QTY	RATE	AMOUNT
Replacement Parts 2Post Hip Shade 22' x 14' x 8' – Recessed Mount Base Plate Mounted • Post Color – Forest Green • Shade Color – Rain Forest	1	4,916.08	4,916.08
Installation equipment installation	1	4,900.00	4,900.00
COGS- Shipping Frieght	1	437.39	437.39

Thank you, we prefer ACH payments but will also accept payment by credit card or mail checks to:

Playworx Playsets
8014 Cumming Hwy., Ste. 403 #313
Canton, GA 30115

*The acceptance signature below serves as authorization to order the items quoted and indicates acceptance of the prices listed. All terms are subject to credit approval.

Thank you for allowing Playworx Playsets to quote your project. Please contact us directly when you are ready to begin your improvement.

We look forward to working with you soon!

SUBTOTAL	10,253.47
TAX	0.00
TOTAL	\$10,253.47

Accepted By

Accepted Date

Finishes/Powder Coat Colors

Following a thorough cleaning, we apply your choice of finishes to our steel structures:



- Powder Coating
- Steel

Powder Coating

Available in a wide range of colors, this coating has higher surface hardness/scratch resistance than common liquid paints.



- Powder Coating
- Zinc-Rich Primer
- Steel

Zinc-Rich Primer

Added corrosion protection around areas such as pools, reclaimed water irrigation and salt water.



- Powder Coating
- Hot-Dip Galvanizing
- Steel

Hot-Dip Galvanizing

The steel is dipped in zinc, then powder coated or wet-painted to resist corrosion in areas with salt water or high humidity.



BLACK
115618BLK



COBALT
115618CBB



BLUE
115618BLU



FOREST GREEN
115618FRG



RED
115618RED



YELLOW
115618YLW



DARK BROWN
115618DBW



LIGHT IVORY
115893



WHITE
115618WHT



TELE-GRAY
115892

The samples of the colors of the steel and the fabrics shown in this document are for demonstrative purposes and are subject to the printing capacities. Please contact us for physical samples of fabric and steel colors.. Contact your rep for warranty details.

Fabrics

USA SHADE uses the best materials available including HDPE, a high-density polyethylene mesh, which can block out up to 98% of the sun's harmful UV-A and UV-B rays. We offer a variety of materials with varying degrees of UV and weather protection, fire retardance, and non-combustibility. All of our fabrics are easy to maintain, providing protective shade and vibrant color over a long period of time.

SHADESURE™

PASSES: NFPA 701 / ASTM-E84

					
ELECTRIC PURPLE 84% shade factor 90% UV factor	NAVY BLUE 90% shade factor 94% UV factor	ROYAL BLUE 86% shade factor 94% UV factor	LAGUNA BLUE 92% shade factor 96% UV factor	TURQUOISE 83% shade factor 92% UV factor	RAIN FOREST 89% shade factor 96% UV factor
					
OLIVE 93% shade factor 97% UV factor	ZESTY LIME 83% shade factor 92% UV factor	CHOCOLATE 92% shade factor 93% UV factor	CINNAMON 88% shade factor 93% UV factor	SUNFLOWER YELLOW 70% shade factor 94% UV factor	ARIZONA 86% shade factor 91% UV factor
					
DESERT SAND 80% shade factor 92% UV factor	TERRACOTTA 84% shade factor 90% UV factor	BLACK 95% shade factor 96% UV factor	SILVER 88% shade factor 93% UV factor	WHITE 57% shade factor 86% UV factor	RED 80% shade factor 86% UV factor
					
ATOMIC ORANGE 82% shade factor 94% UV factor	MULBERRY 90% shade factor 91% UV factor				

COLOURSHADE® FR

PASSES: NFPA 701 / ASTM-E84 / CSFM TITLE 19

					
BLUE 80% shade factor 85% UV factor	GREEN 80% shade factor 85% UV factor	RED 80% shade factor 86% UV factor	TERRACOTTA 75% shade factor 82% UV factor	DESERT SAND 80% shade factor 92% UV factor	YELLOW 80% shade factor 89% UV factor
					
SILVER 80% shade factor 81% UV factor					

EXTREME 32

PASSES: NFPA 701

			
DESERT SAND 80% shade factor 92% UV factor	RAINFOREST 89% shade factor 96% UV factor	ROYAL BLUE 86% shade factor 94% UV factor	SILVER GREY 88% shade factor 93% UV factor



SECTION 13 31 23
PRE-ENGINEERED FABRIC SHADE STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this section

1.2 SUMMARY

- A. A single fabric shade structure manufacturer shall be responsible for the design, wet-stamped engineering drawings, fabrication, and supply of the fabric shade structure specified herein.

1.3 SUBSTITUTIONS

- A. To qualify as an approved equal, please submit the following manufacturer, installer and product documentation at least ten days prior to the bid:
 - a. 2 full sets of fabric samples
 - b. Detailed material and performance specifications for ALL fabric, steel, hardware and cables used in shade structure
 - c. 2 full sets of powder coating color metal "chips"
 - d. List of at least 10 reference sites within 50 miles of bid location
 - e. List of at least 10 customer references within 50 miles of bid location
 - f. Proof of compliance with all quality assurance criteria, as per Section 1.5
 - g. Full set of wet stamped engineering drawings for the proposed structures. Drawings must be stamped by a licensed engineer authorized to stamp in project location state.
 - h. Proof of installation competency and/or certification for type and size of structure specified.
 - i. List of any and all deviations from product specifications in section 2.1.
- B. No substitutions will be allowed after the deadline. Any approval of alternate manufacturers and structures shall be by addendum prior to the bid date and shall not be allowed without written notification.

1.4 QUALITY ASSURANCE

Fabrication and erection are limited to firms with proven specific area experience in the design, fabrication, and erection of fabric shade structures, and such firms shall meet the following minimum requirements. No substitutions shall be allowed for the following:

- A. A single shade structure manufacturer shall design, engineer and manufacture the shade structure.
- B. All manufacturers shall have at least 20 years experience in the design, engineering, manufacture, and erection of fabric shade structures, engineered to requirements with similar scope, and a successful construction record of in-service performance.
- C. All manufacturers shall provide proof with bid submittal of a minimum of \$2,000,000 (ag) General/Public Liability insurance, \$3,000,000 Professional Liability (PL) insurance, and additional \$10,000,000 Umbrella/Excess Liability insurance.
- D. The fabric shade structure contractor shall have a Corporate Quality Control program/manual, which describes their complete quality assurance program.
- E. Manufacturer must be IAS (International Accreditation Service) Certified.

1.6 WARRANTY

- A. The successful installer shall provide a 12-month warranty on all installation labor and materials.
- B. A supplemental warranty from the manufacturer shall be provided for a period of 10 years (pro-rated) on fabric and 10 years (non-prorated) on the structural integrity of the steel, from date of shade invoice.
- C. The warranty shall not deprive the Owner of other rights the Owner may have under the provisions of the Contract Documents, and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 GENERAL

A. The structure(s) shall consist of:

(1) 2 Post Hip QRE 227 22'-0" x 14'-0" x 8' 0" entry height

See drawings for quantities and details.

B. The structures shall be manufactured by Shade Structures, Inc., d/b/a USA SHADE & Fabric Structures, or approved equal

C. Contact: Alex Klebansky
8014 Cumming Hwy Ste 403 #313
Canton GA 30115
404-382-6242
alex@playworx.com

D. All structures designed per building codes shown on drawings.

E. All fabric shade structures shall be designed and engineered to meet the minimum of 115mph "Ultimate" Wind Load, Risk Category II, Exposure C, and a Snow Load of 5 psf and Live Load of 5 psf. All fabric shade structures shall be engineered with a zero wind pass-through factor on the fabric.

F. Steel:

1. All steel members of the fabric shade structure shall be designed in strict accordance with the requirements of the "American Institute of Steel Construction" (AISC) Specifications and the "American Iron and Steel Institute" (AISI) Specifications for Cold-Formed Members and manufactured in a IAS (International Accreditation Service) accredited facility for Structural Steel Fabrication under appropriate building code.
2. All connections shall have a maximum internal sleeving tolerance of .0625" using high-tensile strength steel sections with a minimum sleeve length of 6".
3. All non-hollow structural steel members shall comply to ASTM A-36. All hollow structural steel members shall be cold-formed, high-strength steel and comply with ASTM A-500-10, Grade B. All steel plates shall comply with ASTM A-572, Grade 50.
4. All galvanized steel tubing shall be triple-coated for rust protection using an in-line electroplating coat process. All galvanized steel tubing shall be internally coated with zinc and organic coatings to prevent corrosion.

G. Bolts:

1. All structural field connections of the shade structure shall be designed and made with high-strength bolted connections using ASTM A-325, Grade B.
2. Where applicable, all stainless steel bolts shall comply with ASTM F-593, Alloy Group 1 or 2. All bolt fittings shall include rubber washers for water-tight seal at the joints. All nuts shall comply with ASTM F-594, Alloy Group 1 or 2.

H. Welding:

1. All shop-welded connections of the fabric shade structure shall be designed and performed in strict accordance with the requirements of the "American Welding Society" (AWS) Specifications. Structural welds shall be made in compliance with the requirements of the "pre-qualified" welded joints, where applicable and by certified welders. No onsite or field welding shall be permitted.
2. All full penetration welds shall be continuously inspected by an independent inspection agency and shall be tested to the requirements of appropriate building code.

I. Powder Coating:

1. Galvanized steel tubing preparation prior to powder coating shall be executed in accordance with solvent cleaning SSPC-SP1. Solvents such as water, mineral spirits, xylol, and toluol, which are to be used to remove foreign matter from the surface. A mechanical method prior to solvent cleaning, and prior to surface preparation, shall be executed according to Power Tool Cleaning SSPC-SP3, utilizing wire brushes, abrasive wheels, needle gun, etc.
2. Carbon structural steel tubing preparation prior to powder coating shall be executed in accordance with commercial blast cleaning SSPC-SP6 or NACE #3. A commercial blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, mill scale, rust, coating, oxides, corrosion, and other foreign material.
3. Powder coating shall be sufficiently applied (minimum 3 mils thickness) and cured at the recommended temperature to provide proper adhesion and stability to meet salt spray and adhesion tests, as defined by the American Society of Testing Materials.
4. Raw powder used in the powder coat process shall have the following characteristics:
 - a. Specific gravity: 1.68 +/- 0.05
 - b. Theoretical coverage: 114 +/- 4ft²/mil
 - c. Mass loss during cure: <1%
 - d. Maximum storage temperature: 80°
 - e. Interpon 800® is a high-durability TGIC powder coating designed for exterior exposure. Tested against the most severe specifications, Interpon 800 gives significantly improved gloss retention and resistance to color change.
5. When the fabric shade structure(s) will be located within potentially corrosive environments such as (pools, reclaimed water irrigation, saltwater bodies, other standing bodies of water) hot dip galvanizing of Carbon steel or rust protection undercoat primer will be required on all structures at USA Shade's discretion. The rust protection primer shall be Sherwin-Williams® POWDURA® epoxy powder coating Z.R Primer and shall be applied to Carbon steel in accordance with the manufacturer's specifications. Primer should be fused only and then top coated with the selected powder coat to ensure proper inter-coat adhesion. The primer's attributes shall be:

- a. Specific gravity (g/ml): 2.37
- b. Coverage at 1.0 mil (ft²/lb): 81.6
- c. Adhesion: ASTM D-3359 5B
- d. Flexibility: ASTM D-552 Pass 1/8"
- e. Pencil hardness: ASTM D-3363 H-2H
- f. Impact resistance (in.lb): ASTM D-2794 Dir & Rev, 120 in-lbs
- g. Salt spray resistance: ASTM B-117 2000 hours
- h. Humidity resistance: ASTM D-4585 2000 hours
- i. 60° Gloss: ASTM D-523 50 ~ 70
- j. Cure schedule (metal temp): 10min @ 200°C (390°F)
25min @ 135°C (275°F)
- k. Film thickness range (mils): 2.0 ~ 3.0

J. Tension Cable: Steel wire rope cable is determined based on calculated engineering loads. Standard cabling is galvanized.

1. 0.25" (nominal) galvanized 7x19 strand core wire rope shall be used for tension loads up to 4,500 lbs.
2. 0.375" (nominal) galvanized 7x19 strand core wire rope shall be used for tension loads up to 9,000 lbs.
3. 0.5" (nominal) galvanized 6x19 strand core wire rope shall be used for tension loads up to 13,500 lbs.

K. Fabric Roof Systems:

1. UV Shade Fabric:

- a. Shadesure® shade fabric is made of a UV-stabilized, high-density polyethylene (HDPE), as manufactured by Multiknit® (Pty) Ltd. HDPE mesh shall be a heat-stentered, three bar Rachel-knitted, lockstitch fabric with one monofilament and two tape yarns to ensure that the material will not unravel if cut. Raw fabric rolls shall be 9.8425 feet wide.
- b. Fabric Properties:
 - ~ Life Expectancy: minimum 8 years with continuous exposure to the sun
 - ~ Fading: minimum fading after 5 years (3 years for Red)
 - ~ Fabric Mass: 5.31 oz/yd² ~ 5.6 oz/yd² (180gsm ~ 190gsm)
 - ~ Fabric Width: 9.8425 feet (3m)
 - ~ Roll Length: 164.04 feet (50m)
 - ~ Roll Dimensions: 62.99 inches x 16.5354 inches (160cm x 42cm)
 - ~ Roll Weight: +/- 66 lbs (+/- 30kg)
 - ~ Minimum Temp: -13°F (-25°C)
 - ~ Maximum Temp: +176°F (80°C)
- c. Fabric shall meet the following flame spread and fire propagation tests.
 - 1) ASTM E-84
 - 2) NFPA 701 Test Method 2

2. Stitching and Thread:

- a. All sewing seams are to be double-stitched.
- b. The thread shall be GORE® TENARA® mildew-resistant sewing thread, manufactured from 100% expanded PTFE (Teflon™). Thread shall meet or exceed the following:
 - 1) Flexible temperature range
 - 2) Very low shrinkage factor
 - 3) Extremely high strength, durable in outdoor climates
 - 4) Resists flex and abrasion of fabric
 - 5) Unaffected by cleaning agents, acid rain, mildew, salt water, and is unaffected by most industrial pollutants
 - 6) Treated for prolonged exposure to the sun
 - 7) Rot Resistant

3. Shade and UV Factors:

- a. Shade protection and UV screen protection factors shall be as follows:

<u>Color</u>	<u>Shade %</u>	<u>UV Block %</u>
Laguna Blue	92%	96%
Royal Blue	86%	94%
Navy Blue	90%	94%
Turquoise	83%	92%
Rainforest	89%	96%
Desert Sand	80%	92%
Black	95%	96%
Sunflower Yellow	70%	94%
Terracotta	84%	90%
Arizona	86%	91%
White	57%	86%
Silver	88%	93%
Red	91%	92%
Electric Purple	84%	90%
Zesty Lime	83%	92%
Cinnamon	88%	93%
Olive	93%	97%
Chocolate	92%	93%

PART 3 - EXECUTION

3.1 INSTALLATION

- A. The installation of fabric shade structures shall be performed by manufacturer or manufacturer-approved contractor. All installation personnel must have experience in the erection of tensioned fabric structures.
- B. The installation shall comply with the manufacturer's instructions for assembly, installation, and erection, per approved drawings.
- C. Concrete:
 - 1. Unless noted otherwise for footings and piers by the Project Engineer, the concrete specification for footings, piers, slabs, curbs, and walkways shall meet a minimum 2,500 psi at 28-day strength.
 - 2. Concrete work shall be executed in accordance with the latest edition of American Concrete Building Code ACI 318-14.
 - 3. Concrete specifications shall comply in accordance with the Section 03300 Cast-in-Place Concrete, detailed as per plans, and shall be as follows:
 - a. 28 Days Strength $F'_c = 2,500$ psi
 - b. Aggregate: HR
 - c. Slump: 3 ~ 5 inch
 - d. Portland Cement shall conform to C-150
 - e. Aggregate shall conform to ASTM C-33
 - 4. All reinforcement shall conform to ASTM A-615 grade 60.
 - 5. Reinforcing steel shall be detailed, fabricated, and placed in accordance with the latest ACI Detailing Manual and Manual of Standard Practice.
 - 6. Whenever daily ambient temperatures are below 80 degrees Fahrenheit, the contractor may have mix accelerators and hot water added at the batch plant (See Table 1).
 - 7. The contractor shall not pour any concrete when the daily ambient temperature is to be below 55 degrees Fahrenheit.

TABLE 1

Temperature Range	% Accelerator	Type Accelerator
75~80 degrees F	1%	High Early (non calcium)
70~75 degrees F	2%	High Early (non calcium)
Below 70 degrees F	3%	High Early (non calcium)

- D. Foundations
 - 1. All anchor bolts set in new concrete shall comply with ASTM F1554 GR 55.
 - 2. All anchor bolts shall be Hot-Dip Galvanized.
 - 3. Footings and full rebar cages shall be drilled or dug, set, and poured as per manufacturer's specifications.

END OF SECTION 13 31 23