

McClenagan, Laura

Subject: FW: PWM INC Offer to Verizon Ashley Smith for Tower Space
Attachments: PWM INC Pacific Coast Towers Offer to Verizon.Ashley Smith 9.10.21.pdf; CA0631 Valmont Tower, Foundation Designs PO.pdf; 3022082_CA0631 DOG Geotechnical Report R0 2021-03-03 signed (3).pdf

From: Thomas McMurray <tjmcjr@outlook.com>
Sent: Wednesday, September 15, 2021 11:52 AM
To: Ford, John <JFord@co.humboldt.ca.us>; Johnson, Cliff <CJohnson@co.humboldt.ca.us>; alanbongio@gmail.com; hrh707@outlook.com; noah@landwaterconsulting.com; mnewman@gpins.com; sregon@aol.com; hcpcmccavour@gmail.com; mrbrian707@gmail.com
Cc: Thomas McMurray <tjmcjr@outlook.com>; Brian Millar <brian@landlogistics.com>
Subject: PWM INC Offer to Verizon Ashley Smith for Tower Space

Hello All; Attached is an email sent to Ms. Ashley Smith offering space on our Sun Valley Tower at a 50% reduction in rent and the 130 ft. position on our tower. Our professional studies, previously submitted, indicate that this location has superior coverage to AT&T's proposed location. We have sent a Purchase Order to Valmont Structures to complete the Engineered wet signed Drawings and Calculations for the tower based upon a Soils Report completed by the Delta Oaks Group attached. Upon completion of these required documents we intend to file for a building permit within three weeks from today. We have selected the Sun Valley location by following the County of Humboldt General Plan and the §6.5 A., Telecommunication Siting Standards to the maximum extent feasible. To our knowledge, AT&T has not conducted an alternative site analysis as required by this Section.

The PWM Inc project contains no General Plan non-conforming issues that would require a General Plan Amendment or the need to grant any special privileges to the property owner. With the completion of the PWM tower, no additional tower is necessary in this general location as it provides for the co-location of at least four (4) Communication Tenants as required in the General Plan. Respectfully, Tom McMurray

Thomas J. McMurray Jr.
PWM Inc. a Pacific Coast Towers Company
P.O. Box 6660 Eureka, California 95502
2039 Williams Street-FedEx/UPS only
Phone: 707-499-0901-Direct
tjmcjr@outlook.com



GEOTECHNICAL INVESTIGATION REPORT

March 3, 2021

Prepared For:

TowerCo, LLC.



**Sun Valley Group
CA0631**

Proposed 130-Foot Self Support Tower

3318 Foster Avenue, Arcata (Humboldt County), California 95521

Latitude N 40° 53' 07.2" Longitude W 124° 06' 31.0"

Delta Oaks Group Project GEO21-07533-08

Revision 0

geotech@deltaoaksgroup.com

Performed By:

Reviewed By:

Erin Benson, E.I.



Michael L. Lassiter, P.E.



INTRODUCTION

This geotechnical investigation report has been completed for the proposed 130-foot self-support tower located at 3318 Foster Avenue in Arcata (Humboldt County), California. The purpose of this investigation was to provide engineering recommendations and subsurface condition data at the proposed tower location. A geotechnical engineering interpretation of the collected information was completed and utilized to suggest design parameters regarding the adequacy of the structure's proposed foundation capacity under various loading conditions. This report provides the scope of the geotechnical investigation; geologic material identification; results of the geotechnical laboratory testing; and design parameter recommendations for use in the design of the telecommunication facility's foundation and site development.

SITE CONDITION SUMMARY

The proposed tower and compound are located on a gravel drive exhibiting a generally flat topography across the tower compound and subject property.

REFERENCES

- Civil Drawings, prepared by PWM Inc, dated December 10, 2020
- TIA Standard (TIA-222-G), dated August 2005

SUBSURFACE FIELD INVESTIGATION SUMMARY

The subsurface field investigation was conducted through the advancement of one mechanical soil test boring to the termination depth of 51 feet bgs. Samples were obtained at selected intervals in accordance with ASTM D 1586. The sampling was conducted at the staked centerline of the proposed tower. Soil samples were transported to our laboratory and classified by a geotechnical engineer in accordance with ASTM D 2487. A detailed breakdown of the material encountered in our subsurface field investigation can be found in the boring log presented in the Appendix of this report.

A boring plan portraying the spatial location of the boring in relation to the proposed tower, tower compound and immediate surrounding area can be found in the Appendix.



SUBSURFACE CONDITION SUMMARY

The following provides a general overview of the site's subsurface conditions based on the data obtained during our field investigation.

FILL

Fill material was not encountered during the subsurface field investigation.

SOIL

The residual soil encountered in the subsurface field investigation began at the existing ground surface in the boring and consisted of sandy lean clay, lean clay, and silty clay. The materials ranged from a very soft to stiff cohesion.

Auger advancement refusal was not encountered during the subsurface field investigation.

ROCK

Rock was not encountered during the subsurface field investigation.

SUBSURFACE WATER

At the time of drilling, subsurface water was not encountered during the subsurface investigation. However, subsurface water elevations can fluctuate throughout the year due to variations in climate, hydraulic parameters, nearby construction activity and other factors.

FROST PENETRATION

The frost penetration depth for Humboldt County, California is 5 inches (0.5 feet).

CORROSIVITY

Soil resistivity was performed in accordance with ASTM G187 with a test result of 56,000 ohms-cm.



FOUNDATION DESIGN SUMMARY

In consideration of the provided tower parameters and the determined soil characteristics, Delta Oaks Group recommends utilizing a drilled shaft foundation for the proposed structure. Due to the weak soils encountered in the boring, Delta Oaks Group does not recommend a shallow foundation for this location. The strength parameters presented in the following sections can be utilized for design of the foundation.

GENERAL SUBSURFACE STRENGTH PARAMETERS

Boring	Depth (bgs)	USCS	Moist/Buoyant Unit Weight (pcf)	Phi Angle (degrees)	Cohesion (psf)
B-1	0.0 – 2.5	CL	105	0	0
	2.5 – 7.5	CL	105	0	200
	7.5 – 10.0	CL	110	0	1000
	10.0 – 20.0	CL	105	0	300
	20.0 – 25.0	CL - ML	105	0	400
	25.0 – 30.0	CL	105	0	500
	30.0 – 35.0	CL - ML	105	0	750
	35.0 – 40.0	CL - ML	110	0	1,250
	40.0 – 51.5	CL	110	0	1,750

- The unit weight provided assumes overburden soil was compacted to a minimum of 95% of the maximum dry density as obtained by the standard Proctor method (ASTM D 698) and maintained a moisture content within 3 percent of optimum
- The values provided for phi angle and cohesion should be considered ultimate.



SUBSURFACE STRENGTH PARAMETERS - DRILLED SHAFT FOUNDATION

Boring	Depth (bgs)	Net Ultimate Bearing Capacity (psf)	Ultimate Skin Friction - Compression (psf)	Ultimate Skin Friction - Uplift (psf)
B-1	0.0 – 3.0	-	-	-
	3.0 – 5.0	6,780	110	110
	5.0 – 7.5	4,100	100	100
	7.5 – 10.0	2,260	550	550
	10.0 – 15.0	2,080	160	160
	15.0 – 20.0	2,400	160	160
	20.0 – 25.0	3,070	220	220
	25.0 – 30.0	4,360	270	270
	30.0 – 35.0	7,410	410	410
	35.0 – 40.0	11,690	680	680
	40.0 – 45.0	13,950	960	960
	45.0 – 50.0	13,590	960	960
	50.0 – 51.5	13,550	960	960

- The top 3.0 feet of soil should be ignored due to the potential soil disturbance during construction.
- The bearing capacity can be increased by 1/3 for transient loading.
- The values presented assume the concrete is cast-in-place against earth walls and any casing utilized during construction of the foundation was removed.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.



SUBSURFACE STRENGTH PARAMETERS – SUPPORT STRUCTURE FOUNDATION

Boring	Depth (bgs)	Net Ultimate Bearing Capacity (psf)	Minimum Design Footing Width (ft)	Modulus of Subgrade Reaction (pci)
B-1	2.5	1,290	2.0	40
	3.0	1,350		
	4.0	1,450		
	5.0	1,550		

- Delta Oaks Group recommends utilizing a slab on grade in conjunction with continuous perimeter footings that bear on residual soil or properly compacted structural fill placed in accordance with the recommendations provided in the *CONSTRUCTION* section of this report.
- The slab on grade should be properly reinforced to prevent concrete cracking and shrinkage.
- The foundation should bear a minimum of 2.5 feet bgs.
- A sliding friction factor of 0.30 can be utilized along the base of the proposed foundation.
- An Ultimate Passive Pressure Table is presented on the following page. An appropriate reduction should be considered in accordance with local building code frost penetration depth.
- Delta Oaks Group recommends an appropriate factor of safety be utilized for the design of the foundation.



ULTIMATE PASSIVE PRESSURE VS. DEPTH – SUPPORT STRUCTURE FOUNDATION

Soil Layers (feet)		Moist Unit Weight	Phi Angle	Cohesion	PV	KP	Ph
Top	0	105	0	0	0	1	0
Bottom	0.4	105	0	0	42	1	21
Top	0.4	105	0	0	42	1	42
Bottom	2.5	105	0	0	262.5	1	262.5
Top	2.5	105	0	200	262.5	1	662.5
Bottom	7.5	105	0	200	787.5	1	1187.5
Top	7.5	110	0	1000	787.5	1	2787.5
Bottom	10	110	0	1000	1062.5	1	3062.5



CONSTRUCTION

SITE DEVELOPMENT

The proposed access road and tower compound should be evaluated by a Geotechnical Engineer, or their representative, after the removal or "cutting" of the areas to design elevation but prior to the placement of any structural fill material to verify the presence of unsuitable or weak material. Unsuitable or weak materials should be undercut to a suitable base material as determined by a Geotechnical Engineer, or their representative. Backfill of any undercut area(s) should be conducted in accordance with the recommendations provided in the *STRUCTURAL FILL PLACEMENT* section of this report.

Excavations should be sloped or shored in accordance and compliance with OSHA 29 CFR Part 1926, Excavation Trench Safety Standards as well as any additional local, state and federal regulations.

STRUCTURAL FILL PLACEMENT

Structural fill materials should be verified, prior to utilization, to have a minimum unit weight of 110 pcf (pounds per cubic foot) when compacted to a minimum of 95% of its maximum dry density and within plus or minus 3 percentage points of optimum moisture. Materials utilized should not contain more than 5 percent by weight of organic matter, waste, debris or any otherwise deleterious materials. The Liquid Limit should be no greater than 40 with a Plasticity Index no greater than 20. Structural fill material should contain a maximum particle size of 4 inches with 20 percent or less of the material having a particle size between 2 and 4 inches. Backfill should be placed in thin horizontal lifts not to exceed 8 inches (loose) in large grading areas and 4 inches (loose) where small handheld or walk-behind compaction equipment will be utilized. The potential suitability of on-site materials to be utilized as fill should be evaluated by a Geotechnical Engineer, or their representative just prior to construction.

During construction structural fill placement should be monitored and tested. This should include at minimum, visual observation as well as a sufficient amount of in-place field density tests by a Geotechnical Engineer, or their representative. Materials should be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D 698 (standard Proctor method). Moisture contents should be maintained to within plus or minus 3 percentage points of the optimum moisture content.

SHALLOW FOUNDATIONS

Foundation excavation(s) should be evaluated by a Geotechnical Engineer, or their representative, prior to reinforcing steel and concrete placement. This evaluation should include visual observation to verify a level bearing surface; vertical side-walls with no protrusions, sloughing or caving; and the exposed bearing surface is free of deleterious material, loose soil and standing water. Excavation dimensions should be verified and testing performed on the exposed bearing surface to verify compliance with design recommendations. Bearing testing should be conducted in accordance with ASTM STP399 (Dynamic Cone Penetrometer). A 6-inch layer of compacted crushed stone should be installed prior to reinforcing steel and concrete placement. If subsurface water is encountered during excavation dewatering methods such as sump pumps or well points may be required.



DRILLED SHAFT FOUNDATIONS

Drilled shaft foundations (caissons) are typically installed utilizing an earth auger to reach the design depth of the foundation. Specialized roller bits or core bits can be utilized to penetrate boulders or rock. The equipment utilized should have cutting teeth to result in an excavation with little or no soil smeared or caked on the excavation sides with spiral-like corrugated walls. The drilled shaft design diameter should be maintained throughout the excavation with a plumbness tolerance of 2 percent of the length and an eccentricity tolerance of 3 inches from plan location. A removable steel casing can be installed in the shaft to prevent caving of the excavation sides due to soil relaxation. Upon completion of the drilling and casing placement, loose soils and subsurface water greater than 3-inches in depth should be removed from the bottom of the excavation for the “dry” installation method. The drilled shaft installation should be evaluated by a Geotechnical Engineer, or their representative, to verify suitable end bearing conditions, design diameter and bottom cleanliness. The evaluation should be conducted immediately prior to as well as during concrete placement operations.

The drilled shaft should be concreted as soon as reasonably practical after excavation to reduce the deterioration of the supporting soils to prevent potential caving and water intrusion. A concrete mix design with a slump of 6 to 8 inches employed in conjunction with the design concrete compressive strength should be utilized for placement. Super plasticizer may be required to obtain the recommended slump range. During placement, the concrete may fall freely through the open area in the reinforcing steel cage provided it does not strike the reinforcing steel and/or the casing prior to reaching the bottom of the excavation. The removable steel casing should be extracted as concrete is placed. During steel casing removal a head of concrete should be maintained above the bottom of the casing to prevent soil and water intrusion into the concrete below the bottom of the casing.

If subsurface water is anticipated and/or weak soil layers are encountered drilled shafts are typically installed utilizing the “wet” method by excavating beneath a drilling mud slurry. The drilling mud slurry is added to the drilled shaft excavation after groundwater has been encountered and/or the sides of the excavation are observed to be caving or sloughing. Additional inspection by a Geotechnical Engineer, or their representative, during the “wet” method should consist of verifying maintenance of sufficient slurry head, monitoring the specific gravity, pH and sand content of the drilling slurry, and monitoring any changes in the depth of the excavation between initial approval and just prior to concreting.

Concrete placement utilizing the “wet” method is conducted through a tremie pipe at the bottom of the excavation with the drilling mud slurry level maintained at a minimum of 5 feet or one shaft diameter, whichever is greater, above the ground water elevation. The bottom of the tremie should be set one tremie pipe diameter above the excavation. A closure flap at the bottom of the tremie or a sliding plug introduced into the tremie before the concrete is recommended to reduce the potential contamination of the concrete by the drilling mud slurry. The bottom of the tremie must be maintained in the concrete during placement. Additional concrete should be placed through the tremie causing the slurry to overflow from the excavation in order to reduce the potential for the development of “slurry pockets” remaining in the drilled shaft.



QUALIFICATIONS

The design parameters and conclusions provided in this report have been determined in accordance with generally accepted geotechnical engineering practices and are considered applicable to a rational degree of engineering certainty based on the data available at the time of report preparation and our practice in this geographic region. All recommendations and supporting calculations were prepared based on the data available at the time of report preparation and knowledge of typical geotechnical parameters in the applicable geographic region.

The subsurface conditions used in the determination of the design recommendations contained in this report are based on interpretation of subsurface data obtained at specific boring locations. Irrespective of the thoroughness of the subsurface investigation, the potential exists that conditions between borings will differ from those at the specific boring locations, that conditions are not as anticipated during the original analysis, or that the construction process has altered the soil conditions. That potential is significantly increased in locations where existing fill materials are encountered. Additionally, the nature and extent of these variations may not be evident until the commencement of construction. Therefore, a geotechnical engineer, or their representative, should observe construction practices to confirm that the site conditions do not differ from those conditions anticipated in design. If such variations are encountered, Delta Oaks Group should be contacted immediately in order to provide revisions and/or additional site exploration as necessary.

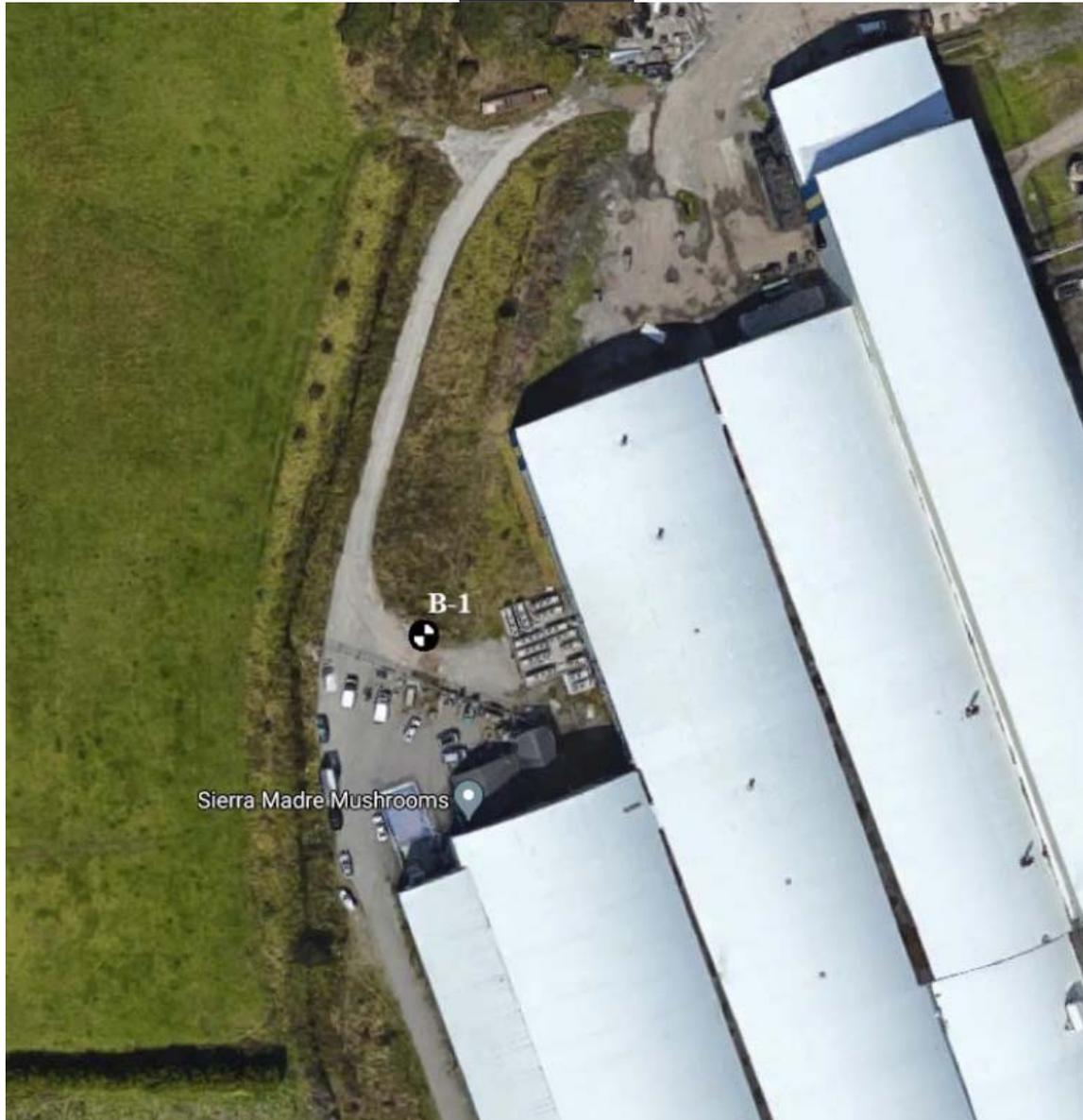
Samples obtained during our subsurface field investigation will be retained by Delta Oaks Group for a period of 30 days unless otherwise instructed by TowerCo, LLC. No warranty, expressed or implied, is presented.

Delta Oaks Group appreciates the opportunity to be of service for this Geotechnical Investigation Report. Please do not hesitate to contact Delta Oaks Group with any questions or should you require additional service on this project.



APPENDIX

BORING PLAN





PROJECT NAME Sun Valley Group (CA0631)

CLIENT TowerCo

PROJECT NUMBER GEO21-07533-08

Boring No.: B-1

PAGE 1 OF 1

PROJECT LOCATION Arcata, California

DATE DRILLED : 2/25/2021

DRILLING METHOD : Hollow Stem Auger

GROUND ELEVATION : 22

BORING DEPTH (ft) : 51.5

GROUND WATER LEVELS:

▽ **AT TIME OF DRILLING :** --- Not Encountered

▼ **AT END OF DRILLING :** --- Not Measured

▼ **AFTER DRILLING :** --- Not Measured

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE	MATERIAL CLASSIFICATION	Pocket Penetrometer (tsf)	BLOWS 1st	BLOWS 2nd	BLOWS 3rd	N VALUE	▲ SPT N VALUE ▲												
									10	20	30	40	50	60	70	80	90				
0	SANDY LEAN CLAY (CL), dark gray, trace gravel, moist	Hand	CL																		
5	LEAN CLAY (CL), very soft, dark gray, trace silt, sand, and gravel, moist -- With silt, trace sand and gravel -- Stiff -- Very soft	X	CL		1	1	1	2													
10	-- Soft	X			1	1	1	2													
15	-- Soft	X			3	4	5	9													
20	SILTY CLAY (CL - ML), soft, dark gray, trace sand, moist	X	CL-ML		1	2	2	4													
25	LEAN CLAY (CL), firm, dark gray, with silt, trace sand, moist	X	CL		2	2	3	5													
30	SILTY CLAY (CL - ML), firm, dark gray, trace sand, moist	X	CL-ML		3	3	4	7													
35	-- Stiff	X			4	4	6	10													
40	LEAN CLAY (CL), stiff, dark gray, with silt, trace sand, moist	X	CL		4	7	8	15													
45	-- Trace silt and sand	X			4	6	7	13													
50	-- Very moist	X			4	6	8	14													

Bottom of borehole at 51.5 feet.

Pacific Coast Towers

PURCHASE ORDER

The following number must appear on all related correspondence, shipping papers, and invoices:

P.O. NUMBER: 000012



Pacific Coast Towers

TO:
Valmont Industries
PO Box 91410
Chicago IL 60693
Phone:
Fax:

SHIP TO:
PWM BTS

P.O. DATE	REQUISITIONER	TERMS	SITE NAME	SITE NUMBER
9/13/2021		0	Sun Valley Group	CA0631

QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
1	ea	Tower Design	\$1,250.00	\$1,250.00
1	ea	Foundation Design	\$750.00	\$750.00
TOTAL				\$2,000.00

1. Please send two copies of your invoice.
2. Enter this order in accordance with the prices, terms, delivery method, and specifications listed above.
3. Please notify us immediately if you are unable to ship as specified.
4. Send all invoices to :
Pacific Coast Towers Inc.
5000 Valleystone Dr., Suite 200
Cary, NC 27519
Phone (919) 653-5700 Fax (919) 469-5530



 Authorized by 9/13/21
 Date

tjmcjr@outlook.com

From: Thomas McMurray
Sent: Friday, September 10, 2021 10:20 AM
To: Ashley Smith; Pete.Manas@epicwireless.net
Cc: tjmcjr@outlook.com
Subject: FW: Arcata Sites
Attachments: AT&T Proposed Loading SVG (12.3.2020).pdf; PWM Inc. Sun Valley Communicaiton Side.jpg; Proposed Rent Breakdown (3.18.21).pdf

Hello Ashley and Pete: At this point, would you and AT&T have any interest in locating at the 130 foot, top of the tower with a 50% reduction from the earlier sent schedule of equipment and rental amounts attached. Thanks, Tom

Thomas J. McMurray Jr.
PWM Inc. a Pacific Coast Towers Company
P.O. Box 6660 Eureka, California 95502
2039 Williams Street-FedEx/UPS only
Phone: 707-499-0901-Direct
tmcjr@outlook.com

From: Thomas McMurray
Sent: Thursday, December 3, 2020 1:00 PM
To: Ashley Smith <Ashley.Smith@epicwireless.net>; Pete Manas <Pete.Manas@epicwireless.net>
Cc: Me <tjmacjr@pacbell.net>; Ainsley Parks (ainsleyparks@outlook.com) <ainsleyparks@outlook.com>; 'Lisa McMurray' (lmcmurray7@outlook.com) <lmcmurray7@outlook.com>
Subject: RE: Arcata Sites

Hello Ashley and Pete: Attached is our analysis of the total loading requested by AT&T. Our site will include a 130 foot self-support lattice tower and the proposed location is shown in a red outline on the aerial attached. The top centerline is available now and includes the total proposed loading attached at 130 ft. prox. There will be room for your equipment shelter to be placed on the concrete slab. The lat and long is prox. 40-53-06.96 124-06-30.61. The tower and foundation design is being finalized and should be available this week. We have not priced the top c/l location at this time awaiting soil information. Regards, Tom

From: Ashley Smith <Ashley.Smith@epicwireless.net>
Sent: Wednesday, December 2, 2020 9:45 AM
To: Thomas McMurray <tjmcjr@outlook.com>
Cc: Me <tjmacjr@pacbell.net>; Ainsley Parks (ainsleyparks@outlook.com) <ainsleyparks@outlook.com>; 'Lisa McMurray' (lmcmurray7@outlook.com) <lmcmurray7@outlook.com>
Subject: RE: Arcata Sites