

EM-METROPCS-059-100913

UKIGINA

445 Hamilton Avenue, 14th Floor White Plains, New York 10601 Tel 914.761.1300 Fax 914.761.5372 www.cuddyfeder.com

CONNECTICUT SITING COUNCIL

September 10, 2010

VIA FEDEX

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935

Re:

MetroPCS Notice of Exempt Modification

237 Sandy Hollow Road, Groton, Connecticut

Dear Ms. Roberts:

On behalf of our client, MetroPCS, enclosed please find our client's exempt modification filing for the existing tower facility referenced above along with a check in the amount of \$625.

Thank you in advance for your consideration of the enclosed.

Very truly yours,

Daniel M. Laub

Enclosures

cc: Kellie Dunn, MetroPCS

NOTICE OF INTENT TO MODIFY AN EXISTING TELECOMMUNICATIONS FACILITY AT 237 SANDY HOLLOW ROAD, GROTON, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. seq. ("PUESA"), and Sections 16-50j-72(b) and 16-50j-73 of the Regulations of Connecticut State Agencies adopted pursuant to the PUESA, MetroPCS ("MetroPCS") hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 237 Sandy Hollow Road, Groton, Connecticut (the "Sandy Hollow Road Facility"), owned by SBA (the "Tower Owner"). MetroPCS and the Tower Owner have agreed to share the use of the Sandy Hollow Road Facility as detailed below.

Sandy Hollow Road Facility

The Sandy Hollow Road Facility is located on the south side of Interstate 95 off of Sandy Hollow Road near its intersection with Allyn Street on an approximate 3.35 acre parcel of land owned by the Mystic River Ambulance Association. The site coordinates are Latitude 41-22-9.4 41° 22' 9.4" and Longitude 71-58-56.7 71° 58' 56.7".

On March 26, 2008 the Siting Council issued a Certificate of Environmental Compatibility and Public Need for the Sandy Hollow Road Facility (Docket 343). The Council's approval provided for an initial and then expanded compound to accommodate co-locators. The tower and the equipment of T-Mobile approved within a 12' x 42' area ("Phase I Compound"). That compound could later be expanded to include a 35' x 50' equipment area to the south ("Phase II Compound") to be built only when an additional carrier requested co-location. The Sandy Hollow Road Facility currently consists of an approximately one hundred thirty (130) foot monopole (the "Tower") and associated equipment currently being used by T-Mobile within the Phase I Compound. A chain link fence surrounds the Phase I Compound and will also surround the Phase II compound.

MetroPCS' Wireless Facility

As shown on the enclosed plans prepared by Chappell Engineering Associates, LLC, including a site plan, compound plan, north tower elevation and antenna/equipment detail of the Sandy Hollow Road Facility, MetroPCS proposes shared use of the Facility by placing antennas on the Tower and equipment cabinets needed to provide wireless services within the Phase II compound to be constructed. MetroPCS will install up to six (6) Kathrein Model 860-10025 panel antennas, or their functional equivalents, at the approximately 117' AGL level of the Tower, a GPS antenna and associated equipment including a battery cabinet, a ppc cabinet and a modcell cabinet and space for a future battery cabinet and future BTS cabinet on a 16' by 10' concrete pad within the Phase II compound. As evidenced in the structural analysis report prepared by FDH Engineering, Inc., annexed hereto, MetroPCS has confirmed that the tower superstructure and foundation are sufficient for the installation of the proposed wireless equipment.

MetroPCS' Wireless Facility Constitutes An Exempt Modification

The proposed addition of MetroPCS' antennas and equipment to the Sandy Hollow Road Facility, constitutes an exempt "modification" of an existing facility as defined in Connecticut General Statutes Section 16-50i(d) and Council regulations promulgated pursuant thereto. The addition of MetroPCS' antennas and equipment to the Tower will not result in an increase of the Tower's height nor extend the approved site boundaries. Further, there will be no increase in noise levels by six (6) decibels or more at the Tower site's boundary. In addition, MetroPCS' installation will not increase the cumulative radio frequency electromagnetic radiation power density at the Tower site's boundary to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission.

The power density for existing conditions is fully documented in the last filing with the Connecticut Siting Council for the Sandy Hollow Road Facility as 2.82% of the MPE limit. Calculations for MetroPCS' proposed installation are as follows:

	Centerline Height	Frequency	Number of		Power Density	% MPE
Carrier	AGL	(MHz)	Channels	ERP/Ch	(mW/cm2)	Limit
MetroPCS	117'	2140	3	443.67	0.0350	3.50%

When combining the cumulative "worse case" power density levels for the existing Sandy Hollow Road Facility with that of MetroPCS' proposed installation, the resultant total power density is 6.32% which is well within applicable standards.

For all the foregoing reasons, the addition of MetroPCS' proposed installation to the Tower constitutes an exempt modification which will not have a substantially adverse environmental effect.

Conclusion

Accordingly, MetroPCS requests that the Connecticut Siting Council acknowledge that its proposed modification to the Roberts Road Facility meets the Council's exemption criteria.

cc: Mark R. Oefinger, Town Manager, Town of Groton Kellie Dunn, MetroPCS



FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Structural Analysis for SBA Network Services, Inc.

130 ft Monopole

SBA Site Name: Groton 2 SBA Site ID: CT11561-A

FDH Project Number 10-08281E S1

Prepared By:

Ashley Miller, El Project Engineer Reviewed By:

Christopher M. Murphy, PE President

Christopher H. Kurphy

CT PE License No. 25842

FDH Engineering, Inc.

2730 Rowland Rd. Raleigh, NC 27615 (919) 755-1012 info@fdh-inc.com

September 8, 2010



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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Mystic, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G.* Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from Fred A. Nudd Corporation (Project No. 208-13077) Design of 130' Monopole Tower dated May 9, 2008, FDH, Inc. (Job No. 08-08060T) TIA Inspection Report dated November 6, 2008, and SBA Network Services, Inc.

The basic design wind speed per the ANSI/TIA-222-G standard is 120 mph without ice and 50 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the current and proposed antennas from Metro PCS at 117 ft., the tower meets the requirements of the ANSI/TIA-222-G standards provided the **Recommendation** below is satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Fred A. Nudd Project No. 208-13077), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e. the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendation

To ensure the requirements of the ANSI/TIA-222-G standards are met with the existing and proposed loading in place, we have the following recommendation:

1. Proposed coax should be installed inside the monopole's shaft.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.

Table 1 - Appurtenance Loading

Existing Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines ¹	Carrier	Mount Elevation (ft)	Mount Type
1-6	128.7 ²	(6) EMS RR90-17-02DP	(12) 1-5/8"	T-Mobile	128	(1) 12.5' Low Profile Platform

¹ Coax installed inside the pole's shaft unless otherwise noted

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines 1	Carrier	Mount Elevation (ft)	Mount Type
1-6	117	(6) Kathrein 800 10504	(12) 1-5/8" (1) 3/8"	Metro PCS	117	(1) Low Profile Platform (CaAa = 18.01 ft²)

¹ Coax installed inside the pole's shaft unless otherwise noted

² Currently, T-Mobile has (3) EMS RR90-17-02DP antennas and (6) 1-5/8" coax at 128.7". According to information provided by SBA, T-Mobile may install up to (6) EMS RR90-17-02DP antennas and (12) 1-5/8" coax at 128.". Analysis performed with total leased loading in place.

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	50 ksi
Anchor Bolts	105 ksi
Flange Plate @ 90'	50 ksi
Anchor Bolts @ 90'	92 ksi

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 - Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	130 - 90	Pole	TP31.5625x24x0.1875	45.7	Pass
L2	90 - 45	Pole	TP40.125x31.5625x0.3125	49.1	Pass
L3	45 - 0	Pole	TP48x38.5486x0.375	59.6	Pass
		Flange Bolts @ 90'	(18) 7/8" Ø w/ BC = 36"	52.3	Pass
		Flange Plate @ 90'	41" Ø PL x 1.75" thk.	17.1	Pass
		Anchor Bolts	(12) 2.25" Ø w/ BC = 54"	45.1	Pass
		Base Plate	60" Ø PL x 2.5" thk.	32.9	Pass

^{*}Capacities include 1/3 allowable increase for wind.

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis* (ANSI/TIA-222-G)	Original Design (TIA/EIA-222-F)
Axial	24 k	28 k
Shear	24 k	23 k
Moment	1,883 k-ft	2,189 k-ft

^{*} Current analysis reactions are within an allowable factor of 1.35 when the original design reactions are based on an allowable stress design per ANSI/TIA-222-G.

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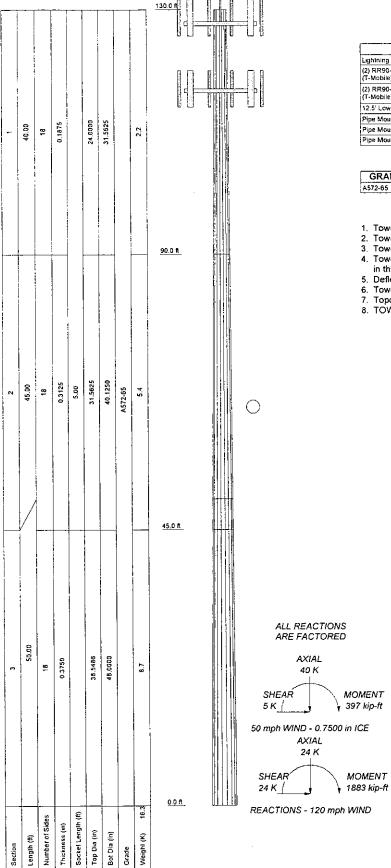
GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

Appendix



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION		
ightning Rod 130		(2) RR90-17-02DP w/Mount Pipe	128		
(2) RR90-17-02DP w/Mount Pipe	128	(T-Mobile)	_		
(T-Mobile)		(2) 800 10504 w/ mount pipe (Metro	117		
(2) RR90-17-02DP w/Mount Pipe	128	PCS)			
(T-Mobile)	i	(2) 800 10504 w/ mount pipe (Metro	117		
12.5' Low Profile Platform (T-Mobile)	128	PCS)			
Pipe Mount	128	Low Profile Platform (Metro PCS)	117		
Pipe Mount	128	(2) 800 10504 w/ mount pipe (Metro	117		
Pipe Mount	128	PCS)	<u> </u>		

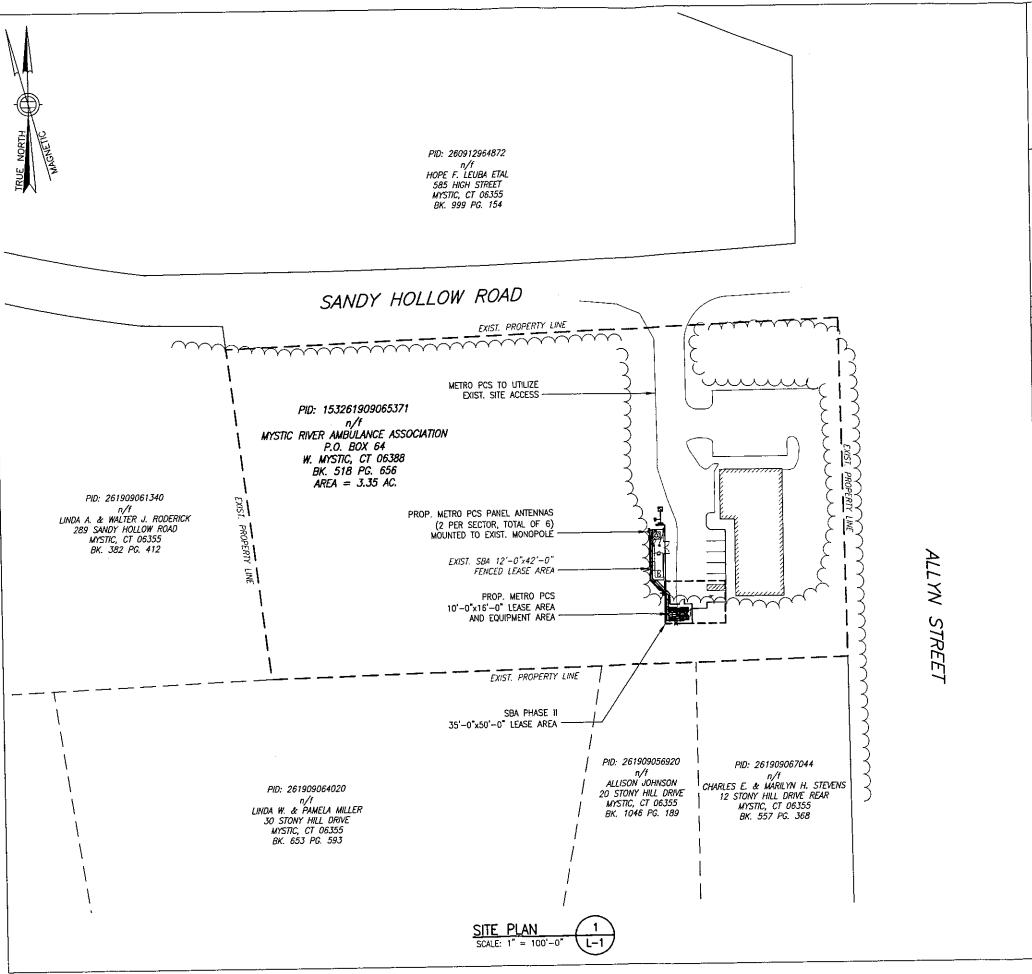
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
4572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

- 1. Tower is located in New London County, Connecticut.
- 2. Tower designed for Exposure C to the TIA-222-G Standard.
- Tower designed for a 120 mph basic wind in accordance with the TIA-222-G Standard.
 Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
- 5. Deflections are based upon a 60 mph wind.
- 6. Tower Structure Class II.
- 7. Topographic Category 1 with Crest Height of 0.00 ft8. TOWER RATING: 59.6%

Groton 2, CT11561-A FDH Engineering, Inc. 2730 Rowland Road Project: 10-08281E S1 Client: SBA Network Services, Inc. Drawn by: A. Miller App'd: Raleigh, North Carolina Date: 09/08/10 Scale: NTS Code: TIA-222-G Phone: (919) 755-1012 ower Analysis Dwg No. E-1 FAX: (919) 755-1031



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285 BILLERICA ROAD THIRD FLOOR CHELMSFORD, MA 01824 TEL (978) 244-7200 FAX (978) 244-7240



ENGINEERING

ASSOCIATES, LLC

Civil Structural Land Surveying

201 BOSTON POST ROAD WEST, SUITE 301 MARLBOROUGH, MA 01752

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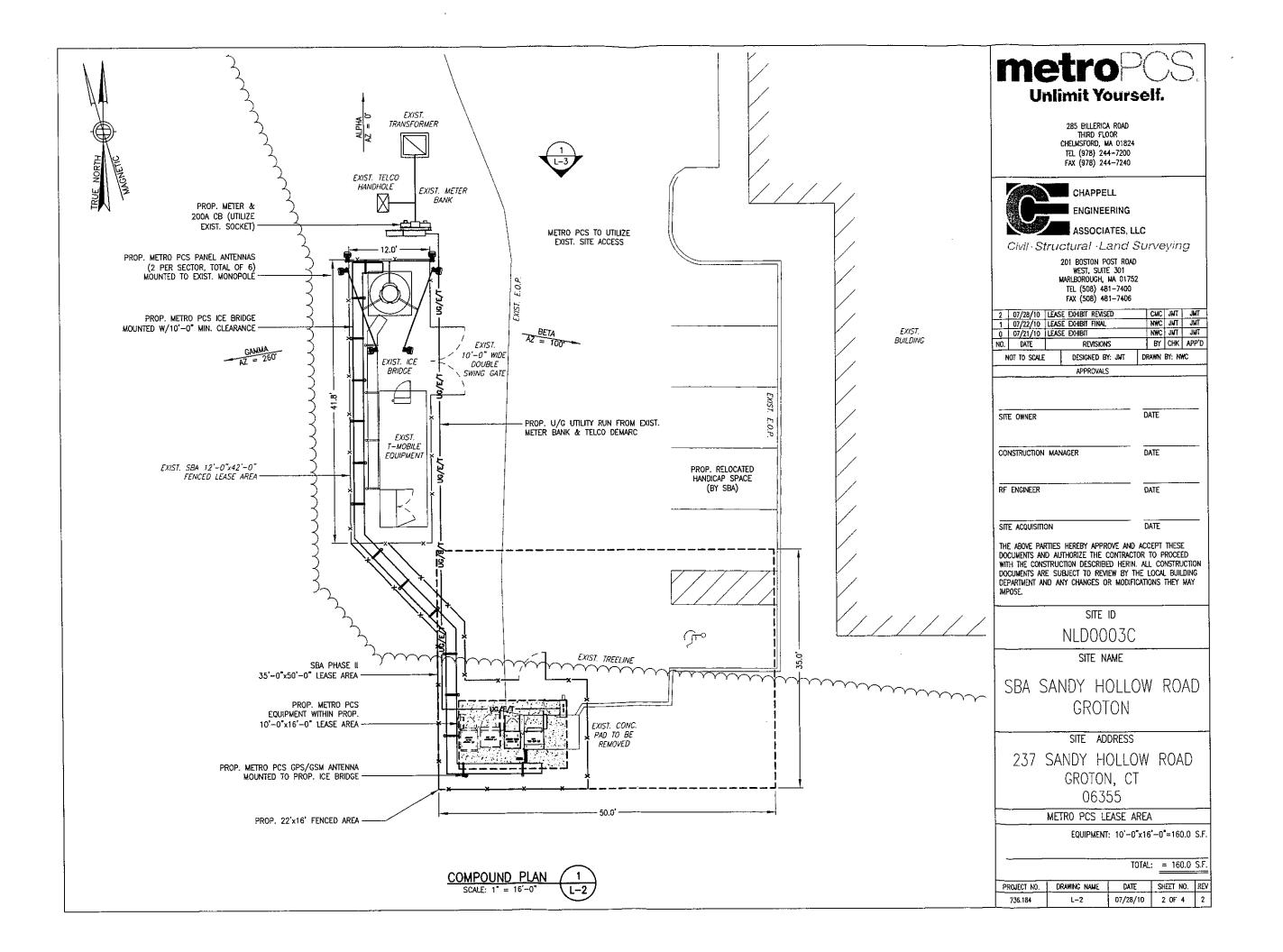
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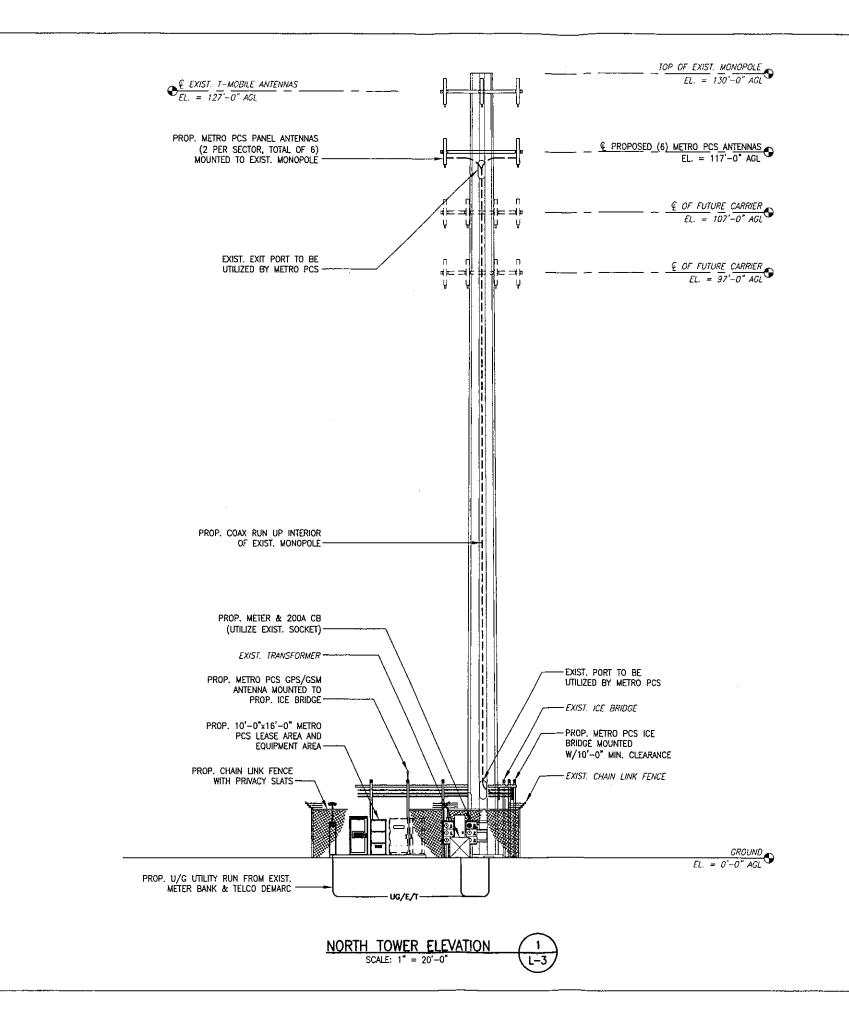
METRO PCS LEASE AREA

EQUIPMENT: 10'-0"x16'-0"=160.0 S.F.

TOTAL: = 160.0 S.F.

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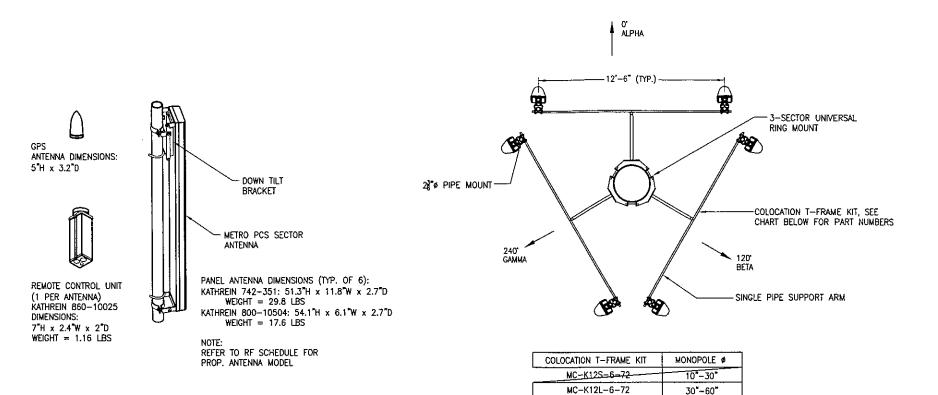
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METRO PCS LEASE AREA

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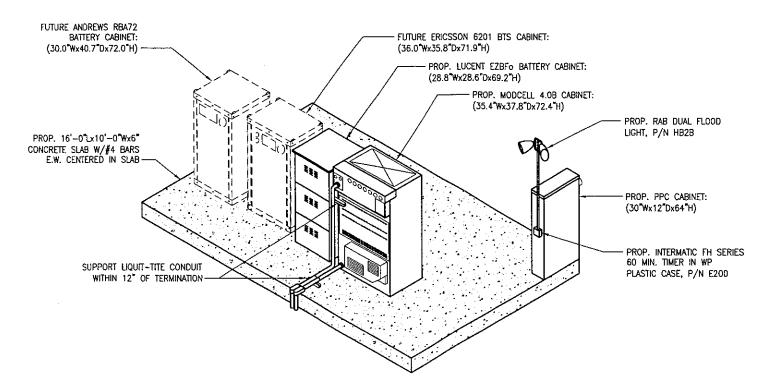
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METRO PCS LEASE AREA

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