



April 1, 2021

WASHOE COUNTY
1001 E. 9TH ST.
RENO, NV 89512

Attn: Melissa Lawney
(775) 771-4241

Dear Melissa:

Per your recent request, please find following our quotation for a 130' Sabre Model S4TL self-supporting tower.

If you have any questions or require further information, please feel free to contact me at (800) 369-6690, ext. 11610.

Sincerely,

SABRE INDUSTRIES

A handwritten signature in blue ink, appearing to read "Heath Peterson", is written over a light blue circular stamp.

Heath Peterson
Government/Utility Sales Manager

Enclosure: Per Above

HGP:rr

PROPOSAL

Prepared for: **WASHOE COUNTY**
1001 E. 9TH ST.
RENO, NV 89512
Attn: Melissa Lawney

Proposal No.: **21-5308-HGP**
Date: **04/01/21** Page **1** of **5**
Reference: **130' S4TL/WC Marble, NV BUDGETARY**
Freight: **Origin**

SABRE MODEL S4TL SELF-SUPPORTING TOWER

Quantity of one (1) 130' Sabre Model S4TL self-supporting tower.

The tower will be square in design with a base width of 15' - 0" tapering to 5' - 0" at the top. The tower will utilize tubular steel for tower legs and angular steel for bracing.

See the tower profile included in this proposal for the design parameters.

The tower will be designed to support the following equipment:

	ANTENNA MODEL NUMBER (QTY)	RADOME		ELEVATION C.O.R.	TX. LINE SIZE & TYPE	FREQUENCY	AZIMUTH TO NORTH	ANTENNA MOUNT (DESIGN)	MOUNT PROVIDED	
		YES	NO						YES	NO
1	(1) SC499-HWBLDF (DXX)		X	130' At Base	N/A	N/A	Unknown	One (1) 6' Sidearm	X	
2	(1) 8' x 3in Omni		X	130' At Base	(1) 1/2"	N/A	Unknown	One (1) 3' Sidearm	X	
3	(1) 6' Omni		X	130' At Base	(2) 1/2"	N/A	Unknown	One (1) 3' Sidearm	X	
4	(1) 6' Omni		X	130' At Base	(1) 7/8"	N/A	Unknown	One (1) 3' Sidearm	X	
5	(1) TTA (24in x 30in 12in)		X	130'	(2) 7/8"	N/A	Unknown	One (1) Flush Mount 2-3/8" O.D. Pipe	X	
6	(1) Camera (18"x36"x18")		X	127'	(1) Cat 5	N/A	Unknown	One (1) Flush Mount 2-3/8" O.D. Pipe	X	
7	(2) 3' Solid Dishes w/ Radome	X		124'	(2) 1/2"	6 GHz	180°, 270°	Two (2) 4-1/2" O.D. Leg-type Dish Mounts	X	
8	(1) 8' x 3in Omni		X	112' At Base	(1) 1 5/8"	N/A	Unknown	One (1) 3' Sidearm	X	
9	(1) SC499-HWBLDF (DXX)		X	110' At Base	(1) 1 5/8"	N/A	Unknown	One (1) 6' Sidearm	X	
10	(1) RFS SC3-W100B		X	67'	(1) EW105	11 GHz	207.56°	One (1) 4-1/2" O.D. Leg-type Dish Mount	X	
11	(1) 6' H.P. Dish		X	60'	(1) EW90	10 GHz	180°	One (1) 4-1/2" O.D. Leg-type Dish Mount	X	
12	(1) 8' Solid Dish W/ Radome	X		29.5'	(1) EW63	6 GHz	180°	One (1) 4-1/2" O.D. Leg-type Dish Mount	X	
13	(1) 2' Solid Dish		X	27'	(1) Cat 5	6 GHz	90°	One (1) 4-1/2" O.D. Leg-type Dish Mount	X	
14	(1) RFS PAD10-59A w/ Radome	X		20'	(1) E60	6 GHz	2.47°	One (1) 4-1/2" O.D. Leg-type Dish Mount	X	

Note: This structure has been manufactured with American made steel. (Complete Structure)

Note: This structure conforms to the design requirements of the 2018 Northern Nevada Code.

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ITEM I TOWER MATERIALS.....\$61,617.00

Materials to be provided include:

Complete tower steel and hardware (Buy American Complete Structure)
Anchor bolts and templates
Leg-to-Leg templates
Construction step bolts (see notes)
Outside climbing ladder (16") with required standoffs
One (1) waveguide support ladder * (to support sixteen (16) initial lines – 16th line on stackable hangers)
 * **Stackable hangers will be provided by others**
One (1) flush mount with 2-3/8" O.D. pipe @ the 130' elevation
One (1) 6' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
One (1) flush mount with 2-3/8" O.D. pipe @ the 127' elevation
Two (2) 4-1/2" O.D. leg dish mounts each @ the 124' elevation
One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 112' elevation
One (1) 6' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 110' elevation
One (1) 4-1/2" O.D. leg dish mount @ the 67' elevation
One (1) 4-1/2" O.D. leg dish mount with one (1) stiffarm mounting assembly @ the 60' elevation
One (1) 4-1/2" O.D. leg dish mount with two (2) stiffarm mounting assemblies @ the 29.5' elevation
One (1) 4-1/2" O.D. leg dish mount @ the 27' elevation
One (1) 4-1/2" O.D. leg dish mount with two (2) stiffarm mounting assemblies @ the 20' elevation
Safety cable kit without harness (150')
One (1) Waveguide Bridge 2-Leg 2' x 10' (15' Direct Burial) with three (3) 2 level trapeze kits
One (1) 3' x 5/8" lightning rod copper clad
One (1) 2-7/8" x 15' lightning rod extension
P.E. certified tower profile and foundation drawings
Final erection drawings

ITEM II GEOTECHNICAL REPORT\$12,196.00

Provide Geotechnical report based on one (1) boring, 50' deep.

ITEM III FOUNDATION INSTALLATION.....\$77,979.00

Install foundations based on presumptive clay soil, per TIA-222-H.

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ITEM IV TOWER ERECTION\$45,677.00

The following is included in the erection price:

Offload tower materials from truck and inventory
Erect tower steel complete
Install Outside climbing ladder (16")
Install One (1) waveguide support ladder (to support sixteen (16) initial lines – 16th line on stackable hangers)
Install One (1) flush mount with 2-3/8" O.D. pipe @ the 130' elevation
Install One (1) 6' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
Install One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
Install One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
Install One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 130' elevation
Install One (1) flush mount with 2-3/8" O.D. pipe @ the 127' elevation
Install Two (2) 4-1/2" O.D. leg dish mounts each @ the 124' elevation
Install One (1) 3' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 112' elevation
Install One (1) 6' sidearm with two (2) tiebacks with one (1) 5' mounting pipe @ the 110' elevation
Install One (1) 4-1/2" O.D. leg dish mount @ the 67' elevation
Install One (1) 4-1/2" O.D. leg dish mount with one (1) stiffarm mounting assembly @ the 60' elevation
Install One (1) 4-1/2" O.D. leg dish mount with two (2) stiffarm mounting assemblies @ the 29.5' elevation
Install One (1) 4-1/2" O.D. leg dish mount @ the 27' elevation
Install One (1) 4-1/2" O.D. leg dish mount with two (2) stiffarm mounting assemblies @ the 20' elevation
Install Safety cable kit without harness (150')
Install One (1) Waveguide Bridge 2-Leg 2' x 10' (15' Direct Burial) with three (3) 2 level trapeze kits
Install One (1) 3' x 5/8" lightning rod copper clad
Install One (1) 2-7/8" x 15' lightning rod extension
Install Ladder Standoff Bracket, Initial

ITEM V GROUNDING.....\$ 5,915.00

Install ground ring around the tower using 5/8" ground rods and #2 solid tinned copper wire. Tie into existing grounding system.

TOWER FREIGHT TO WASHOE COUNTY, NEVADA.....\$ 7,886.00

ANCHOR BOLT FREIGHT TO WASHOE COUNTY, NEVADA\$ 492.00

**The above pricing is for one (1) set of anchor bolts and templates, and one (1) leg-to-leg template to be shipped together in one (1) shipment to the same destination at the same time.*

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NOTES: **Terms will be reviewed upon receipt of order.**

Wind induced vibrations, such as vortex shedding and harmonic oscillation/resonance, of structures of all types due to unpredictable interaction with wind and surrounding structures, exposure and terrain rarely occur. The owner's maintenance program should include observations for vibration and any resulting loosening of connecting hardware or damage to the structure. The Sabre warranty specifically excludes failure due to fatigue or similar phenomena as a result of the aforementioned behavior.

The permit package includes a profile drawing of the structure with member sizes; anchor bolt details; descriptive notes; structural calculations; a table of supported antennas, mounts and feedlines; and a foundation sketch and calculations (if applicable).

This quotation is based on ANSI/TIA-222-H and Customer provided specifications. Any information not provided by ANSI/TIA-222-H or the Customer has not been considered.

Foundation and anchor bolt designs are based strictly on ANSI/TIA-222-H. Any additional requirements may result in increased foundation size and price.

Dimensional information is preliminary only; it may change based on final engineering.

All Sabre mounts are quoted with support pipes of appropriate length for most applications if not otherwise specified. If different support pipe lengths are required at the time of the order, additional costs may be incurred.

Cable type safety climbing device provided does not include harness.

Freight charges quoted are for provided materials only. Additional freight charges may be incurred with the order of additional items.

Site must be easily accessible for trucks delivering tower steel and concrete, cranes, drill rigs, and all other equipment required to perform the job.

In the event that the existing soil conditions are found to be other than as depicted in the Soils Report and Sabre's soil parameters, Sabre may ask for an equitable adjustment to the quoted price.

Customer to secure all permits.

This quote is based on non-union, non-prevailing wages, and non-winter working conditions.

All deviations, alterations, field changes, engineering changes, or architectural changes to the implied scope of work will be bill accordingly on a time a materials basis.

Any downtime or remobilization due to circumstances beyond our control will be billed accordingly.

All antennas, transmission lines, jumpers, ground kits, hangers, and hardware are to be provided and installed by others.

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All tower materials will be hot dip galvanized as outlined in ASTM A-123.

Construction step bolts have been quoted to the 60' elevation on all three legs for safety and ease of construction. Step bolts should not be used for climbing without the use of a safety climbing device or fall protection equipment.

This proposal does not include any sales, use, excise, contractors or any other taxes not specifically detailed in this proposal.

If a Customer requests to pick up a tower, a \$300.00 per truck charge may apply for dunnage and loading.

Storage charges of \$350.00 per month may apply starting sixty (60) days after original scheduled ship date.


Due to material and freight price fluctuations, Sabre reserves the right to review all material and freight pricing prior to accepting any order. Any structure order placed on hold is subject to a price review at the time of its release from hold status.

Title, ownership, risk of loss, risk of material obsolescence and risk of material market value decline shall pass to the Customer upon invoicing or shipment to Customer, whichever occurs earlier in time.

Delivery of tower materials will be approximately 18 to 20 weeks after receipt of required information and contingent upon backlog at the time of order.

This proposal is based on the terms and conditions proposed above including the attached standard terms and conditions and is subject to our review and final acceptance of your order. No other terms are valid unless signed by an authorized officer of Sabre Industries.

Submitted By: Sabre Industries


Heath Peterson
Government/Utility Sales Manager

Acceptance of Customer:

Please enter our order for the above items
in accordance with this proposal.

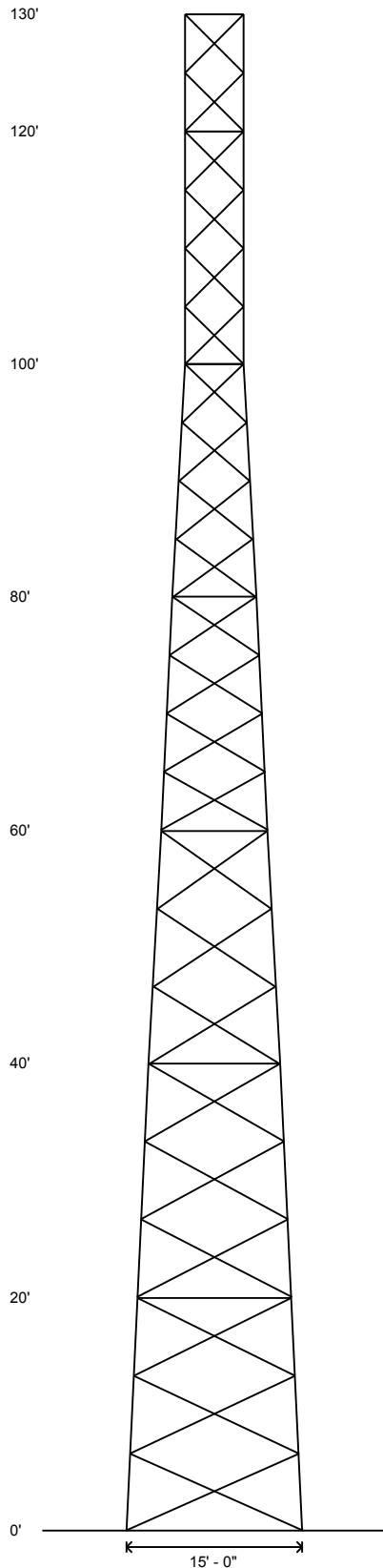
Signature _____

Name (print) _____

Title _____ Date _____

Purchase Order No. _____

SIZES ARE PRELIMINARY AND MAY CHANGE UPON FINAL DESIGN													
Legs	5.563 OD X .375			4.500 OD X .337		4.000 OD X .318		3.500 OD X .300		2.375 OD X .344		A	
Diagonals	L 3 X 3 X 3/16			L 2 1/2 X 2 X 3/16		L 2 X 2 X 1/8		L 1 3/4 X 1 3/4 X 1/8		L 2 X 2 X 3/16		B	
Horizontals	NONE	C	NONE	D	NONE	E	NONE	F	NONE	G	NONE	G	
Internals	NONE	D	NONE	H	NONE	I	NONE	D	NONE	J	NONE	J	
Brace Bolts	(1) 3/4"			(1) 5/8"									
Top Face Width	13'			11'		9'		7'		5'			
Panel Count/Height	9 @ 6.6667"			14 @ 5'									
Section Weight	3963		3689		2599		2043		1674		1544	577	



Design Criteria - ANSI/TIA-222-H

Wind Speed (No Ice)	130 mph
Wind Speed (Ice)	30 mph
Design Ice Thickness	0.25 in
Risk Category	III
Exposure Category	C
Topographic Factor Procedure	Method 1 (Simplified)
Topographic Category	4
Crest Height	670 ft
Ground Elevation	0 ft

Base Reactions

Total Foundation		Individual Footing	
Shear (kips)	78.91	Shear (kips)	29.71
Axial (kips)	22.82	Compression (kips)	241
Moment (ft-kips)	4996	Uplift (kips)	231
Torsion (ft-kips)	-60.31		

Material List

Display	Value
A	2.375 OD X .154
B	L 1 3/4 X 1 3/4 X 1/8
C	L 3 X 3 X 1/4
D	L 2 1/2 X 2 1/2 X 1/4
E	L 2 X 2 X 5/16
F	L 2 X 2 X 1/4
G	L 2 X 2 X 3/16
H	L 4 X 4 X 1/4
I	L 3 1/2 X 3 1/2 X 1/4
J	L 2 1/2 X 2 1/2 X 3/16

Notes

- 1) All legs are A500 (50 ksi Min. Yield).
- 2) All braces are A572 Grade 50.
- 3) All brace bolts are A325-X.
- 4) The tower model is S4TL.
- 5) Transmission lines are to be attached to 15 hole waveguide ladders with stackable hangers.
- 6) Azimuths are relative (not based on true north).
- 7) Foundation loads shown are maximums.
- 8) (4) 1 1/4" dia. x 63"-long F1554 grade 105 anchor bolts per leg.
- 9) All unequal angles are oriented with the short leg vertical.
- 10) Weights shown are estimates. Final weights may vary.
- 11) Use single internal bracing pattern at 40', 60', 80', 100', 120', and 130'.
- 12) Use X-Braced internal bracing pattern at 20'.

Designed Appurtenance Loading

Elev	Description	Tx-Line	Elev	Description	Tx-Line
135.85	(1) SC499-HWBLDF (DXX)		124	(2) 3' Solid Dish w/ Radome	(2) 1/2"
134	(1) 8' x 3in Omni		116	(1) 8' x 3in Omni	
133	(1) 6' Omni		115.85	(1) SC499-HWBLDF (DXX)	
133	(1) 6' Omni		112	3ft Sidearm	
130	3ft Sidearm		112		(1) 1 5/8"
130	3ft Sidearm		110	6ft Sidearm	
130	3ft Sidearm		110		(1) 1 5/8"
130	6ft Sidearm		67	Leg Dish Mount	
130	Flush Mount		67	(1) SC3-W100AB	(1) EW105
130	Lightning Rod & Extension		60	Leg Dish Mount	
130		(1) 1/2"	60	(1) 6' H.P. Dish	(1) EW90
130		(1) 7/8"	29.5	Leg Dish Mount	
130		(2) 1/2"	29.5	(1) 8' Solid Dish W/ Radome	(1) EW63
130	(1) TTA (24in x 30in 12in)	(2) 7/8"	27	Leg Dish Mount	
127	Flush Mount		27	(1) 2' Solid Dish	(1) Cat 5
127	(1) Camera (18"x36"x18")	(1) Cat 5	20	Leg Dish Mount	
124	(2) Leg Dish Mount		20	(1) PADX10-W57 AC w/ Radome	(1) E60



Sabre Industries
7101 Southbridge Drive
P.O. Box 658
Sioux City, IA 51102-0658
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Quote: **21-5308-HGP**

Customer: WASHOE COUNTY

Site Name: WC Marble, NV BUDGETARY

Description: 130' S4TL

Date: 3/29/2021

By: CH

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