Chemung County Planning Board
Chemung County Commerce Center
400 East Church Street
P.O. Box 588
Elmira, New York 14902-0588

(607) 737-5510
www.chemungcountyny.gov
planning@co.chemung.ny.us

Referral Number
_____
For office use only

Chemung County Planning Board – Municipal Referral Form

(Please complete all information on both pages)

Referring Municipality: ☐ City ☑ Town ☐ Village of Southport 10-21-2019

Referring Official: Peter Rocchi Title: Code Enforcement Officer

Address: 1139 Penn Ave, Elmira, NY 14904

Phone Number: 737-5268 E-mail: procchi@townofsouthport.com

Referring Board (check appropriate box): ☐ Legislative Board ☑ ZBA ☑ Planning Board

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Petitioner(s): Matthew Kerwin o/b/o Up State Tower Co LLC and Buffalo-Lake Erie Wireless Systems Phone: 315.425.2820

Petitioner's Mailing Address: 125 E Jefferson St Syracuse NY 13202 E-mail: mkerwin@barclaydamon.com

Location of Property: Budd St & Morley Pl

Tax Map Parcel Number(s): 109.07-5-45

Current Zoning District: Industrial

Proposed Action: (check all that apply)

- ☑ Area Variance
- ☐ Use Variance
- ☑ Site Plan Review
- ☐ Special/Conditional Use Permit
- ☐ Comprehensive Plan Adoption / Amendment
- ☐ Other (please specify):_____
- ☐ Subdivision Review
- ☐ Rezoning
- ☐ Zoning Text Amendment
- ☐ Zoning Map Amendment
- ☐ Moratorium

Description of the proposed action (attach detailed narrative if available):

Area Variance to construct a 160 foot telecommunications tower that does not meet the current code in §525-109.D.1.a.2 Setback requirements and §525-109.D.2 where the maximum allowable height is 120 feet. Site Plan review required per zoning §525 Use Regulation Table.

The proposed action applies to real property within five hundred feet (500') of the following

(Please identify each item by filling in the appropriate blank after each item)

☐ (a) Boundary of the (City), (Village) or (Town) of: _____

☐ (b) Boundary of any existing or proposed (County) or (State Park) or any (Other Recreation Area): _____

_____

☑ (c) Right-of-way of any existing or proposed (County) or (State Parkway), (Thruway), (Expressway), (Road) or (Highway); (Include (County) or (State Route) # and name of (Road): Clemens Center Parkway, State Route 14

_____

☐ (d) Existing or proposed right-of-way of any stream or drainage channel owned by the (County) or for which the county has established channel lines: _____

☐ (e) Existing or proposed boundary of any (County) or (State) owned land on which a public building or institution is situated:

_____

☐ (f) The boundary of a farm operation located in an agricultural district, as defined by article twenty-five-AA of the agriculture and markets law (this subparagraph shall not apply to the granting of area variances: _____

Hearings/Meetings Schedule

Board	Public Hearing Date	Meeting Dates (prior and future)
Town Board/Village Board of Trustees		
Zoning Board of Appeals	Expected to be on December 18, 2019	November 20, 2019
Planning Board/Planning Commission	Expected to be on December 2, 2019	November 4, 2019
City Council		

Action taken on this application (reviewed, approved, discussed, etc.) Application will be presented at the November 2019 meetings.

"Full Statement" Checklist

As defined in NYS General Municipal Law §239-m (1)(c)

Please make sure you have enclosed the following required information with your referral, as appropriate.

***For All Actions*:**

✓ Chemung County Planning Board – Municipal Referral Form

✓ All application materials required by local law/ordinance to be considered a "complete application" at the local level (PDF preferred).

✓ Part 1 Environmental Assessment Form (EAF) or Environmental Impact Statement (EIS) for State Environmental Quality Review (SEQR). If Type II Action, provide a statement to that effect.

____ Agricultural Data Statement, for site plan review, special/conditional use permit, use variances, or subdivision review located in an Agricultural District or within 500 feet of a farm operation located in an Agricultural District, per Ag. Districts Law Article 25AA §305-a, Town Law §283-a, and Village Law §7-739.

____ Municipal board meeting minutes on the proposed action (PDF preferred).

For Proposing or Amending Zoning Ordinances or Local Laws: The above requirements AND

____ Report/minutes from Town Board, Village Board or Trustees or Planning Board (PDF preferred)

____ Zoning Map

____ Complete text of proposed law, comprehensive plan, or ordinance (PDF preferred)

Deadline: Please submit completed referrals by close of business 10 business days prior to the Chemung County Planning Board meeting.

BARCLAY DAMON LLP

Matthew T. Kerwin
Partner

October 9, 2019

VIA OVERNIGHT MAIL

Town of Southport
Attn: Peter Rocchi, Code Enforcement Officer
1139 Pennsylvania Avenue
Elmira, NY 14904

Re: Application of Up State Tower Co., LLC and Buffalo-Lake Erie Wireless Systems to Construct a Telecommunications Tower at Morley Place Town of Southport, NY (Tax Map # 109.07-5-45) Site: ELM-765.

Dear Mr. Rocchi:

We represent Up State Tower Co., LLC ("Up State"), which proposes to construct and own a public utility telecommunications facility to be located at the easterly terminus of Morley Place in the Town of Southport on property further identified as tax map no. 109.07-5-45 (the "Site"). The tower will be used by Buffalo-Lake Erie Wireless Systems Co., LLC ("Blue Wireless"), which will collocate its antennas and related equipment on the tower and within the fenced compound located at the base of the tower. As described below, Up State applies for approval to construct and operate the tower in conjunction with Blue Wireless.

Blue Wireless, through its affiliate Spotlight Media Corp., Inc., is considered a public utility in New York for zoning purposes and is licensed and regulated by the Federal Communications Commission. Blue Wireless is responsible for providing wireless telephone service to emergency services, businesses and individuals in the geographic area that includes Chemung County and the Southport area. Blue Wireless is currently upgrading its network in Chemung County to provide its public utility service to the residents and visitors in the area and improve its service due to customer demand. In order to provide adequate wireless service to the Southport area, Blue Wireless must place a telecommunications facility in a technologically appropriate location.

Specifically, the project consists primarily of the construction of a 160' self-support telecommunications facility (with a proposed 5' lightning rod), as well as the placement of nine (9) panel antennas and three (3) microwave antennas at a height of 160' on the facility. Cabling

will run down the tower and connect the antennas to Blue Wireless' equipment cabinets located on a 10' by 12' concrete pad located near the base of the tower. The tower, equipment pad, and related equipment will be surrounded by a fenced compound. Up State has entered into a lease agreement with the current property owner concerning the proposed facility.

Up State, in connection with Blue Wireless, submits the exhibits and enclosures below in support of its application for site plan approval from the Planning Board and area variance approval from the Zoning Board of Appeals.

Exhibit 1: Application forms;

Exhibit 2: Project description;

Exhibit 3: Compliance with Telecommunications Act of 1996;

Exhibit 4: Compliance with public utility variance standards;

Exhibit 5: SEQRA environmental assessment form;

Exhibit 6: Radio frequency memorandum and propagation maps;

Exhibit 7: Redacted lease agreement;

Exhibit 8: Blue Wireless letter of intent;

Exhibit 9: FCC license;

Exhibit 10: FCC compliance report;

Exhibit 11: FAA no hazard determination;

Exhibit 12: Photo simulations;

Exhibit 13: Project related items; and

Exhibit 14: Zoning Law compliance exhibit.

We have also enclosed the following:

- 18 sets of project plans (11" by 17");
- 18 copies of this application packet; and
- Two (2) checks for $75.00 each to cover the required application fees.

If submission to the Chemung County Planning Department is required under General Municipal Law Section 239-m, please send a full copy of this application for review and comment.

Please note that on November 18, 2009, the Federal Communications Commission ("FCC") issued a ruling requiring that a reviewing authority has 150 days from the date of application for a new tower to render a decision on the application. *See* FCC Declaratory Ruling, 24 FCC rcd. 13994, 14006 (¶ 45) (2009) ("Shot Clock Ruling"). The Shot Clock Ruling requires that the reviewing authority notify the applicant within 30 days as to whether its application is incomplete.

I look forward to discussing this project with you and the Town as soon as possible. If you have any questions, please contact me at the number below.

Very truly yours,

Matthew T. Kerwin

Enclosures

SITE PLAN REVIEW APPLICATION

Name of Proposed Development Up State Tower Co., LLC - Southport			Date 10/8/19
Address Easterly terminus of Morley Place, Southport, NY			
Tax Map # 109.07-5-45			Zoning District
Setbacks	Front 47.59'	Side 390.9' & 737.7'	Rear 18.5'
Describe Project Construction and operation of 160' public utility telecommunications tower and related equipment			

APPLICANT

Name Up State Tower Co., LLC (co-applicant: Buffalo-Lake Erie Wireless Systems)		
Address 4915 Auburn Ave., Suite 208		
City Bethesda	State MD	Zip 20814
Phone 716-605-9500	Email	

OWNER (if different)

Name Budd Street Properties LLC		
Address 61 Combs Hill Road		
City Pine City	State NY	Zip 14871
Phone 607-725-9313	Email	

PROPOSAL DATA (must fill in all information)

Days and Hours of Operation	24/7	
# of Parking Spaces	1	
# of Handicap Parking Spaces	n/a	
# of Employees	unmanned facility	
# of Vehicles on Lot (automotive business)	unmanned facility	
Handicap Access	n/a	
# of Signs	Size tbd by FCC	Location tbd by FCC
Type of Outside Lighting	n/a	
Type of Buffer (fence, bushes, etc.)	fence	
Disposal of garbage	n/a	
Disposal of debris	n/a	
Stormwater drainage	n/a - pervious surface on access road and compound	

OTHER PERMITS REQUIRED IF APPROVED

Agency	Permit
Town of Southport Code Enforcement	Operating Permit
Town of Southport Code Enforcement	Building Permit

CERTIFICATION

I (We) hereby make application for a Site Plan Approval declaring that the information contained in this application is accurate and correct to the best of my (our) knowledge, and that property described above and indicated on a Concept/Preliminary/Final Plan is in my (our) legal, uncontested ownership, without any outstanding rights, reservations, or other encumbrances, which could nullify the intended use as shown. I (We) understand that a provision of laws and ordinances covering this application will be complied with whether specified or not. This application does not presume to give authority to violate or cancel provisions of any local law regarding this application, and/or construction regarding this application. I (We) understand that I (We) can not operate or start the project applied for herein until such time as the Town of Southport grants approval and all necessary permits are secured.

Signature of Applicant M. Jamin, Attorney Date 10/8/19

Property Owner see attached redacted lease Date

ACKNOWLEDGEMENT

I/we hereby certify that I/we have read the instructions and received a copy. I/we understand that a provision of laws and ordinances covering this application will be complied with whether specified or not. Instructions specified here do not presume to give authority to violate or cancel provisions of any other law or local law regulating this application and/or construction or performance of construction relating to this application. I/we understand that I/we cannot operate or start the project applied for herein until such time as the Town of Southport grants approval and all necessary permits are secured.

Applicant signature Matthew T. Kerwin, Attorney Date 10/8/19

Address 125 E. JEFFERSON ST. SYRACUSE, NY 13202

Phone 315-425-2820

TOWN OF SOUTHPORT

1139 Pennsylvania Avenue, Elmira, NY 14904

Variance Procedure

Variance procedure requires a Public Hearing to be held. Procedure on what you will need to do for the Public Hearing will be provided to you. The Town will also post a sign on the variance property stating the date and time of the Public Hearing. It will take at least two meetings before you will have the Board of Appeals decision. There is no guarantee your variance will be granted. If your Variance is granted, you may also be required to go before the Planning Board for Site Plan Review. Code Enforcement will provide you with all information needed.

If the Variance application is approved, a Building Permit is required for any construction, renovations, or alterations. ALL commercial projects will require stamped architect prints. ALL other projects costing $20,000 and over will require stamped architect prints. Discuss your project fully with the Code Enforcement Officer.

1. Write a detailed letter to the **Board of Appeals** explaining request and be specific with number of employees, hours of operation, off street parking places, signs, etc.
2. Fill out part 1 only of attached State Environmental Assessment (SEQR) form.
3. Read, sign and date the Acknowledgement Sheet.
4. Submit a property survey. Major projects will require full site plan drawings. Discuss with Code Officer.
5. If you do not own the property, provide letter from owner giving you permission for your project. If you are buying the property, provide copy of purchase offer agreement (we do not need to know cost).
6. Non- refundable application fee: $75.00 Make check payable to "Town of Southport".

Submit all paperwork to our office 10 days prior to the Board of Appeals meeting _____
Late applications will be put on the next agenda.

You or your representative must attend all meetings. 1st meeting _____ Wednesday at 7:00 PM Town Hall.

Some applications need to be reviewed by Chemung County Planning Board. If you get a letter from them about a meeting, you can attend but not required to do so.

I/we hereby certify that I/we have read the instructions and received a copy. I/we understand that a provision of laws and ordinances covering this application will be complied with whether specified or not. Instructions specified here do not presume to give authority to violate or cancel provisions of any other law or local law regulating this application and/or construction or performance of construction relating to this application. I/we understand that I/we cannot operate or start the project applied for herein until such time as the Town of Southport grants approval and all necessary permits are secured.

Applicant: Up State Tower Co., LLC (and Buffalo-Lake Erie Wireless Systems)

Applicant signature Matthew T. Kennin, Attorney Date 10/8/19

Address 125 E. Jefferson St. Syracuse, NY 13215

Phone 315-425-2820

OFFICE USE: Address:	Tax Map No:	Zoned:

Area Variances

A. The Zoning Board of Appeals, on an appeal from a decision or determination of the Code Enforcement Officer, shall have the power to grant area variances as defined herein.

B. In making the determination, the Zoning Board of Appeals shall take into consideration the benefit to the applicant, if the area variance is granted, as weighed against the detriment to the health, safety, and general welfare of the neighborhood or community by such grant. In making such determination, the Board shall consider the following:

(1) Whether an undesirable change will be produced in the character of the neighborhood or community or a detriment to nearby properties will be created by the granting of the area variance;

(2) Whether the benefit sought by the applicant can be achieved by some method, feasible for the applicant to pursue, other than an area variance;

(3) Whether the requested area variance is substantial;

(4) Whether the proposed area variance will have an adverse affect or impact on the physical or environmental conditions in the neighborhood or district;

(5) Whether an alleged difficulty of compliance with the zoning requirement was self-created, which is relevant to the decision but shall not necessarily preclude the granting of the area variance.

* Please see the attached supporting exhibits, including Ex. 4.

ACKNOWLEDGEMENT

The above information explains what the Board of Appeals will be considering on an Area Variance application.

I acknowledge receiving a copy of this explanation sheet and that it is my responsibility to be prepared to explain and discuss with the Board of Appeals how my application for an Area Variance complies with all of the issues listed above.

Matthew T. Jenkins, Attorney
Applicant Signature

10/8/19
Date

EXHIBIT 2

PROJECT DESCRIPTION

Up State Tower Co., LLC ("Up State"), in connection with Buffalo-Lake Erie Wireless Systems Co., LLC ("Blue Wireless"), makes this application to construct a 160' self-support tower telecommunications facility on property located at the easterly terminus of Morley Place on property identified as tax parcel 109.07-5-45, in the Town of Southport, New York (the "Site") to be utilized by Blue Wireless and potential future carriers for the collocation of antennas and related equipment. Blue Wireless is considered a public utility under New York case law for zoning purposes and is licensed and regulated by the Federal Communications Commission ("FCC").

I. Overview of Wireless Telephone Technology

Wireless telephones operate by transmitting a very low power radio signal between a telephone and an antenna mounted on a tower, pole, building or other tall structure. The signal travels from the antenna to a small electronic switching station, housed in an equipment cabinet near the antenna, where it is connected to a landline telephone cable and routed anywhere in the world. The wireless facility (antenna and equipment cabinet) is known as a "cell site."

Because of the low power of wireless telephones, a cell site is only able to transmit to, and receive a signal from, a wireless telephone within a limited geographical area called a "cell". A series of cells creates a wireless network. Technology requires that cells slightly overlap so that a wireless transmission is transferred from one cell site to another as a user moves through the wireless network. Accordingly, there is limited flexibility as to where a cell site can be placed to be technically appropriate to provide service throughout a particular cell and provide overlapping coverage with neighboring cells.

In order to determine the technically appropriate location for a cell site, a computer program is used to generate a "propagation study". A propagation study depicts, based on cell boundaries, topography and other factors, where a cell site needs to be located in order to provide adequate service throughout a cell and appropriate overlapping service with neighboring cells.

As discussed more fully in the accompanying radio frequency materials, Blue Wireless lacks 4G LTE service within its coverage objective area. The facility is necessary for Blue Wireless to address a

significant gap in service and provide reliable wireless service to its customers. The proposed tower is designed to accommodate the collocation of a total of five (5) carriers, including Blue Wireless. The facility will be inert and will not create any noise or vibration, will not increase population density, will not significantly increase traffic, will not create any demand on municipal facilities, and will not create any environmental problems.

II. Project Description and Municipal Approvals

As part of its FCC license, Blue Wireless is responsible for providing wireless telecommunications services to parts of New York State, including the Town of Southport. Up State, in connection with Blue Wireless, makes this application to construct a 160' self-support tower (with a proposed 5' lightning rod) to be used by Blue Wireless for the placement of nine (9) antennas and three (3) microwave dishes at an antenna centerline height ("ACL") of 160' on the tower. Blue Wireless' cabling will run from the antennas down the tower and be connected via an ice bridge to its proposed ground based equipment cabinets located on a 10' by 12' concrete pad. The tower and equipment area will be surrounded by a 60' by 60' fenced compound which will be accessed via a 20' wide access and utility easement.

Propagation studies have confirmed that a telecommunications facility at the Site will enable Blue Wireless to provide reliable service and alleviate service issues in the Town. Furthermore, the telecommunications facility proposed by Up State and Blue Wireless will fulfill Blue Wireless' obligation to provide adequate and reliable public utility/wireless telecommunications services to emergency services, businesses, and individuals in Southport and the surrounding area.

EXHIBIT 3

COMPLIANCE WITH THE TELECOMMUNICATIONS ACT OF 1996

On February 8, 1996, Congress adopted the Telecommunications Act of 1996 to "promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunication technologies." 47 U.S.C. §157 et. seq.

The Act places limits on the ability of a State or local government to regulate the siting of wireless facilities (cell towers or antennas) which are the central components of wireless telephone networks. Under the Act, local governments:

- May not make siting decisions based on the perceived health impacts of wireless facilities.

  "No State or local government or instrumentality thereof may regulate the placement, construction and modification or personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." (P.L. 104-104, Section 704 (a)(7)(B)(iv)).

- May not unreasonably discriminate among providers of functionally equivalent services.

  "The regulations of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof-(I) shall not reasonably discriminate among providers of functionally equivalent services and (II) shall not prohibit or have the effect of prohibiting the provisions of personal wireless service." (P.L. 104-104, Section 704(a)(7)(B)(i)).

- May not prohibit or have the effect of prohibiting the provision of personal wireless services.

  "The regulations of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof-(I) shall not reasonably discriminate among providers of functionally equivalent services and (II) shall not prohibit or have the effect of prohibiting the provisions of personal wireless service." (P.L. 104-104, Section 704(a)(7)(B)(i)).

- Must decide all applications within a reasonable period of time.

> "A State or local government or instrumentality thereof shall act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time after the request is duly filed with such government or instrumentality, taking into account the nature and scope of such request." (P.L. 104-104, Section 704 (a)(7)(B)(ii)).

While the Act preserves local government zoning authority, municipalities must operate within the limitations outlined in the Act and the legal standards for New York State public utilities.

In the present case, the telecommunications facility proposed by Up State Tower Co., LLC and Buffalo-Lake Erie Wireless Systems Co., LLC ("Blue Wireless") is necessary for Blue Wireless to provide adequate and reliable wireless telecommunications service coverage to the Southport area. The lack of adequate telecommunication facilities is the reason for the existing service inadequacies; this will be remedied for Blue Wireless by the proposed facility. Blue Wireless will also demonstrate that due to certain factors, there is very limited flexibility as to where this facility can be located. For all of these reasons, Up State and Blue Wireless satisfy the requisite showing of need for the facility under the applicable New York law, and the project complies with the provisions and intent of the Telecommunications Act.

EXHIBIT 4

DISCUSSION OF APPLICABLE VARIANCE STANDARDS

Up State Tower Co., LLC ("Up State"), in connection with Buffalo-Lake Erie Wireless Systems ("Blue Wireless"), requires the following variances from the Town of Southport Zoning Board of Appeals ("ZBA") concerning the construction and operation of the proposed 160' self-support tower telecommunications facility (with a proposed 5' lightning rod) on property located at the easterly terminus of Morley Place (tax parcel 109.07-5-45) (the "Site"):

- A variance from Town Zoning Law Section 525-109(D)(1)(a) to permit tower setback distances of approximately 47.59' to the western property line and 18.5' to the eastern property line; and
- A variance from Town Zoning Law Section 525-109(D)(2) to permit a tower height of 160'(with a proposed 5' lightning rod).

Compliance with Legal Standards for a Public Utility

Telecommunications facilities that require a variance are not governed by the usual variance criteria (*e.g.*, whether the situation was self-created, etc.), but instead by those standards established for a public utility. *See* Cellular Tel. Co. v. Rosenberg, 82 N.Y.2d 364 (1993). A provider of wireless services must show only that (1) the requested relief is "required to render safe and adequate service," and (2) there are "compelling reasons, economic or otherwise," for the requested variance. Cellular Tel. Co. v. Rosenberg, 82 N.Y.2d 364, 372 (1993). A municipality must therefore afford special treatment to a public utility when considering its zoning application.

In New York State, "it has long been held that a zoning board may not exclude a utility from a community where the utility has shown a need for its facilities." Matter of Consolidated Edison Co. v. Hoffman, 43 N.Y.2d 598 (1978). This special treatment of public utilities stems from the essential services they provide and because a public utility facility must be located in a particular area in order to provide service.

> [Public] utility services are needed in all districts; the service can be provided only if certain facilities (for example, substations) can be located in commercial and even in residential districts. To exclude such use would result in an impairment of an essential service.

Anderson, New York Zoning Law Practice, 3d. ed., p. 411 (1984). See also, Cellular Tel. Co. v. Rosenberg, 82 N.Y.2d 364 (1993); Payne v. Taylor, 178 A.D.2d 979 (4th Dept. 1991).

In 1993, the New York Court of Appeals determined that wireless telephone facilities are public utilities. *See* Cellular Tel. Co. v. Rosenberg, 82 N.Y.2d 364 (1993). The court held that

proposed cellular telephone installations are to be reviewed by zoning boards under the traditional standard for public utilities rather than the standards typically required for the necessary municipal approval.

The court stated that cellular telephone companies, as public utilities, "may not [be] exclude[d]...from a community where the utility has shown a need for its facility." Rosenberg, 82 N.Y.2d at 372 (citing consolidated Edison Co. v. Hoffman, 43 N.Y.2d 598 (1978)).

> There can be no question of Cell One's need to erect the cell site to eliminate service gaps in its cellular telephone service area. The proposed cell site will also improve the transmission and reception of existing service. Application of our holding in Matter of Consolidated Edison to sitings of cellular telephone companies, such as Cellular One, permits those companies to construct structures necessary for their operation which are prohibited because of existing zoning laws and to provide the desired services to the surrounding community....Moreover, the record supports the conclusion that Cellular One sustained its burden of providing the requisite public necessity. Cellular One established that the erection of the cell site would enable it to remedy gaps in *its service area* that currently prevent it from providing adequate service to *its customers* in the Dobbs Ferry area.

Rosenberg, 82 N.Y.2d at 372-373 (emphasis added). The Rosenberg court found that the wireless company had satisfied the requisite showing of need for the wireless facility and that the new facility would remedy gaps in the service area that prevented the company from providing adequate services. The court was clear that a need for a facility exists if service is either not available, or available but without sufficient capacity to meet the demand for the service.

Accordingly, the law in New York is that a wireless facility, as a public utility, may not be excluded from a municipality where the utility has shown the facility to be necessary for the transmission of its essential service. *See* Rosenberg, 82 N.Y.2d at 372; Long Island Lighting Co. v. Griffin, 272 A.D. 551 (2d Dept. 1947) (expansion of a public utility may not be prohibited by a municipality where such expansion is necessary to the maintenance of essential services). Blue Wireless satisfies the standards established in Rosenberg and thus the standards for the requested variance.

Compliance with *Rosenberg* Public Utility Variance Standard

As explained in Exhibit 6, the height of the tower is a function of Blue Wireless' need to place its antennas at a centerline height of 160' to provide reliable service to the coverage objective area to address the demonstrated service gap. Placement of its antennas at lower ACLs would result in significant, unacceptable reductions in Blue Wireless' service within the coverage objective area. Accordingly, a height variance is necessary to enable Blue Wireless to

provide its essential service. While the project will present a slight change in the viewshed in the area immediately surrounding the site, the change is unavoidable given Blue Wireless' service needs in the area. The change will be minor given that the visibility of the tower will be buffered or minimized to a certain extent by existing trees, structures, and topography in the area. Further, the appearance of the tower will be similar to that of other towers in the surrounding area as demonstrated by the photo simulations depicted at Exhibit 12.

The Town Zoning Law permits wireless telecommunications antenna/tower facilities in only the Agricultural Residential ("AR") and Industrial zoning districts. The search ring contains numerous properties that are zoned Industrial, Commercial Regional, Commercial Neighborhood, and Residential 3. The search ring includes a strip of land along the western side of Clemens Center Parkway/State Route 14 that is zoned Industrial. The nearest AR-zoned property is at least .5 miles west of the search ring. The proposed tower Site is located within the search ring in the Industrial district adjacent to Clemens Center Parkway/State Route 14, a heavily traveled corridor serving the Southport and Elmira areas. The northern portion of Site is developed with a commercial/industrial use, and similar industrial/commercial uses are located north and south of the Site along State Route 14.

The proposed tower height of 160' (with a 5' lightning rod) requires a setback of equal height pursuant to the Zoning Law. No other properly zoned parcels (i.e., zoned AR or Industrial) exist within or in close proximity to the search ring and are large enough to enable the applicants to achieve Blue Wireless' service objective without the need for a setback variance. To alleviate concerns about the requested setback variance and the proximity of the tower to the property lines, the tower will be designed with a structurally engineered break point at a height of 140', as depicted in the project plans. In the event of a significant storm event, the tower would fail (if at all) at the break point, resulting in an effective fall zone radius of 20' that would be contained entirely within the lease area.

It should be noted that the applicants evaluated a total of 13 other sites within and outside of the search ring, none of which were suitable alternatives to the proposed Site. The applicants have demonstrated by substantial evidence in the form of the radio frequency justification report provided at Exhibit 6 that a significant gap in service exists within Blue Wireless' network in the Southport area. The proposed tower facility is sited in an appropriate location within Blue Wireless' search ring and is designed at a height sufficient to enable Blue Wireless to address its service issues in order to provide needed reliable wireless service to its customers within its FCC licensed territory. Based on the foregoing, as well as the numerous exhibits submitted in support of the application, the applicants respectfully submit that they have satisfied the burden of proof under the Rosenberg standard.

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Up State Tower #ELM-765		
Project Location (describe, and attach a general location map): Easterly terminus of Morley Place, Town of Southport, NY		
Brief Description of Proposed Action (include purpose or need): Construction and operation of a proposed 160' public utility telecommunications tower with a 60' x 60' fenced compound and associated ground equipment.		
Name of Applicant/Sponsor: Up State Tower Co. LLC	Telephone: 716-605-9500 E-Mail:	
Address: 4915 Auburn Ave., Suite 208		
City/PO: Bethesda	State: MD	Zip Code: 20814
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Budd Street Properties LLC	Telephone: 607-725-9313 E-Mail:	
Address: 61 Combs Hill Road		
City/PO: Pine City	State: NY	Zip Code: 14871

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Site Plan Approval - Planning Board	12/17
c. City Council, Town or Village Zoning Board of Appeals ☑Yes ☐No	Area Variance - Zoning Board of Appeals	12/17
d. Other local agencies ☐Yes ☑No		
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☐Yes ☑No		
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):
NYS Major Basins:Upper Susquehanna

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
I - Industrial

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Elmira City School District

b. What police or other public protection forces serve the project site?
Town of Southport police, Chemung County Sherrif

c. Which fire protection and emergency medical services serve the project site?
Southport Fire District #2

d. What parks serve the project site?
Cypress Street Park / Beecher Street Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Industrial

b. a. Total acreage of the site of the proposed action? 3.94 acres
b. Total acreage to be physically disturbed? 0.082 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.082 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 1-2 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 160 height; 60 width; and 60 length

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: _____

iii. If other than water, identify the type of impounded/contained liquids and their source. _____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i. What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐Yes☐No

If Yes, describe: _____

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes☐No
- Is the project site in the existing district? ☐Yes☐No
- Is expansion of the district needed? ☐Yes☐No
- Do existing lines serve the project site? ☐Yes☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes☐No
- Is the project site in the existing district? ☐Yes☐No
- Is expansion of the district needed? ☐Yes☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☑No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend

☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

200kwh

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

grid / ocal utility

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7 am - 5 pm
- Saturday: n/a
- Sunday: n/a
- Holidays: n/a

ii. During Operations:

- Monday - Friday: 24 hr
- Saturday: 24 hr
- Sunday: 24 hr
- Holidays: 24 hr

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe:

n.. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe:

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities:

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction:
- Operation:

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction:
- Operation:

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☑ Urban ☑ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

Industrial corridor bordering NYS Route 14 to the east, and urban neighborhood to the west.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	0.082	+ 0.082
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0.082	0	- 0.082
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities: _____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection: _____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes: ☐ Yes ☐ No

i. Has the facility been formally closed?

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility: _____

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred: _____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes: ☐ Yes ☑ No

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply:

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): 808005

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

Remington Rand Mach. - Div. Sperry Rand: Cedar Street, Southport -- Former landfill, remediation activities are complete and site is deed / use restricted.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? +5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site: Howard Gravelly Silt Loam 100 %
_____ %
_____ %

d. What is the average depth to the water table on the project site? Average: +6.7 feet

e. Drainage status of project site soils: ☑ Well Drained: 100 % of site
☐ Moderately Well Drained: _____ % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes: ☑ 0-10%: 100 % of site
☐ 10-15%: _____ % of site
☐ 15% or greater: _____ % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☑ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100 year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500 year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No

If Yes:

i. Name of aquifer: Principal Aquifer, Primary Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
common birds and small mammals

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation):

ii. Source(s) of description or evaluation:

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No

i. If Yes: acreage(s) on project site?

ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name:

ii. Basis for designation:

iii. Designating agency and date:

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based: _____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Newtown Battlefield State PArk

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: 3.8 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Carpenter Consulting Group (agent) Date 9/22/17

Signature _____ Title Principal

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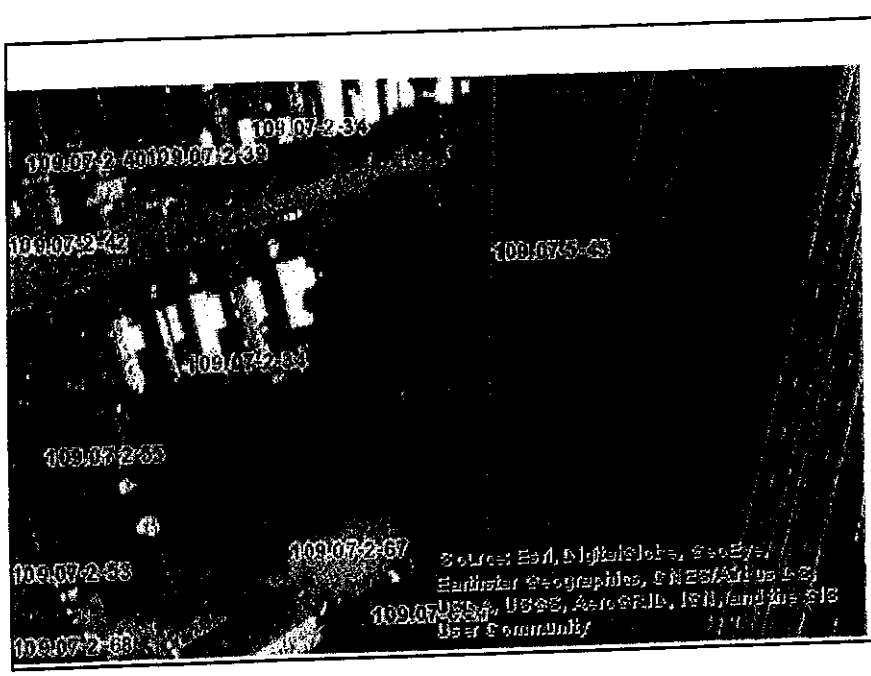
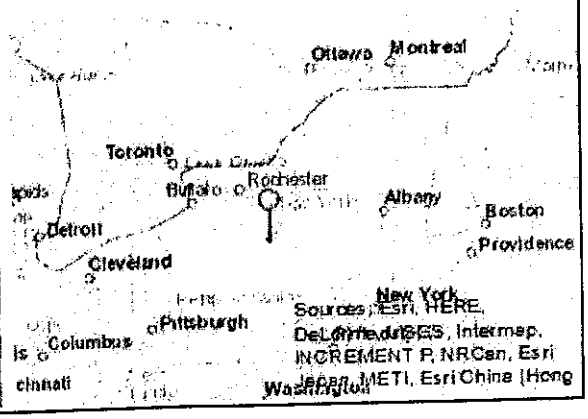
EAF Mapper Summary Report

Tuesday, September 26, 2017 7:02 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	NYS Major Basins:Upper Susquehanna
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	808005
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	No
E.2.h.iii [Surface Water Features]	No
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	Yes

E.2.l. [Aquifer Names]	Principal Aquifer, Primary Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National Register of Historic Places]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Agency Use Only [If applicable]

Project :

Date :

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land ☐NO ☐YES

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)

If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☐	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☐NO ☐YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☐NO ☐YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☐	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☐	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☐	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☐	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☐	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☐	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☐

l. Other impacts: _____		☐	☐

4. Impact on groundwater ☐NO ☐YES

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer.
(See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t)
If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☐	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☐	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☐	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☐	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☐	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☐	☐
h. Other impacts: _____		☐	☐

5. Impact on Flooding ☐NO ☐YES

The proposed action may result in development on lands subject to flooding.
(See Part 1. E.2)
If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: _____		☐	☐

6. Impacts on Air ☐NO ☐YES

The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D,2,h, D.2.g)

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____		☐	☐

7. Impact on Plants and Animals ☐NO ☐YES

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.)

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☐	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☐	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☐	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☐	☐
j. Other impacts: _____ _____		☐	☐

8. Impact on Agricultural Resources ☐NO ☐YES

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.)

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, Elb	☐	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☐	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☐	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	El a, E1b	☐	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☐	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☐	☐
h. Other impacts: _____		☐	☐

9. Impact on Aesthetic Resources ☐NO ☐YES

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☐ ☐	☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☐ ☐	☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____		☐	☐

10. Impact on Historic and Archeological Resources ☐NO ☐YES

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on or has been nominated by the NYS Board of Historic Preservation for inclusion on the State or National Register of Historic Places.	E3e	☐	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☐	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☐	☐

d. Other impacts: _____		☐	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation ☐ NO ☐ YES

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: _____		☐	☐

12. Impact on Critical Environmental Areas ☐ NO ☐ YES

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____		☐	☐

13. Impact on Transportation
The proposed action may result in a change to existing transportation systems. ☐ NO ☐ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: _____		☐	☐

14. Impact on Energy
The proposed action may cause an increase in the use of any form of energy. ☐ NO ☐ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☐	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: _____		☐	☐

15. Impact on Noise, Odor, and Light
The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☐ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☐	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☐	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☐	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health ☐ NO ☐ YES

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.)

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may occur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____		☐	☐

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. ☐NO ☐YES

(See Part 1. C.1, C.2. and C.3.)

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, E1b	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. ☐NO ☐YES

(See Part 1. C.2, C.3, D.2, E.3)

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

Agency Use Only [If Applicable]

Project :

Date :

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

Part 3 provides the reasons in support of the determination of significance. The lead agency must complete Part 3 for every question in Part 2 where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.

Based on the analysis in Part 3, the lead agency must decide whether to require an environmental impact statement to further assess the proposed action or whether available information is sufficient for the lead agency to conclude that the proposed action will not have a significant adverse environmental impact. By completing the certification on the next page, the lead agency can complete its determination of significance.

Reasons Supporting This Determination:

To complete this section:

- Identify the impact based on the Part 2 responses and describe its magnitude. Magnitude considers factors such as severity, size or extent of an impact.
- Assess the importance of the impact. Importance relates to the geographic scope, duration, probability of the impact occurring, number of people affected by the impact and any additional environmental consequences if the impact were to occur.
- The assessment should take into consideration any design element or project changes.
- Repeat this process for each Part 2 question where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.
- Provide the reason(s) why the impact may, or will not, result in a significant adverse environmental impact
- For Conditional Negative Declarations identify the specific condition(s) imposed that will modify the proposed action so that no significant adverse environmental impacts will result.
- Attach additional sheets, as needed.

Determination of Significance - Type 1 and Unlisted Actions

SEQR Status: ☐ Type 1 ☐ Unlisted

Identify portions of EAF completed for this Project: ☐ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF, as noted, plus this additional support information

and considering both the magnitude and importance of each identified potential impact, it is the conclusion of the _____ as lead agency that:

☐ A. This project will result in no significant adverse impacts on the environment, and, therefore, an environmental impact statement need not be prepared. Accordingly, this negative declaration is issued.

☐ B. Although this project could have a significant adverse impact on the environment, that impact will be avoided or substantially mitigated because of the following conditions which will be required by the lead agency:

There will, therefore, be no significant adverse impacts from the project as conditioned, and, therefore, this conditioned negative declaration is issued. A conditioned negative declaration may be used only for UNLISTED actions (see 6 NYCRR 617.d).

☐ C. This Project may result in one or more significant adverse impacts on the environment, and an environmental impact statement must be prepared to further assess the impact(s) and possible mitigation and to explore alternatives to avoid or reduce those impacts. Accordingly, this positive declaration is issued.

Name of Action:

Name of Lead Agency:

Name of Responsible Officer in Lead Agency:

Title of Responsible Officer:

Signature of Responsible Officer in Lead Agency: Date:

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person:

Address:

Telephone Number:

E-mail:

For Type 1 Actions and Conditioned Negative Declarations, a copy of this Notice is sent to:

Chief Executive Officer of the political subdivision in which the action will be principally located (e.g., Town / City / Village of)
Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

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Site Selection and Justification Report
Blue Wireless Site #ELM-765

1. Introduction

Wireless services, such as mobile phones, are increasingly important in our society. The general public, businesses, police, fire fighters and ambulance services, as well as government agencies, aviation systems and national defense all use mobile services. Through the introduction of smartphones, traditional cellular phones are no longer limited to making simple voice calls. Modern smartphones have the capacity to do a lot more due to their ability to access high-speed data via the internet.

Studies show that data usage is growing dramatically, which, in turn, is driving the need for additional cell sites for capacity and coverage in carriers' networks. Wireless carriers constantly strive to improve coverage and network quality for their clients, and to achieve a reliable wireless network for all users, carriers must provide a seamless transmission signal to alleviate gaps in coverage. For wireless services to work effectively, antenna systems mounted on towers, rooftops and other available tall structures are required to deliver services to a given coverage area.

Blue Wireless is a provider of cellular wireless voice and data coverage with a network that spans western New York and northern Pennsylvania. Blue Wireless has built its network to provide wireless service in locations where demand has been identified. Over time, as demand for service enters new areas, such as new commercial and residential developments, Blue Wireless' existing network may or may not be able to provide wireless service. In the case where the existing network does not provide wireless service, it is necessary to expand the network to ensure adequate service in these areas.

Communication facilities are not only needed in new commercial and residential developments, but they are also required when the demand for wireless service increases through transient population growth (such as shopping, sporting events, or community college attendance), traffic increases, or greater use of data by new technology, such as smart vehicles, personal fitness devices and tablets. The existing network was designed to meet a certain level of demand, and over time, as demand increases, the network must be upgraded to maintain a high quality of service for its users, as well as the capacity for increasing services and devices.

Blue's Radio Frequency (RF) Engineering team uses propagation and coverage prediction software to analyze existing coverage areas, as well as areas with a lack of coverage or capacity. Communication facilities are selected based on critical factors such as existing

locations of communication facilities within the wireless network, assumptions in demand fluctuations, physical challenges such as topography, and areas of customer cluster, such as colleges, parks, shopping centers, offices, factories, residential areas and major highways.

Two of the most important factors in providing wireless communication services are the antenna and the mounting structure or tower. The antenna is the essential element that sends and receives signals from the radio transmitter stations. The tower allows the antenna to be raised above obstructions such as trees and buildings to ensure that it can clearly send and receive communication signals.

2. Justification

Cellular devices operate by receiving and transmitting the cellular frequency at varying signal levels, depending upon proximity to the base station and tower. This signal level is measured in dBm, which is an abbreviation for the ratio in decibels (dB) of the measured power referenced to one milliwatt (mW). The two primary benchmarks for user signal levels are -75 dBm, considered sufficient to penetrate most residential dwellings and other buildings and hence described as 'in-building coverage', and -85dBm, which is considered sufficient to penetrate vehicles and therefore described as 'in-vehicle coverage'.

Wireless transmitter output power levels are very low compared to commercial radio stations, which generally operate in the 100 kW range, and television broadcast signals, which generally operate at power levels in the 10-50 kW range. The FCC limits the power output for cellular frequencies with an antenna height of up to 300 meters (985 ft.) to 1640 watts, or 1.64 kW. Hence, cellular signal travel distance and coverage is by comparison relatively limited. Buildings, trees, foliage and other physical obstructions can attenuate and block a signal completely, as can the physical topography of the surrounding area. Therefore, location and height are extremely important when it comes to selecting the placement of cellular antennas and towers.

The frequency band within the range of FCC licensed radio spectrum is a critical determining factor to signal propagation characteristics. Physics principles covering the relationship between frequency and wavelength govern the ability of cellular signal to travel. The lower the frequency, the further signal can travel with more strength. The practical, real world, implications of these scientific properties is that "Low Band' radiofrequency spectrum such as 600mhz-850mhz travel far distances and have strong abilities to penetrate structures and foliage to provide in-building coverage. Higher band radiofrequency spectrum, such as the PCS band in the 1900Mhz range and the AWS band in the 2100Mhz range travel shorter distances and have a lesser ability to penetrate structures to provide in-building coverage. A cellular carrier's network design and ability to provide the reliable in-building coverage is

greatly dependent on which federal radiofrequency licenses they own and operate within and network designs will be based on these characteristics. Blue Wireless operates within the 1900Mhz PCS licensed frequency which requires cell sites to be closer spaced to provide equivalent coverage as would be achieved from similar networks operating on Low Band frequencies. **Exhibit A** further explains Blue Wireless' required cell site spacing and **Exhibit B** exemplifies a study performed to examine the difference in the number of required cell sites to obtain equivalent coverage between cellular network operations within the Low Band 850Mhz and the 1900Mhz PCS band.

Blue Wireless' RF team strives to maintain reliable 'in-building' coverage as well as 'in-vehicle' coverage for its customers. In-vehicle coverage is typically the easier to achieve of the two, as the signal has fewer obstructions. In densely populated areas, in-building coverage presents the larger challenge, as it requires a denser signal level in areas that are closer to the population. Below are some of the criteria considered when selecting cellular transmitter locations and determining if they meet coverage objectives:

Does the location provide in-building coverage to target areas, such as residential neighborhoods, shopping malls, schools and public safety corridors?

Does the location provide in-vehicle coverage to major highways and public safety corridors?

Does the location provide adequate population penetration to be financially viable?

Does the structure height clear building and tree clutter so there is good line of sight connectivity to target the coverage areas as well as adjacent cells?

3. Coverage Objectives

Blue Wireless' RF engineering team has determined that a service gap exists in the Town of Southport, specifically with respect to in-building service in the homes and businesses surrounding County Route 14 south and west of the service currently provided by the ELM30 and ELM-764 sites, respectively (the "coverage objective area"). In addition, Blue Wireless seeks to provide in-vehicle service in those same areas where none exists currently. In order to provide a consistent quality of adequate and reliable service to this area for voice and high-speed 4G LTE wireless data, a new site is required.

The propagation map found at **Exhibit C** below depicts the existing coverage provided by Blue Wireless' surrounding facilities. Customers living, working, or traveling in the areas depicted on the Existing Coverage map enjoy a consistent quality of service. Customers

located outside those areas do not have service or experience unreliable service in the form of dropped calls and a lack of data connectivity when accessing the internet.

Blue Wireless' RF engineering team evaluated the existing coverage gap and developed a candidate location search ring or area ("Search Ring"), as shown on **Exhibit D**. The Search Ring represents the area within which a new cell site, if installed at an appropriate height, is likely to provide reliable coverage to the coverage objective area. Locations outside of the Search Ring are generally unable to adequately address the coverage gap. Due to a variety of factors, including technical constraints posed by the nature of wireless service, Blue Wireless has limited flexibility concerning the location of a proposed facility to address the coverage gap and provide the desired service benchmarks to the coverage objective area. Ultimately, the Search Ring enables Blue Wireless to define the parameters within which a new facility may be located to provide reliable service and function appropriately within its network.

The predicted coverage from the proposed facility site at Morley Place (the "Site") at an antenna centerline height ("ACL") of 160' is depicted in the proposed coverage propagation map found at **Exhibit E**. As depicted in Exhibit E, the proposed site will remedy the service gap by providing in-building coverage to the coverage objective area, including approximately 2.1 miles along Route 14, 1.6 miles along Broadway Street, and 1.9 miles along Pennsylvania Avenue, as well as the surrounding community. In addition, in-vehicle coverage will be extended significantly west/southwest of the site in the area surrounding Pennsylvania Avenue.

The proposed Site was chosen due to its location within the Search Ring on a parcel in the Industrial zoning district. The Town Zoning Law permits wireless telecommunications antenna/tower facilities in the Industrial zoning district. The Site is located on property adjacent to Clemens Center Parkway/State Route 14, a heavily traveled corridor serving the Southport and Elmira areas. The northern portion of the property is developed with a commercial/industrial use, and similar industrial/commercial uses are located north and south of the site along State Route 14.

As part of its analysis of the proposed Site and potential alternative sites, Blue Wireless evaluated the effect that each alternative site and height would have on incremental coverage to its network. This was done by calculating and modeling the incremental -75dbm or better in-building coverage and -85dbm or better in-vehicle coverage that each site would provide within the coverage objective area. Blue Wireless evaluated this from the perspective of both the incremental number of people who would receive coverage, as well as the incremental geographic area that would receive coverage. The computation zone for this analysis of coverage provided to the coverage gap is shown on **Exhibit F** within the red polygon shaped

area. The resultant analysis included in this exhibit provides the empirical data for that incremental coverage for each potential site within that coverage gap/computation zone area.

It should be noted that coverage from the proposed Site at Morley Place was evaluated at lower ACLs to confirm that an ACL of 160' was the minimum height necessary for Blue Wireless to provide reliable service to its coverage objective area. Blue Wireless evaluated the coverage provided by an ACL at both 140' and 120', which is depicted in the propagation maps at **Exhibits G** and **H**, respectively.

As set forth in Exhibit F, the coverage provided at an ACL of 140' is unacceptable in that there are significant, unacceptable reductions in coverage in terms of the population (13% for in-building, 6% for in-vehicle) and geographical area (19% for in-building, 67% for in-vehicle) served.

Similarly, the coverage provided at an ACL of 120' is unacceptable in that there are significant, unacceptable reductions in coverage in terms of the population (21% for in-building) and geographical area (29% for in-building, 67% for in-vehicle) served.

The coverage gains provided by the 160' ACL level substantiate the need for that height.

4. Alternate Sites Evaluated

The Search Ring includes numerous properties that are zoned Industrial, Commercial Regional, Commercial Neighborhood, and Residential 3. The Town of Southport Zoning Code only allows telecommunications antennas/facilities in the Industrial and Agricultural Residential ("AR") zoning districts. The Search Ring includes a strip of land along the western side of Clemens Center Parkway/State Route 14 that is zoned Industrial. The nearest AR-zoned property is at least .5 miles west of the Search Ring. Blue Wireless' site acquisition representative evaluated a total of 13 alternative sites within and outside of the Search Ring. Below is a summary of those efforts and the reasons why those various properties were rejected.

Existing Towers

There are no existing towers within or in close proximity to the Search Ring. However, multiple towers outside of the Search Ring in the surrounding area were evaluated by Blue Wireless. This analysis was limited to determining whether the potential collocation of antennas by Blue Wireless on each tower could achieve Blue Wireless' goal of providing improved in-building and in-vehicle service to the coverage objective area. The analysis did

not include any discussions with the underlying owners of the towers or a structural assessment of the towers to determine whether collocation was possible.

- Southport Fire Department, 1001 Carl Street:
  There exists a an approximate 70' roof-mounted tower at the Fire Department property located approximately 0.3 miles to the southwest of the proposed candidate site. However, the tower lacks sufficient height and its lightweight design would not be structurally adequate to support for a collocation by Blue Wireless. A propagation map was not prepared for this location as the height of the tower would provide coverage at a level worse than the proposed candidate site at an ACL of 120' (see Exhibits F and H). The property is also located in the Commercial Regional zoning district, which does not allow the proposed facility. For these reasons, the property was rejected.

- Tower No. 1: Crown Castle 180' tower located on Summit Drive:
  Proposed coverage from this location at an available ACL of 150' is shown in **Exhibit I**. The tower is located approximately 1.2 miles west of the proposed site, well outside of the Search Ring. As set forth in Exhibit F, this site would result in significant, unacceptable reductions in coverage in terms of the population (82% for in-building) and geographical area (74% for in-building) served compared to the proposed ELM-765 Site at an ACL of 160'. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 2: WENY 328' tower located on Milton Street:
  Proposed coverage from this location at an ACL of 150' is shown in **Exhibit J**. The tower is located approximately 1.5 miles east of the proposed site and well outside of the Search Ring. As set forth in Exhibit F, this site would result in significant, unacceptable reductions in coverage in terms of the population (86% for in-building, 100% for in-vehicle) and geographical area (81% for in-building, 100% for in-vehicle) served compared to the proposed ELM-765 Site at an ACL of 160'. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 3: American Tower 270' tower located on Comfort Hill Road:
  Proposed coverage from this location at an ACL of 160' is shown in **Exhibit K**. The tower is located well outside of the Search Ring approximately 2.2 miles southeast of the proposed site. The site would provide no additional coverage to the coverage objective area. Given the signal propagation limitations posed by Blue Wireless' PCS

frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 4: Verizon Tower 195' tower located on Holden Road:
  Proposed coverage from this location at an ACL of 185' is shown in **Exhibit L**. This tower is located well outside of the Search Ring approximately 2.5 miles west of the proposed site. As set forth in Exhibit F, this site would result in significant, unacceptable reductions in coverage in terms of the population (99% for in-building, 51% for in-vehicle) and geographical area (97% for in-building, 100% for in-vehicle) served compared to the proposed ELM-765 Site at an ACL of 160'. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 5: Dalyrmple (WLEZ) 300' tower located on Comfort Hill Road:
  Proposed coverage from this location at an ACL of 150' is shown in **Exhibit M**. The tower is located well outside of the Search Ring approximately 2.5 miles southeast of the proposed site, as well as south of Blue Wireless's ELM-764 facility. As set forth in Exhibit F, this site would result in significant, unacceptable reductions in coverage in terms of the population (100% for in-building and in-vehicle) and geographical area (77% for in-building, 100% for in-vehicle) served compared to the proposed ELM-765 Site at an ACL of 160'. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 6: Verizon Tower 180' tower located on Comfort Hill Road:
  Proposed coverage from this location at an ACL of 150' is shown in Exhibit N. This tower is located well outside of the Search Ring approximately 2.5 miles southeast of the proposed site, as well as south of Blue Wireless's ELM-764 facility. The tower would provide no additional coverage to the coverage objective area. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 7: T&K Comm. 180' Tower located at 190 Comfort Hill Road:
  Proposed coverage from this location at an ACL of 150' is shown in **Exhibit O**. This tower is located well outside of the Search Ring approximately 3.9 miles south of the proposed site. The tower would provide no additional coverage to the coverage

objective area. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 8: Chemung County 180' tower located at 192 Comfort Road:
  Proposed coverage from this location at an ACL of 150' is shown in **Exhibit P**. This tower is located well outside of the Search Ring approximately 3.9 miles south of the proposed site. The tower would provide no additional coverage to the coverage objective area. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

- Tower No. 9: Verizon 160' tower located at 159 Bartholomew Road
  Proposed coverage from this location at an ACL of 150' is shown in **Exhibit Q**. The site is located well outside of the Search Ring approximately 5.2 miles west of the proposed site. The tower would provide no additional coverage to the coverage objective area. Given the signal propagation limitations posed by Blue Wireless' PCS frequency, this site is incapable of meeting Blue Wireless' coverage objective of providing reliable in-building and in-vehicle coverage to the coverage objective area in order to fill the coverage gap.

New Tower Sites

- Mega Tool, 1023 Caton Avenue:
  The property is located south of the Search Ring within the Industrial district. Blue Wireless' site acquisition representative visited the property, spoke with the owner, and left contact information concerning potential future lease agreement discussions. However, the owner never expressed any interest in the project. The property was therefore rejected.

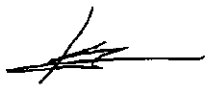
- Chapel Lumber, 1041 Caton Avenue:
  The property is located south of the Search Ring in the Industrial district. Blue Wireless' site acquisition representative visited the property, spoke with the owner, and left contact information concerning potential future lease agreement discussions. A subsequent phone message left with the owner was never returned. The owner never expressed any interest in the project, and the property was therefore rejected.

- Elmira Heat Treating, 407 South Kinyon Street:

The property is located within the Search Ring in the Industrial district. Blue Wireless' site acquisition representative visited the property and spoke with owner, but the owner was not interested in negotiating a lease due to an expansion project being considered or pursued for the property. The property was therefore rejected.

5. Conclusion

Based on an evaluation of Blue Wireless' existing network and service objectives within the coverage objective area, as well as the existing structures, properties, and terrain in the vicinity of the Search Ring, it was determined that the proposed new tower Site will allow Blue Wireless the best opportunity to remedy its existing service deficiencies. Blue Wireless will collocate its antennas at a height of 160' on the proposed tower to provide reliable 4G LTE in-building and in-vehicle service to the coverage objective area pursuant to its FCC license. The proposed facility will be designed to accommodate additional carriers.



Eric Wong, Blue Wireless Network Director

Date: October 3, 2019

EXHIBIT A

CELLULAR NETWORK SITE SPACING

Cellular Network Site Spacing

Blue Wireless

Blue Wireless is a regional wireless operator providing voice and data service to customers in Western NY, as well as the Twin Tiers region of NY/PA. Blue operates in the 1900 MHz range of the PCS (Personal Communications Service) band, and is currently undertaking a network expansion and upgrade project throughout its coverage area.

Since the introduction of smart phones, wireless operators have seen significant growth in mobile data traffic, with a forecast growth rate of 394% from 2016 to 2020. Figure 1 below shows statistics data from www.statista.com.

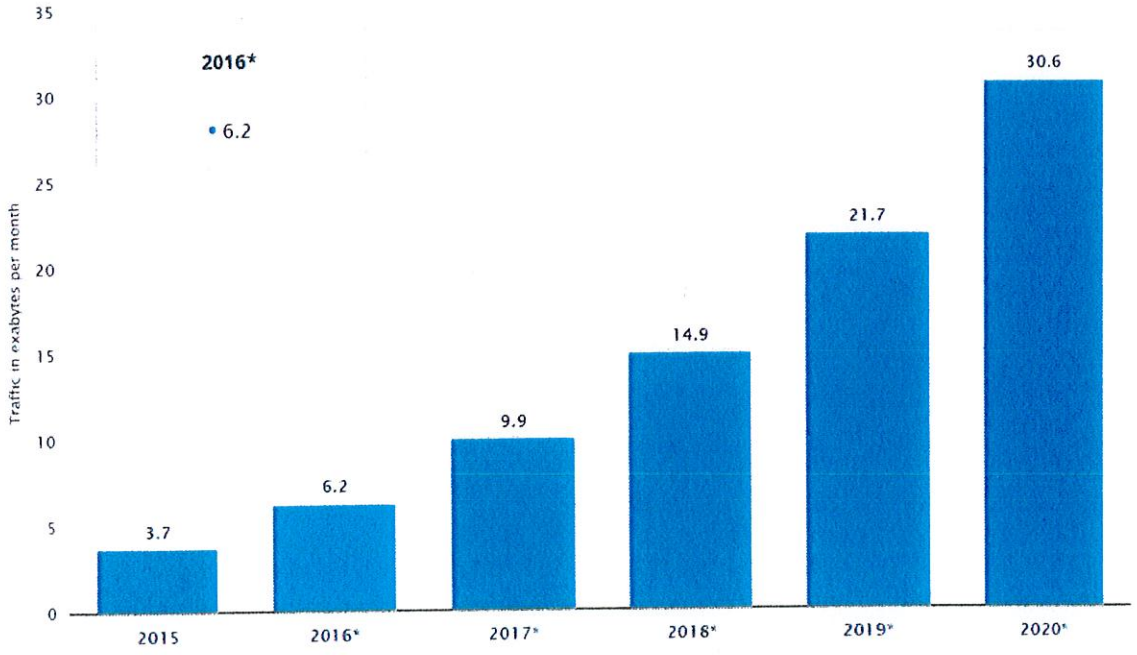


Figure: 1 Mobile data growth

By contrast, mobile voice traffic has been growing at a much lower rate compared to mobile data traffic. Because of this paradigm shift, it is important for wireless operators to understand the differences between voice and data characteristics and network design in their efforts to meet the projected growth.

Recently, the Federal Communication Commission (FCC) announced that it is planning to make more spectrum available to wireless providers to support such high mobile data traffic growth. In an article published by Rysavy Research, LLC, entitled, '*Mobile Broadband Spectrum and its Impacts for U.S. Consumers and the Economy*', it is suggested that, in order to support such high mobile data traffic, more cell sites will be needed, and more spectrum should be made available to wireless operators.

Characteristic differences between voice and data

When wireless operators first deployed their networks, they were primarily concerned with transmitting voice calls and SMS (short message service) 'text' messages. This initial design of cell sites, deployed by wireless operators whose focus was mainly voice services, employed cells that were built much further apart.

With the introduction of iPhone and Android smart phones, network design engineers have had to consider the characteristic differences between a voice and a data call. Voice only calls can operate in a much lower signal level environment, since the bandwidth requirement is much lower compared to data calls. Today, most voice calls occupy only 8 kbps of bandwidth. A very weak signal level can still support such a low bandwidth requirement. Even at the cell's edge, where the signal level is very weak, voice calls can still maintain good call quality and provide an acceptable user experience. Therefore, cell site spacing can be much further apart when it comes to supporting voice calls.

In addition, voice calls occupy a fixed bandwidth (8kbps), so the capacity is more static. As the number of users increase, bandwidth requirement for an individual voice call doesn't change.

The impact on cell site capacity is much lower as the number of users increase. That means each cell site can support a greater number of users as compared to data users.

However, the demands of wireless data are quite different. Data usage is much more bandwidth-intensive compared to voice calls. Video streaming is a good example; higher video resolutions require a much higher bandwidth capacity in order to avoid buffering and to maintain an acceptable user experience. Below are Netflix's recommended internet connection speeds to support different video qualities:

- **0.5 Megabits per second –Required broadband connection speed**
- **1.5 Megabits per second - Recommended broadband connection speed**
- **3.0 Megabits per second - Recommended for SD quality**
- **5.0 Megabits per second - Recommended for HD quality**
- **25 Megabits per second - Recommended for Ultra HD quality**

As can be seen, the higher the video quality, the higher the bandwidth requirement.

Also, the bandwidth requirement for each data user can be more dynamic compared to a voice user. Data streaming activities have different bandwidth demands, from checking email to surfing the web to streaming music or video. Since all data users connected to a cell site are sharing the same resource, the bandwidth capacity can be exhausted very quickly with fewer users, as compared to voice users. Therefore, the cell site coverage footprint needs to be more localized (smaller), to minimize the number of users sharing and competing for the same bandwidth at each cell site.

In the recent years, wireless carriers have focused on small cell technology, where each cell site has a much lower power output to produce a much smaller coverage footprint. The purpose of the small cell is to improve capacity and performance for data network by limiting the amount of users sharing and competing for the same resources. It is a similar concept to a typical home WIFI system, which can only support a limited number of users before exhibiting a noticable

performance degradation. This is another reason why cell site spacing for a wireless data network is smaller, compared to the legacy voice network.

Low band vs. High Band

Radio Frequency propagation between low band and high band is very different as well. Low band frequency (cellular band 850 MHz) can travel over the air and penetrate walls and obstacles much better compared to high band frequency (PCS 1900 MHz and AWS 2100 MHz). This is the reason why low band frequency is often referred as 'beach-front property' or 'premium frequency band'. The primary advantage of the lower frequency band is its propagation characteristics; it can propagate further in different environments. Lower frequencies require less energy to maintain a signal level than higher frequencies, and can therefore provide a much more stable signal level over a larger area than higher frequencies can. Wireless operators transmitting in these low frequency bands can deploy sites which are much further apart compared to wireless operators who operate in the high frequency bands.

Figure 2 below shows the in-building penetration loss in different frequency ranges.

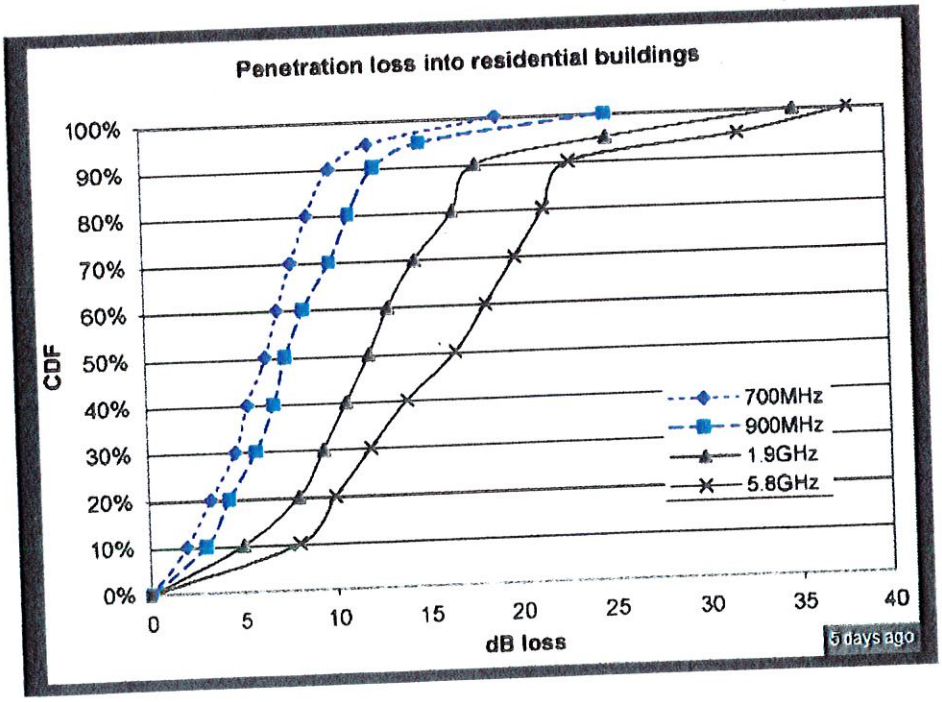


Figure 2: In-building loss in different frequency ranges

Operators who own multiple frequency bands typically use the low frequency band as an "underlay" network (network that is built for coverage because of the low band frequency propagation advantage characteristics.) The higher frequency bands are used to supplement the performance and capacity of the network. Unfortunately, wireless carriers like Blue, who only operate in a single frequency band, do not have the same luxury.

In order to provide a consistent and acceptable user experience, high frequency band operators need to space their cell sites much closer together compared to lower frequency band operators. Blue Wireless operates only in the PCS 1900 MHz frequency. In a study conducted by Microcell Telecommunications Inc., where 850 MHz and 1900 MHz bands were compared based on a live network deployment, it was found that wireless operators who operate in 1900 MHz will need to deploy twice the number of cell sites compared to wireless operators who transmit in the 850 MHz frequency band.

Summary

Cell site spacing is highly dependent upon the types of services the operator provides and frequency band in which it operates. High band frequency operators, similar to Blue Wireless, will have to design cells in much closer proximity to each other in order to increase in-building coverage. Additionally, in order to meet the high bandwidth requirement for data calls, wireless operators need to minimize the cell site coverage footprint and utilize small cell technology to support current dynamic bandwidth requirements.

EXHIBIT B

ANALYSIS OF THE COVERAGE DIFFERENCES BETWEEN THE CELLULAR (850 MHZ) AND PCS (1900 MHZ) BANDS By Yves R. Hamel and Associates, Inc dated March 13, 2003

Analysis of the Coverage Differences Between The Cellular (850 MHz) and PCS (1900 MHz) Bands, Including a Sample Deployment Study of Highway 401 and Kingston, Ontario

By: Yves R. Hamel et Associés Inc.

March 13, 2003

Analysis of the Coverage Differences Between The Cellular (850 MHz) and PCS (1900 MHz) Bands, Including a Sample Deployment Study of Highway 401 and Kingston, Ontario

(Version 1.1)

Prepared for

Microcell Telecommunications Inc.

By

Yves R. Hamel et Associés Inc.
Broadcast and Telecommunication Consultants
424, Guy Street, Suite 102
Montreal, Québec
Canada, H3J 1S6

Analysis of the Coverage Differences Between
The Cellular (850 MHz) and PCS (1900 MHz) Bands,
Including a Sample Deployment Study of
Highway 401 and Kingston, Ontario
(Version 1.1)

Prepared by:

Joseph Sadoun, Eng.
Yves R. Hamel et Associés inc.

TABLE OF CONTENTS

1. Executive Summary

Microcell Telecommunications Inc. mandated Yves R. Hamel et Associés inc., Broadcast and Telecommunication Consultants to perform an analysis of the coverage differences between the Cellular (850 MHz) band and the PCS (1900 MHz) band.

The analysis begins with a review of the scientific literature on the subject of the differing radio propagation characteristics in the two bands. Differing characteristics in relation to free space loss, diffraction losses and absorption losses are examined. Empirical studies confirming the existence of these propagation differentials in real world environments are also cited.

It is shown that the difference in received signal strength indicator (RSSI) favouring the Cellular band is on the order of 4 dB in theory, and can be as large as 7.9 dB in practice. Such a differential translates into a requirement for a more intensive deployment of antenna infrastructure in a PCS environment than in a Cellular environment.

To concretize the impact of this differential on real world network infrastructure requirements, the analysis then proceeds to undertake a sample greenfield deployment study for each of the two spectrum bands. The region selected for this comparative study is Highway 401 between Oshawa, Ontario and the Quebec border (corridor coverage), including the city of Kingston, Ontario (urban coverage).

To ensure consistency of results across the two bands, it is assumed that Global System for Mobile (GSM) infrastructure is being deployed in both bands. The coverage objectives for the two bands are those generally accepted by the Cellular and PCS Industry for GSM 850 MHz and GSM 1900 MHz systems respectively. The emission parameters for each band are taken from prevailing Industry Canada Standard Radio System Plans (SRSPs). The operational characteristics of the GSM base stations and mobiles are based on European Telecommunications Standards Institute (ETSI) specifications and requirements. Finally, the propagation tool used for the coverage calculation in both bands is the Marconi dBPlanner 2.1 software using the Predict 2.0 model.

The results of this comparative deployment study confirm the expectations that emerged from the scientific literature review. Specifically:

- the average signal strength difference along the selected portion of Highway 401 is 5.1 dB favouring the 850 MHz band;
- the GSM 1900 network would require an average of 1.3 times more sites than its GSM 850 counterpart to ensure seamless coverage along the selected portion of Highway 401;
- in areas of greater variation in terrain elevation, the average signal strength difference increases to 6.0 dB in favour of the 850 MHz band, suggesting that the site multiple for GSM 1900 deployment would be even greater than 1.3;
- the GSM 1900 network would require an average of 1.5 times more sites than its GSM 850 counterpart to ensure seamless coverage across the city of Kingston.

It can also be shown that for coverage areas of greater dimension than the city of Kingston, the number of sites that would be required to offer a seamless GSM 1900 coverage could be greater than 1.5 times as determined in this study. In fact, it can be demonstrated that in theory it could reach 2.0 times as many sites than what would be required for a seamless GSM 850 coverage. This is true because as the dimension of the coverage area increases, the relative importance of the peripheral sites to interior sites decreases. In fact, an analysis of the coverage from a single interior site within the city of Kingston, shows that the GSM 850 MHz coverage area is 1.87 times greater than the area covered by the same GSM 1900 site for a service threshold of -76 dBm for both technologies.

Hence, for two equivalent GSM networks operating in two different bands, the GSM 1900 network will require significantly more cell site equipment and infrastructure than its GSM 850 counterpart. This additional investment requirement for the 1900 MHz band not only increases network expense, but also complicates the network implementation process and lengthens the delays of achieving a network that can offer seamless coverage according to the state of the art standards.

2. Theoretical and Empirical Comparison of Propagation Characteristics in the Cellular and PCS Bands

This section of the report provides a review of the scientific literature on the subject of the differing radio propagation characteristics in the Cellular (850 MHz) and PCS (1900 MHz) bands. Differing characteristics in relation to free space loss, diffraction losses and absorption losses are examined. Empirical studies confirming the existence of these propagation differentials in real world environments are also cited.

2.1 Free Space Loss

According to the literature on the subject of propagation, it can be shown that two systems operating with the same base station infrastructure and at the same transmit power will have a difference in their received signal strength indicator (RSSI) at the same reception location based on their carrier frequencies. As shown in equation (1) below, the free space loss (FSL) in dB is a function of the transmit frequency squared (Fc^2) and of the distance squared (D^2):

$$FSL = 32.4 + 10*LOG(Fc^2) + 20*LOG(D^2) \quad (1)$$

Hence for the same distance, the FSL difference in dB between a system operating at 850 MHz and a system operating at 1900 MHz is:

$$\Delta FSL = 10*LOG((1900/850)^2) \approx 7 \text{ dB} \quad (2)$$

This higher free space loss for systems operating at 1900 MHz is partially, yet not completely, offset by technical standards that permit a slightly higher radiated power for systems operating in this band. For example, table 2.1 on the next page provides the difference between GSM 850 systems and GSM 1900 systems with respect to their allowed effective isotropic radiated power (EIRP) according to Industry Canada's Standard Radio System Plans (SRSPs) 503 and 510 respectively [10], [11].

Table 2.1 - Maximum Allowed EIRP of GSM 850 and GSM 1900 Systems

System	EIRP (watts)	EIRP (dBm)
GSM 850	822	59.15
GSM 1900	1640	62.15
	ΔEIRP	3 dB

Subtracting this 3 dB EIRP difference from the 7 dB RSSI difference derived in equation 2 shows that the RSSI advantage in favour of the 850 MHz band is now 4 dB. Hence, the propagation in the 1900 MHz band needs to overcome a difference of 4 dB to equal the received signal level for the 850 MHz band for the downlink side of the communication path.

This means that the required signal level thresholds, which are typically the same for both bands, will be harder to achieve for a 1900 MHz signal than for a 850 MHz signal.

2.2 Diffraction and Absorption Losses

Beyond the free space loss disadvantage just described, a 1900 MHz signal is also subject to greater diffraction and absorption losses than a 850 MHz signal. Hence, the RSSI difference between the two bands will in practice exceed the 4 dB difference derived in section 2.1 [1].

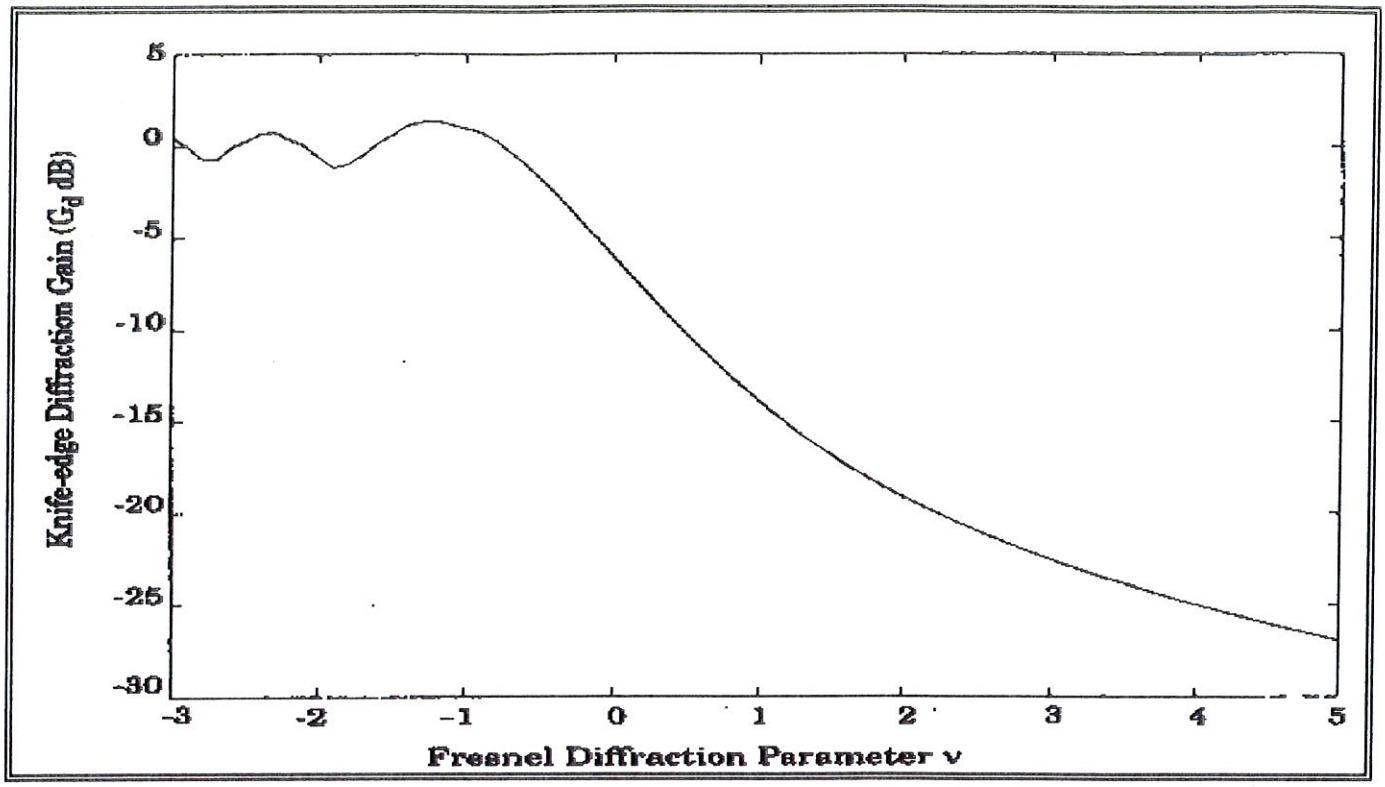
To see why, one needs to consider the basic principles of radio propagation as stated by Fresnel and Huygen. The Fresnel equation is a function of the wavelength of a signal amongst other parameters. The Fresnel-Kirchoff diffraction parameter is obtained by equation 3 below:

$$\nu = h\sqrt{\frac{2(d1+d2)}{(d1d2)\lambda}} \quad (3)$$

where d1 and d2 are distances from a knife-edge obstacle and h is the obstacle height.

For a given diffraction parameter ν, a knife-edge diffraction gain can be obtained from the graph presented in figure 1. Since the diffraction parameter is inversely proportional to the wavelength, which itself is inversely proportional to the frequency, an increase in frequency will increase the diffraction parameter. Looking at the graph in figure 1, as the diffraction parameter increases, the knife-edge diffraction gain diminishes.

Figure 1 - Knife-edge Diffraction Gain



Calculation of diffraction losses of complex and irregular shapes is mathematically difficult and, in practice, prediction for diffraction loss is a process of theoretical approximation modified by empirical corrections. These losses are particularly significant in urban environments, where there are numerous sources for knife-edge diffraction.

Jakes and Reudink [2] tabulated empirical measurements of mobile radio propagation loss using data taken in northern New Jersey and New York City suburbs. The results reveal propagation loss to be a function of the transmit frequency to the exponent 2.6 ($Fc^{2.6}$). This means that the actual path loss difference between the Cellular and PCS bands can be as high as 6.0 dB, as shown in equation 5 below:

$$\Delta FSL = 10*Log((Fc_1/ Fc_2)^{2.6}) - \Delta EIRP \quad (4)$$

$$\Delta FSL = 10*Log((1900/850)^{2.6}) - 3.0 = 6.0 \text{ dB} \quad (5)$$

It should be noted that the results of Jakes and Reudink have been corroborated by the extensive measured data of Okumura [3] in and around Tokyo. This data has been summarised by Hata in an empirical formula for propagation loss [5].

High tree density is also a factor in increasing the path loss difference between the Cellular and the PCS bands. In fact, measurements in Stockholm suburban areas with an abundance of trees showed propagation loss to be a function of the transmit frequency to the exponent 3.1 ($Fc^{3.1}$) [4], [6], [7]. This increases the actual path loss difference between the Cellular and PCS bands to as high as 7.9 dB, as shown in equation 7 below:

$$\Delta FSL = 10 * Log((Fc_1 / Fc_2)^{3.1}) - \Delta EIRP \quad (6)$$

$$\Delta FSL = 10 * Log((1900/850)^{3.1}) - 3.0 = 7.9 \text{ dB} \quad (7)$$

The losses expected due to radio energy being absorbed by the moisture content of the vegetation at different frequencies have also been estimated by the International Telecommunication Union (ITU) [8] and are presented in table 2.2. These values reflect a trend of increasing losses with increasing frequency that corroborates well with equation 6 above.

Table 2.2 - Typical Absorption Loss as a Function of Frequency

	Absorption Loss		
	902 MHz	**2400 MHz**	**5800 MHz**
150 feet of vegetation	9 dB	25 dB	60 dB

2.3 Summary

To summarize this section of the report, the theory of radio propagation informs us that free space losses, diffraction losses and absorption losses are all expected to increase with frequency, and hence to be more pronounced in the PCS (1900 MHz) band than in the Cellular (850 MHz) band. These theoretical predictions have been confirmed by empirical studies in a variety of real world environments.

Generally speaking, this propagation differential between the Cellular and PCS bands translates into a requirement for a more intensive deployment of antenna infrastructure in a PCS environment than in a Cellular environment.

The following sections of this report will attempt to quantify the number of antenna sites that would be required to overcome the path loss difference between the two bands. A greenfield network deployment along Highway 401 between Oshawa, Ontario and the Quebec border (corridor coverage), including the city of Kingston, Ontario (urban coverage), will be the focus of this comparative study.

To ensure consistency of results across the two bands, it will be assumed that Global System for Mobile (GSM) infrastructure is being deployed in both bands.

Section 3 will describe in detail the industry standard specifications adopted for use in each of the two bands.

Section 4 will describe in detail the design methodology and parameters employed for the study, all of which are applied equally and consistently across the two bands.

Sections 5 through 7 will present the results of the study.

3. Industry Standard Specifications for GSM Deployment in the Cellular and PCS Bands

In order to establish the design parameters necessary to obtain an adequate seamless coverage within different types of environments (Highway, Rural, Suburban, Urban and Dense Urban), a detailed specification list for the GSM base stations and mobile terminals for both the Cellular and PCS bands needs to be presented. With these parameters, link budgets can be calculated in order to estimate the required thresholds and typical cell ranges that can be expected for a particular reliability percentage.

3.1 Equipment Specifications

The specifications presented in this section are taken from European Telecommunications Standards Institute (ETSI) standard document EN 300 910 8.5.0 (2000-07) [9]. Table 3.1 below gives the list of these specifications for the GSM base stations and mobile terminals for the Cellular and PCS bands.

Table 3.1 - Equipment Specifications

Specification	GSM 850	GSM 1900
Mobile Terminal Transmitter		
Output Power	+29.0 dBm	+30 dBm
Transmit Antenna Gain	0 dB	0 dB
Mobile Terminal Receiver		
Receive Sensitivity	-102 dBm	-104 dBm
Receive Noise Figure	8 dB	8 dB
Receive Antenna Gain	0 dB	0 dB
Base Station Transmitter		
Output Power	+50 dBm	+50 dBm
Transmit Antenna Gain 30° 45° 65°	 NA 15.15 dBi* 14.15 dBi	 22 dBi NA 16 dBi
Base Station Receiver		
Diversity Gain	3 dB	3 dB
Receive Noise Figure	< 7 dB 4.8 dB Typical	< 7 dB 4.8 dB Typical
Receive Sensitivity	-110.0 dBm	-110.0 dBm
Receive Antenna Gain 30 45 65	 NA 15.15 dBi 14.15 dBi	 22 dBi NA 16 dBi
Feeder		
Type	LDF7-50A	LDF7-50A
dB Loss/100m	2.52 dB	4.03 dB

* Industry standards give dBd values for antenna gains in the Cellular band but for the present analysis, the dBd values have been adjusted to dBi values.

The maximum EIRPs proposed for each system are taken from the SRSP 503 and SRSP 510 documents published by Industry Canada [10],[11]. Table 3.2 gives the EIRPs for each system in corridor and urban environments.

Table 3.2 - EIRP Values

Environment	GSM 850 (EIRP)	GSM 1900 (EIRP)
Rural or Corridor	59.15 dBm	62.15 dBm
Urban or Suburban[1]	52.15 dBm	56.0 dBm

[1] The Urban values are generally accepted power levels used in the industry for urban base stations.

The heights chosen for the base station sites are realistic typical values used by Cellular and PCS network designers in the industry. Depending on the type of environment the base station is located in, the antenna height is set to the values in table 3.3 below. The antenna heights are the same for both the Cellular and PCS bands for the same environment or location.

Table 3.3 - Typical Antenna Heights

Environment	Antenna Height (m)
Urban	32
Suburban	42
Rural	90
Corridor	90

Using the above information, a comprehensive link budget can be established. The section that follows presents the link budget for the GSM 850 and the GSM 1900 systems.

3.2 Link Budgets

The link budget is necessary to determine which of the Uplink or the Downlink side of the communication path is the most critical. Once the critical path is determined, the cell radius and the best receive signal thresholds can be calculated for a given reliability percentage.

The calculated cell radius for a 90% reliability is evaluated using a combination of two different propagation prediction models: COST-231 and Hata [5]. The 90 % reliability across the territory is the accepted reliability level used by the Cellular and PCS industry for a receiver positioned at 1.5m above ground level. Table 3.4 and 3.5 presented in the following pages give the calculated values for the GSM 850 and the GSM 1900 systems respectively.

Table 3.4 - GSM 850 Link Budget

GSM850	Units	Urban		Suburban		Corridor	
		Downlink	Uplink	Downlink	Uplink	Downlink	Uplink
P_{out} antenna port	dBm	NA	29	NA	29	NA	29
EIRP	dBm	52.15	29	52.15	29	59.15	29
Antenna Gain	dBi		14		14		15
Diversity receive	dB		3		3		3
Feeder cable	dB		-2.0		-2.3		-3.3
Rx Sensitivity*	dBm	-102	-110.0	-102	-110.0	-102	-110.0
Path Loss Margin	**dB**	**154.15**	**154.0**	**154.15**	**153.7**	**161.15**	**153.7**
Weakest Link			X		X		X
Link Parameters							
Body Loss	dB	3		3		3	
Path Loss for Dimensioning	dB	151		150.7		150.7	
Cell Range for 90% Reliability	km	1.1		3.5		16.2	
Cost-231 - Hata Path loss to the Desired Cell Range	dB	124.0		129.2		136.6	
Penetration Margin	dB	151-124 = 27.0		150.7-129.2 = 21.5		150.7-136.6 = 14.1	
RSSI for Balance Path Threshold	dBm	-102 + 27.0 = **-75**		-102 + 21.5 =**-80.5**		-102+ 14.1 =**-87.9**	

* ETSI Standard

Table 3.5 - GSM 1900 Link Budget

GSM 1900	Units	Urban		Suburban		Corridor	
		Downlink	Uplink	Downlink	Uplink	Downlink	Uplink
P_{out} antenna port	dBm	NA	30	NA	30	NA	30
EIRP	dBm	56.0	30	56	30	62.15	30
Antenna Gain dBi	dBi		16		16		22
Diversity receive	dB		3		3		3
Feeder cable	dB		-2.7		-3.1		-5.0
Rx Sensitivity*	dBm	-104	-110.0	-104	-110.0	-104	-110.0
Path Loss	**dB**	**160.0**	**156.3**	**160.0**	**155.9**	**166.15**	**157.0**
Weakest Link			X		X		X
Link Parameters							
Body Loss (dB)	dB	3		3		3	
Path Loss for Dimensioning	dB	153.3		152.9		154.0	
Cell Range for 90% Reliability (km)	km	0.53		1.53		10.6	
Cost-231 - Hata Pathloss to the Desired Cell Range	dB	124.4		130.7		136.1	
Penetration Margin	dB	153.3-124.4 = 28.9		152.9-130.7 = 22.2		154.0-136.1 = 17.9	
RSSI for Balance Path Threshold	dBm	-104 + 28.9 =**-75.1**		-104 + 22.2 =**-81.8**		-104 + 17.9 =**-86.1**	

The values calculated in the link budgets of tables 3.4 and 3.5 for the Cellular and PCS bands respectively are obtained for particular cell edge reliability. The reliability is a function of the penetration margin, the quality of service and generally accepted typical penetration losses and fading standard deviations. From the cell range, a path loss to the cell edge can be calculated with accepted models within the wireless communication industry. In the link budgets presented here, a combination of COST-231 and Hata models were used. These models assign typical parameters to each environment (urban, suburban or corridor). From the addition of the mobile receive sensitivity and the required penetration margin, RSSI thresholds are obtained. These thresholds are finally used as the design requirements of the wireless telecommunication network.

These link budgets provide the best RSSI level that would be required at the cell edge to obtain a reliability of 90% at all locations. Alternatively, these thresholds can be obtained using accepted in-building and in-car penetration losses. Tables 3.6 and 3.7 show the threshold values that are generally accepted in the Cellular and PCS industry for this purpose. They are determined from the RX sensitivity of the mobile terminal, the mean penetrating losses and the mean fading losses at the particular frequency. An extra 1 dB is added to the losses to compensate for any unaccounted phenomena.

* ETSI standard

Table 3.6 - RSSI Thresholds - GSM 850

Environment	**RX sensitivity (dBm)**	**Typical Penetration / Fading Losses**	**Design RSSI Threshold**
Urban	-102	15 dB / 10 dB (1 dB safety)	-102+15+10+1 = -76 dBm
Suburban	-102	10 dB / 10 dB (1 dB safety)	-102+10+10+1 =-81 dBm
Corridor	-102	7 dB / 10 dB (1 dB safety)	-102+7+10+1 = -86 dBm

Table 3.7 - RSSI Thresholds - GSM 1900

Environment	**RX sensitivity (dBm)**	**Typical Penetration / Fading Losses [12]**	**Design RSSI Threshold**
Urban	-104	15 dB / 12 dB (1 dB safety)	-104+15+12+1 = -76 dBm
Suburban	-104	10 dB / 12 dB (1 dB safety)	-104+10+12+1 =-81 dBm
Corridor	-104	7 dB / 12 dB (1 dB safety)	-104+7+12+1 = -86 dBm

From tables 3.4 through 3.7, it can be seen that the two approaches for deriving the design RSSI thresholds produce highly consistent results for each of the Cellular and PCS bands. Hence, to achieve a reliability of 90% at the cell edge for a determined cell range, the RSSI thresholds in table 3.7 will be the accepted design objectives that will dictate the number of sites required for both bands.

The section that follows describes the network design methodology and parameters that will later be used to achieve seamless coverage in each band with the least amount of sites.

4. Network Design Methodology and Parameters

The methodology described in this section should enable an RF designer using dBPlanner 2.1, Predict 2.0 and 90m resolution DEM and Clutter databases to achieve the same propagation results as the ones presented in this document. A detailed characterisation of the propagation model and the clutter properties are given here. The antenna heights and antenna models are also explained.

4.1 dB Planner Parameters

There are different parameters that need to be set for dBPlanner to provide realistic coverage predictions. The DEM and Clutter files have a 90m resolution and represent the 1:250000 tiles 30M, 31B, 31D, 31G and 31H. The Clutter files are subdivided into 11 distinct clutters. The parameters for each clutter are presented in table 4.1 below.

The propagation model used is Predict 2.0. This propagation model is based on the CRC predict propagation model used by Industry Canada. The reliabilities for time and location are set to 50% and 90% respectively. The receiver height is set to 1.5m and the polarisation is vertical. The frequencies used for GSM 850 and GSM 1900 are 850 MHz and 1900 MHz respectively.

Table 4.1 Clutter Parameters

	Relative Permeability	Conductivity (S/m)	Rms Roughness (m)	Average Obstacle Height (m)	Distance to Clearing (m)	Absorption Height Limit (m)	Local Absorption Power Loss (dB)
Unknown	15	0.006	2	0	50	10	0
Forest	15	0.005	3	7	50	10	6
Bare Ground	15	0.006	2	0	50	10	14
Fresh Water	80	0.017	0.3	0	50	10	0
Suburban	15	0.006	5	7	50	10	8
Marsh	30	0.04	3	5	50	10	6
Sea	70	5	1	0	50	10	0
Urban	7	3	0.0001	15	40	50	10

These values are typical clutter parameters and are not optimised for the targeted coverage area. The parameters were obtained by a representative of Marconi, supplier of the dBPlanner software, for a frequency of 1 GHz. These parameters should be generally applicable for the 850 MHz and the 1900 MHz bands.

Table 4.2 below gives the antenna models chosen for the different bands.

Table 4.2 - Antenna Models

Environment	GSM850	GSM1900
Urban and Suburban	65° Tiltek TA-803C-65	62° Tiltek TA-1806-16-62
Corridor	45° Tiltek TA-803C-45	33° Tiltek TA-1806-16-33

4.2 Site Parameters

The first site chosen for the coverage analysis is Microcell's existing Côteau-du-Lac, Quebec site located at the following co-ordinates: -74.18° W and 45.3° N. Starting from that known location and coverage, the following sites are chosen so that the -86 dBm service contours overlap to offer seamless corridor coverage along Highway 401. Within the city of Kingston, Ontario, the site locations are chosen so that the -81 dBm and -76 dBm service contours offer seamless urban coverage.

The antenna heights chosen for each site are dependent on the clutter of the area to be covered and follow the values given in table 3.3 on page 10. Furthermore, the locations with the highest elevation above sea level within a 1 km corridor centred on Highway 401 were chosen. The lists of sites chosen for each analysis are given in the following sections.

5. GSM 850 Seamless Coverage Design

Table 5.1 lists all the sites used in the design of the GSM 850 seamless Highway 401 corridor coverage and Kingston urban/suburban coverage. Appendix A provides the coverage maps for the GSM 850 proposed network. A total of 28 sites were necessary to provide proper coverage to the specified area. A total of 20 sites were identified for the Highway 401 coverage and 8 sites were required for the Kingston coverage.

Table 5.1 - GSM 850 Proposed Sites

SITE_ID	SECTOR	AGL (m)	ANTENNA	EIRP (dBm)	AZIMUTH (°)	LONG NAD83	LAT NAD83
YRH MTL220 COR	1	55	TA-803C-65-T0	59.15	57	-74° 11' 19"	45° 17' 56"
YRH MTL220 COR	2	55	TA-803C-65-T0	59.15	133		
YRH MTL220 COR	3	55	TA-803C-65-T0	59.15	230		
YRH BS02 COR	1	90	TA-803C-45-T0	59.15	58	-74° 23' 2"	45° 11' 40"
YRH BS02 COR	2	90	TA-803C-45-T0	59.15	238		
YRH BS03 COR	1	90	TA-803C-45-T0	59.15	56	-74° 37' 9"	45° 4' 36"
YRH BS03 COR	2	90	TA-803C-45-T0	59.15	257		
YRH BS04 COR	1	90	TA-803C-45-T0	59.15	89	-74° 53' 7"	45° 3' 22"
YRH BS04 COR	2	90	TA-803C-45-T0	59.15	241		
YRH BS05 COR	1	90	TA-803C-45-T0	59.15	58	-75° 7' 34"	44° 57' 6"
YRH BS05 COR	2	90	TA-803C-45-T0	59.15	235		
YRH BS06 COR	1	90	TA-803C-45-T0	59.15	55	-75° 21' 36"	44° 50' 30"
YRH BS06 COR	2	90	TA-803C-45-T0	59.15	230		
YRH BS07 COR	1	90	TA-803C-45-T0	59.15	45	-75° 33' 42"	44° 42' 7"
YRH BS07 COR	2	90	TA-803C-45-T0	59.15	222		
YRH BS08 COR	1	90	TA-803C-45-T0	59.15	45	-75° 42' 47"	44° 35' 19"
YRH BS08 COR	2	90	TA-803C-45-T0	59.15	220		
YRH BS09 COR	1	90	TA-803C-45-T0	59.15	40	-75° 53' 48"	44° 26' 57"
YRH BS09 COR	2	90	TA-803C-45-T0	59.15	218		
YRH BS10 COR	1	90	TA-803C-45-T0	59.15	74	-76° 4' 37"	44° 21' 50"
YRH BS10 COR	2	90	TA-803C-45-T0	59.15	254		
YRH BS11 COR	1	90	TA-803C-45-T0	59.15	81	-76° 17' 22"	44° 19' 45"
YRH BS11 COR	2	90	TA-803C-45-T0	59.15	252		
YRH BS12 COR	1	90	TA-803C-45-T0	59.15	62	-76° 30' 15"	44° 16' 19"
YRH BS12 COR	2	90	TA-803C-45-T0	59.15	282		
YRH BS13 COR	1	90	TA-803C-45-T0	59.15	86	-76° 45' 29"	44° 16' 55"
YRH BS13 COR	2	90	TA-803C-45-T0	59.15	265		
YRH BS14 COR	1	90	TA-803C-45-T0	59.15	78	-77° 2' 32"	44° 14' 57"
YRH BS14 COR	2	90	TA-803C-45-T0	59.15	258		
YRH BS15 COR	1	90	TA-803C-45-T0	59.15	85	-77° 16' 18"	44° 13' 27"
YRH BS15 COR	2	90	TA-803C-45-T0	59.15	250		
YRH BS16 COR	1	90	TA-803C-45-T0	59.15	71	-77° 29' 36"	44° 10' 18"
YRH BS16 COR	2	90	TA-803C-45-T0	59.15	239		

Table 5.1 - GSM 850 Proposed Sites (continued)

SITE_ID	SECTOR	AGL (m)	ANTENNA	EIRP (dBm)	AZIMUTH (°)	LONG NAD83	LAT NAD83
YRH BS17 COR	1	90	TA-803C-45-T0	59.15	68	-77° 41' 55"	44° 5' 59"
YRH BS17 COR	2	90	TA-803C-45-T0	59.15	240		
YRH BS18 COR	1	90	TA-803C-45-T0	59.15	71	-77° 54' 24"	44° 1' 33"
YRH BS18 COR	2	90	TA-803C-45-T0	59.15	247		
YRH BS19 COR	1	90	TA-803C-45-T0	59.15	102	-78° 6' 45"	44° 0' 35"
YRH BS19 COR	2	90	TA-803C-45-T0	59.15	252		
YRH BS20 COR	1	90	TA-803C-45-T0	59.15	76	-78° 25' 49"	43° 56' 44"
YRH BS20 COR	2	90	TA-803C-45-T0	59.15	252		
YRH BS21 URB	1	42	TA-803C-65-T0	52.15	0	-76° 30' 38"	44° 14' 40"
YRH BS21 URB	2	42	TA-803C-65-T0	52.15	120		
YRH BS21 URB	3	42	TA-803C-65-T0	52.15	240		
YRH BS22 URB	1	32	TA-803C-65-T0	52.15	0	-76° 29' 38"	44° 13' 39"
YRH BS22 URB	2	32	TA-803C-65-T0	52.15	120		
YRH BS22 URB	3	32	TA-803C-65-T0	52.15	240		
YRH BS23 URB	1	32	TA-803C-65-T0	52.15	0	-76° 31' 34"	44° 13' 15"
YRH BS23 URB	2	32	TA-803C-65-T0	52.15	240		
YRH BS23 URB	3	32	TA-803C-65-T0	52.15	120		
YRH BS24 SUB	1	42	TA-803C-65-T0	52.15	0	-76° 29' 10"	44° 15' 24"
YRH BS24 SUB	2	42	TA-803C-65-T0	52.15	120		
YRH BS24 SUB	3	42	TA-803C-65-T0	52.15	240		
YRH BS25 SUB	1	42	TA-803C-65-T0	52.15	0	-76° 26' 26"	44° 14' 38"
YRH BS25 SUB	2	42	TA-803C-65-T0	52.15	120		
YRH BS25 SUB	3	42	TA-803C-65-T0	52.15	240		
YRH BS26 SUB	1	42	TA-803C-65-T0	52.15	60	-76° 34' 59"	44° 15' 38"
YRH BS26 SUB	2	42	TA-803C-65-T0	52.15	180		
YRH BS26 SUB	3	42	TA-803C-65-T0	52.15	300		
YRH BS27 URB	1	32	TA-803C-65-T0	52.15	0	-76° 36' 3"	44° 14' 37"
YRH BS27 URB	2	32	TA-803C-65-T0	52.15	120		
YRH BS27 URB	3	32	TA-803C-65-T0	52.15	240		
YRH BS28 URB	1	32	TA-803C-65-T0	52.15	15	-76° 39' 1"	44° 13' 40"
YRH BS28 URB	2	32	TA-803C-65-T0	52.15	135		
YRH BS28 URB	3	32	TA-803C-65-T0	52.15	255		

The average distance between two corridor sites for the GSM 850 system design presented in Appendix A is approximately 18 km. The preliminary distance between two corridor sites, according to table 3.4 on page 9, was estimated at 32.4 km (i.e. two times the "Cell Range for 90% Reliability"). This coverage difference can be explained by the fact that the Predict model looks at the terrain and clutter at a particular place, and each place may have a different clutter type, whereas the estimate of table 3.4 is done for flat terrain without clutter.

The urban sites are distant by an average of 2 km, which corresponds to the estimated distance calculated in table 3.4 on page 9. In this case the estimate is close to the dBPlanner prediction because the sites are located in an urban clutter for all of the cell coverage.

6. GSM 1900 Coverage with GSM 850 Sites

Before proceeding with a GSM 1900 seamless coverage design, it is interesting and illustrative to first look at what network coverage would be like if a GSM 1900 network were deployed at the sites in table 5.1. In other words, what would be the quality of network coverage if GSM 1900 equipment were grafted onto a GSM 850 site plan?

To perform this analysis, the site data in table 5.1 were left unchanged. The only inputs that were changed relative to the GSM 850 Seamless Coverage Design were the frequency, the specific antenna models and the EIRPs, so as to conform to the GSM 1900 design specifications established in the previous sections of this document. Table 6.1 below summarizes these inputs.

Table 6.1 – Inputs for GSM 1900 Coverage with GSM 850 Sites

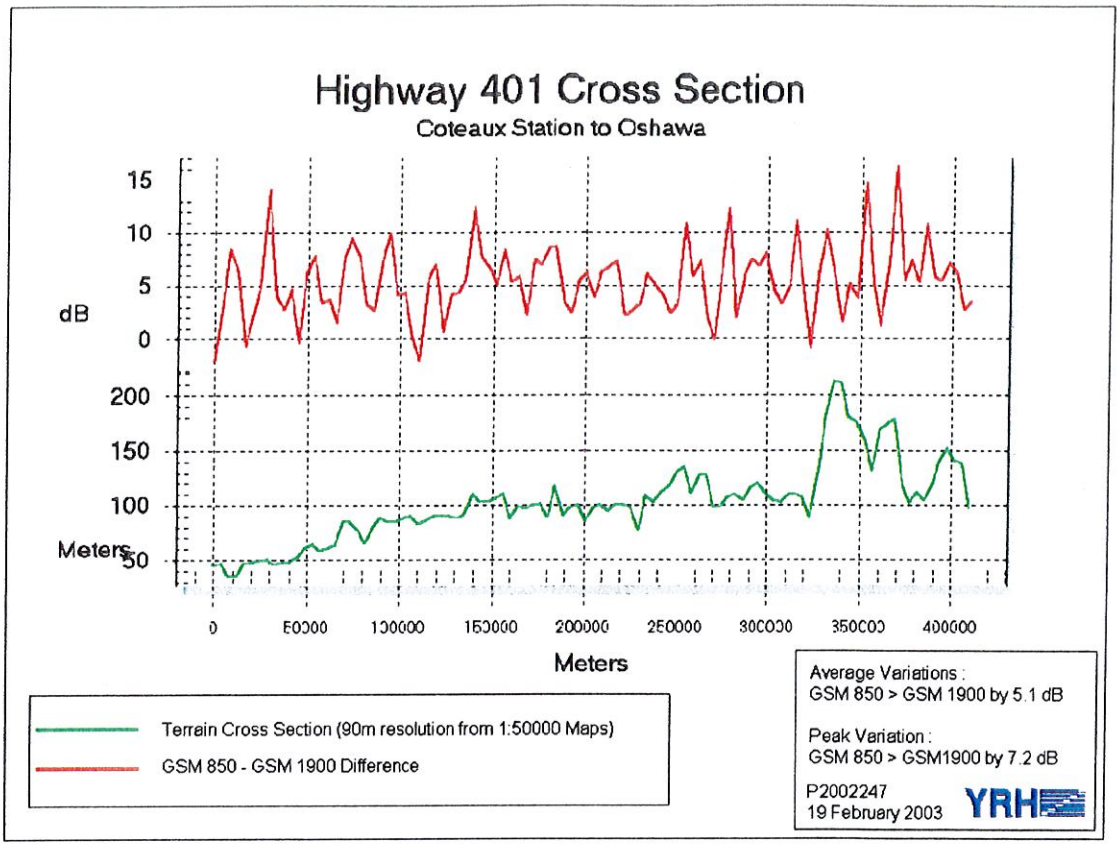
	FREQUENCY	ANTENNA	EIRP (dBm)
CORRIDOR SITES	1900 MHz	TA-1806-16-33	62.15
URBAN SITES	1900 MHz	TA-1806-16-62	56

With this network topology and site parameters, a propagation prediction was performed with dBPlanner. The propagation maps are presented in Appendix B. From these maps, it can be observed that there are extensive gaps within the corridor coverage compared to the GSM 850 design discussed in section 5 and presented in Appendix A. Coverage is no longer seamless between adjacent transmitting sites. In fact, the average size of the gap in which coverage has degraded below -86 dBm is greater than 3.4 km, with fades going often below -92 dBm.

Furthermore, an analysis of the predicted propagation differences between the two bands (please refer to the maps of Appendix C), reveals that the average variation of signal strength between the two systems along the 400 km stretch of Highway 401 is approximately 5.1 dB favouring the GSM 850 network coverage. Moreover, when looking in detail at a hilly section of the corridor, between Brockville and Kingston for example, the average variation favours the GSM 850 network by approximately 6.0 dB. The peak variation between the two networks can be as big as 7.2 dB favouring the GSM 850 network.

Figure 2 on the next page provides the difference graph between the GSM 850 and GSM 1900 propagation predictions.

Figure 2 - Highway 401 Signal Strength Difference



The next section presents the site requirements for a seamless GSM 1900 coverage for the corridor of Highway 401 and the city of Kingston.

7. GSM 1900 Seamless Coverage Design

Table 7.1 lists all the sites used in the design of the GSM 1900 seamless Highway 401 corridor coverage and the Kingston urban/suburban coverage. Appendix D provides the coverage maps for the GSM 1900 proposed network. A total of 38 sites were necessary to provide proper coverage to the specified area. A total of 26 sites were identified for the Highway 401 coverage and 12 sites were required for the Kingston coverage.

Table 7.1 - GSM 1900 Proposed Sites

SITE_ID	SECTOR	AGL (m)	ANTENNA	EIRP (dBm)	AZIMUTH (°)	LONG NAD83	LAT NAD83
YRH MTL220 COR	1	55.00	TA-1806-16-62-T0	62.15	57	-74° 11' 19"	45° 17' 56"
YRH MTL220 COR	2	55.00	TA-1806-16-62-T0	62.15	133		
YRH MTL220 COR	3	55.00	TA-1806-16-62-T0	62.15	230		
YRH BS02 COR	1	90.00	TA-1806-16-33-T0	62.15	58	-74° 20' 9"	45° 13' 7"
YRH BS02 COR	2	90.00	TA-1806-16-33-T0	62.15	238		
YRH BS03 COR	1	90.00	TA-1806-16-33-T0	62.15	56	-74° 32' 60"	45° 7' 16"
YRH BS03 COR	2	90.00	TA-1806-16-33-T0	62.15	234		
YRH BS04 COR	1	90.00	TA-1806-16-33-T0	62.15	71	-74° 44' 24"	45° 2' 54"
YRH BS04 COR	2	90.00	TA-1806-16-33-T0	62.15	279		
YRH BS05 COR	1	90.00	TA-1806-16-33-T0	62.15	81	-74° 55' 4"	45° 2' 58"
YRH BS05 COR	2	90.00	TA-1806-16-33-T0	62.15	235		
YRH BS06 COR	1	90.00	TA-1806-16-33-T0	62.15	57	-75° 7' 1"	44° 57' 32"
YRH BS06 COR	2	90.00	TA-1806-16-33-T0	62.15	236		
YRH BS07 COR	1	90.00	TA-1806-16-33-T0	62.15	60	-75° 18' 51"	44° 52' 20"
YRH BS07 COR	2	90.00	TA-1806-16-33-T0	62.15	226		
YRH BS08 COR	1	90.00	TA-1806-16-33-T0	62.15	53	-75° 28' 31"	44° 46' 29"
YRH BS08 COR	2	90.00	TA-1806-16-33-T0	62.15	221		
YRH BS09 COR	1	90.00	TA-1806-16-33-T0	62.15	53	-75° 36' 50"	44° 40' 22"
YRH BS09 COR	2	90.00	TA-1806-16-33-T0	62.15	221		
YRH BS10 COR	1	90.00	TA-1806-16-33-T0	62.15	70	-75° 44' 13"	44° 35' 44"
YRH BS10 COR	2	90.00	TA-1806-16-33-T0	62.15	200		
YRH BS11 COR	1	90.00	TA-1806-16-33-T0	62.15	45	-75° 50' 36"	44° 29' 36"
YRH BS11 COR	2	90.00	TA-1806-16-33-T0	62.15	213		
YRH BS12 COR	1	90.00	TA-1806-16-33-T0	62.15	34	-75° 56' 30"	44° 23' 42"
YRH BS12 COR	2	90.00	TA-1806-16-33-T0	62.15	252		
YRH BS13 COR	1	90.00	TA-1806-16-33-T0	62.15	73	-76° 7' 50"	44° 21' 11"
YRH BS13 COR	2	90.00	TA-1806-16-33-T0	62.15	256		
YRH BS14 COR	1	90.00	TA-1806-16-33-T0	62.15	76	-76° 18' 32"	44° 19' 12"
YRH BS14 COR	2	90.00	TA-1806-16-33-T0	62.15	263		
YRH BS15 COR	1	90.00	TA-1806-16-33-T0	62.15	60	-76° 28' 58"	44° 16' 27"
YRH BS15 COR	2	90.00	TA-1806-16-33-T0	62.15	273		
YRH BS16 COR	1	90.00	TA-1806-16-33-T0	62.15	87	-76° 38' 54"	44° 17' 5"
YRH BS16 COR	2	90.00	TA-1806-16-33-T0	62.15	266		

Table 7.1 - GSM 1900 Proposed Sites (continued)

SITE_ID	SECTOR	AGL (m)	ANTENNA	EIRP (dBm)	AZIMUTH (°)	LONG NAD83	LAT NAD83
YRH BS17 COR	1	90.00	TA-1806-16-33-T0	62.150	85	-76° 53' 36"	44° 16' 15"
YRH BS17 COR	2	90.00	TA-1806-16-33-T0	62.150	261		
YRH BS18 COR	1	90.00	TA-1806-16-33-T0	62.150	82	-77° 9' 19"	44° 14' 23"
YRH BS18 COR	2	90.00	TA-1806-16-33-T0	62.150	256		
YRH BS19 COR	1	90.00	TA-1806-16-33-T0	62.150	73	-77° 22' 47"	44° 11' 58"
YRH BS19 COR	2	90.00	TA-1806-16-33-T0	62.150	250		
YRH BS20 COR 2	1	90.00	TA-1806-16-33-T0	62.150	70	-77° 33' 54"	44° 8' 42"
YRH BS20 COR 2	2	90.00	TA-1806-16-33-T0	62.150	236		
YRH BS21 COR 2	1	90.00	TA-1806-16-33-T0	62.150	61	-77° 41' 36"	44° 5' 39"
YRH BS21 COR 2	2	90.00	TA-1806-16-33-T0	62.150	245		
YRH BS22 COR 2	1	90.00	TA-1806-16-33-T0	62.150	75	-77° 50' 1"	44° 3' 40"
YRH BS22 COR 2	2	90.00	TA-1806-16-33-T0	62.150	221		
YRH BS23 COR 2	1	90.00	TA-1806-16-33-T0	62.150	77	-78° 1' 35"	44° 0' 13"
YRH BS23 COR 2	2	90.00	TA-1806-16-33-T0	62.150	265		
YRH BS24 COR 2	1	90.00	TA-1806-16-33-T0	62.150	95	-78° 7' 17"	44° 0' 18"
YRH BS24 COR 2	2	90.00	TA-1806-16-33-T0	62.150	244		
YRH BS25 COR 2	1	90.00	TA-1806-16-33-T0	62.150	81	-78° 18' 57"	43° 58' 12"
YRH BS25 COR 2	2	90.00	TA-1806-16-33-T0	62.150	252		
YRH BS26 COR 2	1	90.00	TA-1806-16-62-T0	62.150	83	-78° 30' 50"	43° 55' 58"
YRH BS26 COR 2	2	90.00	TA-1806-16-62-T0	62.150	248		
YRH BS27 SUB	1	42.00	TA-1806-16-62-T0	56.00	0	-76° 31' 18"	44° 14' 22"
YRH BS27 SUB	2	42.00	TA-1806-16-62-T0	56.00	120		
YRH BS27 SUB	3	42.00	TA-1806-16-62-T0	56.00	240		
YRH BS28 SUB	1	42.00	TA-1806-16-62-T0	56.00	0	-76° 30' 4"	44° 15' 22"
YRH BS28 SUB	2	42.00	TA-1806-16-62-T0	56.00	120		
YRH BS28 SUB	3	42.00	TA-1806-16-62-T0	56.00	240		
YRH BS29 URB	1	32.00	TA-1806-16-62-T0	56.00	0	-76° 29' 35"	44° 14' 3"
YRH BS29 URB	2	32.00	TA-1806-16-62-T0	56.00	120		
YRH BS29 URB	3	32.00	TA-1806-16-62-T0	56.00	240		
YRH BS30 URB	1	32.00	TA-1806-16-62-T0	62.150	0	-76° 31' 34"	44° 13' 15"
YRH BS30 URB	2	32.00	TA-1806-16-62-T0	62.150	240		
YRH BS30 URB	3	32.00	TA-1806-16-62-T0	62.150	120		
YRH BS31 SUB	1	42.00	TA-1806-16-62-T0	56.00	60	-76° 34' 59"	44° 15' 38"
YRH BS31 SUB	2	42.00	TA-1806-16-62-T0	56.00	180		
YRH BS31 SUB	3	42.00	TA-1806-16-62-T0	56.00	300		
YRH BS32 URB	1	32.00	TA-1806-16-62-T0	56.00	0	-76° 36' 16"	44° 14' 54"
YRH BS32 URB	2	32.00	TA-1806-16-62-T0	56.00	120		
YRH BS32 URB	3	32.00	TA-1806-16-62-T0	56.00	240		
YRH BS33 SUB	1	42.00	TA-1806-16-62-T0	56.00	15	-76° 38' 21"	44° 13' 50"
YRH BS33 SUB	2	42.00	TA-1806-16-62-T0	56.00	135		
YRH BS33 SUB	3	42.00	TA-1806-16-62-T0	56.00	255		

Table 7.1 - GSM 1900 Proposed Sites (continued)

SITE_ID	SECTOR	AGL (m)	ANTENNA	EIRP (dBm)	AZIMUTH (°)	LONG NAD83	LAT NAD83
YRH BS34 SUB	1	42.00	TA-1806-16-62-T0	56.00	0	-76° 26' 26"	44° 14' 39"
YRH BS34 SUB	2	42.00	TA-1806-16-62-T0	56.00	120		
YRH BS34 SUB	3	42.00	TA-1806-16-62-T0	56.00	240		
YRH BS35 SUB	1	42.00	TA-1806-16-62-T0	56.00	20	-76° 30' 12"	44° 14' 29"
YRH BS35 SUB	2	42.00	TA-1806-16-62-T0	56.00	140		
YRH BS35 SUB	3	42.00	TA-1806-16-62-T0	56.00	260		
YRH BS36 URB	1	32.00	TA-1806-16-62-T0	56.00	0	-76° 29' 30"	44° 13' 30"
YRH BS36 URB	2	32.00	TA-1806-16-62-T0	56.00	120		
YRH BS36 URB	3	32.00	TA-1806-16-62-T0	56.00	240		
YRH BS37 SUB	1	42.00	TA-1806-16-62-T0	56.00	0	-76° 31' 26"	44° 15' 13"
YRH BS37 SUB	2	42.00	TA-1806-16-62-T0	56.00	120		
YRH BS37 SUB	3	42.00	TA-1806-16-62-T0	56.00	240		
YRH BS38 SUB	1	42.00	TA-1806-16-62-T0	56.00	0	-76° 34' 55"	44° 14' 6"
YRH BS38 SUB	2	42.00	TA-1806-16-62-T0	56.00	120		
YRH BS38 SUB	3	42.00	TA-1806-16-62-T0	56.00	240		

The average distance between two corridor sites for the GSM 1900 system design presented in Appendix D is approximately 14 km. The preliminary distance between two corridor sites, according to table 3.5 on page 10, was estimated at 21.2 km (i.e. two times the "Cell Range for 90% Reliability"). This coverage difference can be explained by the fact that the Predict model looks at the terrain and clutter at a particular place, and each place may have a different clutter type, whereas the estimate of table 3.5 is done for flat terrain without clutter.

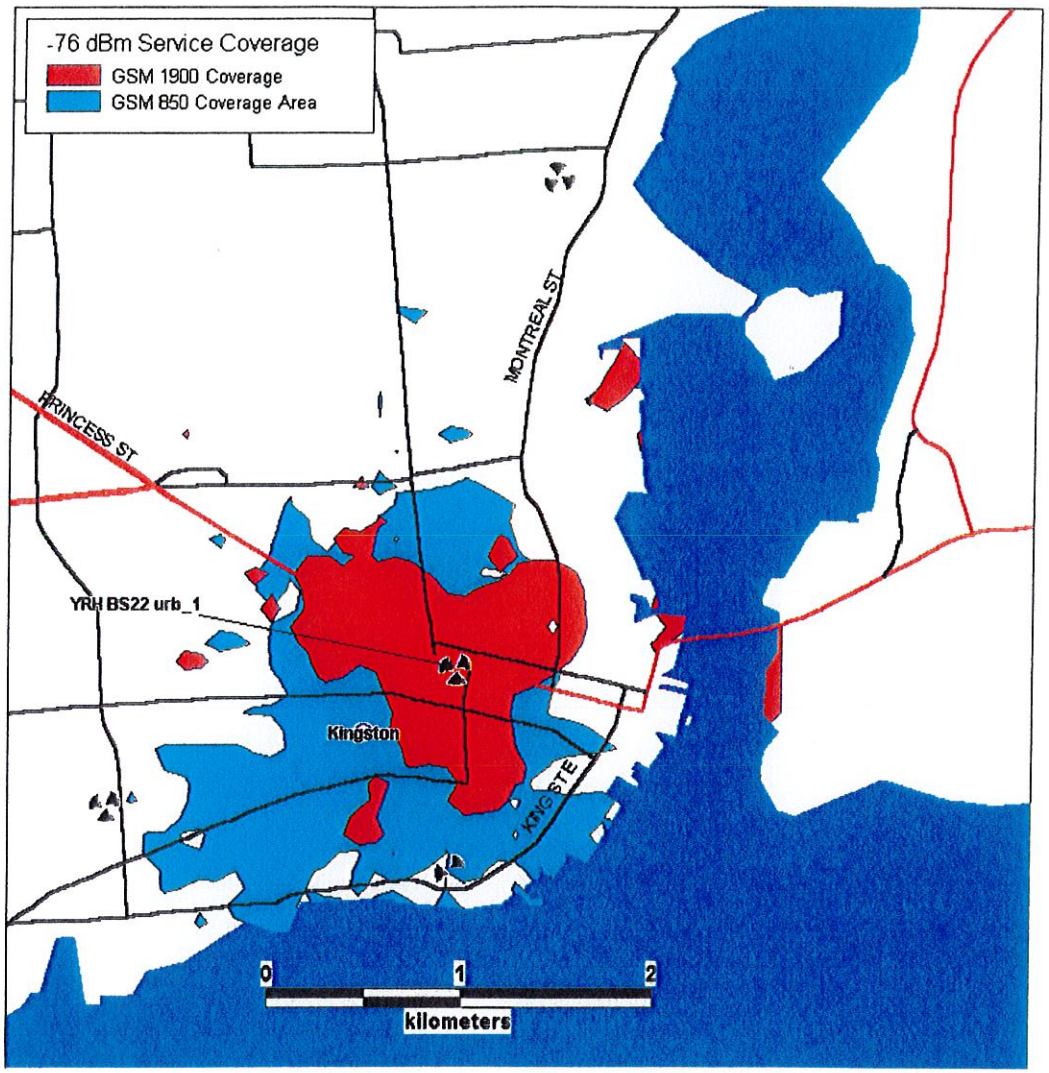
The urban sites are distant by an average of 1.1 km, which corresponds to the estimated distance calculated in table 3.5 on page 10. In this case the estimate is close to the dBPlanner prediction because the sites are located in an urban clutter for all of the cell coverage.

Following the analysis of the GSM 1900 coverage, it is observed that the GSM 1900 network would require 1.3 times more sites than the GSM 850 network to offer an equivalent seamless coverage for the corridor of Highway 401. Furthermore, the study shows that the infrastructure requirement would rise to 1.5 times more GSM 1900 sites to obtain an equivalent GSM 850 seamless suburban and urban coverage within the city of Kingston.

It can also be demonstrated that for coverage areas of greater dimension than the city of Kingston, a GSM 1900 network could require more than 1.5 times as many sites than a GSM 850 network for the same coverage. In the case of a larger coverage area, it could take as much as 2 times the number of sites than what a GSM 850 network would require. In such large areas, the peripheral coverage effect is negligible compared to the area coverage effect. In theory, for a signal that is 3 dB (2 times) stronger, its coverage radius (R) would be $\sqrt{2}(1.4142)$ times greater and its coverage area would be 2 times greater (R^2). For Example, figure 3 on the next page shows the coverage difference between an isolated interior Kingston site (YRH BS22 URB of table 5.1) for 850 MHz and 1900 MHz propagations. The

result of the analysis shows that the GSM 850 site coverage (5.61 km^2) is 1.87 times greater than the GSM 1900 site coverage (3.0 km^2), closely approaching the theoretical multiple of 2.

Figure 3 - One site coverage area (GSM 850 and GSM 1900)



8. Conclusion

The analysis begins with a review of the scientific literature on the subject of the differing radio propagation characteristics in the two bands. Differing characteristics in relation to free space loss, diffraction losses and absorption losses are examined. Empirical studies confirming the existence of these propagation differentials in real world environments are also cited.

It is shown that the difference in received signal strength indicator (RSSI) favouring the Cellular band is on the order of 4 dB in theory, and can be as large as 7.9 dB in practice. Such a differential translates into a requirement for a more intensive deployment of antenna infrastructure in a PCS environment than in a Cellular environment.

To concretise the impact of this differential on real world network infrastructure requirements, the analysis then proceeds to undertake a sample greenfield deployment study for each of the two spectrum bands. The region selected for this comparative study is Highway 401 between Oshawa, Ontario and the Quebec border (corridor coverage), including the city of Kingston, Ontario (urban coverage).

To ensure consistency of results across the two bands, it is assumed that Global System for Mobile (GSM) infrastructure is being deployed in both bands. The coverage objectives for the two bands are those generally accepted by the Cellular and PCS Industry for GSM 850 MHz and GSM 1900 MHz systems respectively. The emission parameters for each band are taken from prevailing Industry Canada Standard Radio System Plans (SRSPs). The operational characteristics of the GSM base stations and mobiles are based on European Telecommunications Standards Institute (ETSI) specifications and requirements. Finally, the propagation tool used for the coverage calculation in both bands is the Marconi dBPlanner 2.1 software using the Predict 2.0 model.

The results of this comparative deployment study confirm the expectations that emerged from the scientific literature review. Specifically:

- the average signal strength difference along the selected portion of Highway 401 is 5.1 dB favouring the 850 MHz band;
- the GSM 1900 network would require an average of 1.3 times more sites than its GSM 850 counterpart to ensure seamless coverage along the selected portion of Highway 401;
- in areas of greater variation in terrain elevation, the average signal strength difference increases to 6.0 dB in favour of the 850 MHz band, suggesting that the site multiple for GSM 1900 deployment would be even greater than 1.3;
- the GSM 1900 network would require an average of 1.5 times more sites than its GSM 850 counterpart to ensure seamless coverage across the city of Kingston.

It can also be shown that for coverage areas of greater dimension than the city of Kingston, the number of sites that would be required to offer a seamless GSM 1900 coverage could be greater than 1.5 times as determined in this study. In fact, it can be demonstrated that in theory it could reach 2.0 times as many sites than what would be required for a seamless GSM 850 coverage. This is true because as the dimension of the coverage area increases, the relative importance of the peripheral sites to interior sites decreases. In fact, an analysis of the coverage from a single interior site within the city of Kingston, shows that the GSM 850 MHz coverage area is 1.87 times greater than the area covered by the same GSM 1900 site for a service threshold of -76 dBm for both technologies.

Hence, for two equivalent GSM networks operating in two different bands, the GSM 1900 network will require significantly more cell site equipment and infrastructure than its GSM 850 counterpart. This additional investment requirement for the 1900 MHz band not only increases network expense, but also complicates the network implementation process and lengthens the delays of achieving a network that can offer seamless coverage according to the state of the art standards.

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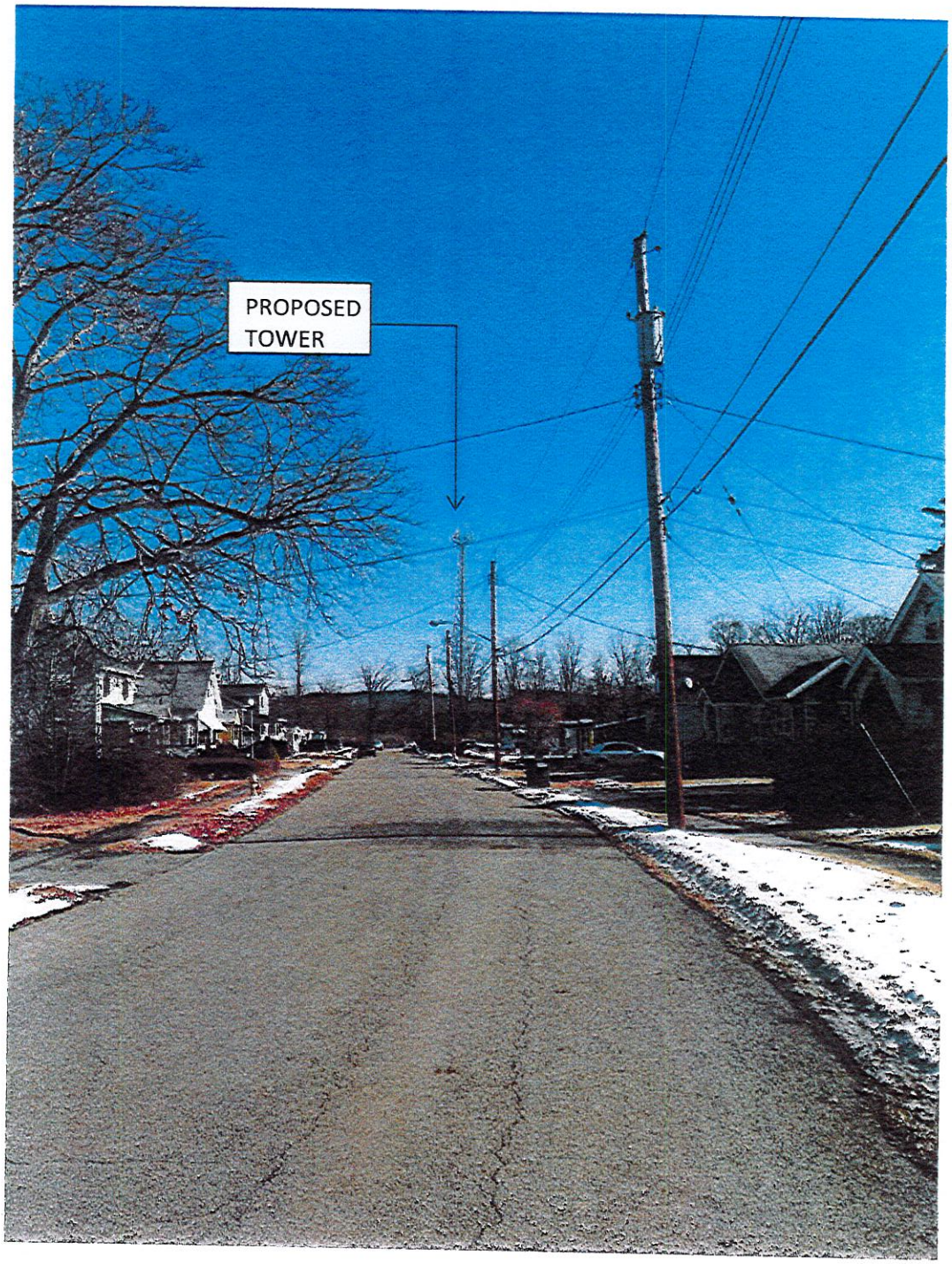
PHOTO 24:



AFTER:
LOOKING EAST AT SITE
FROM MORLEY PL.

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BETHESDA, MD 20814

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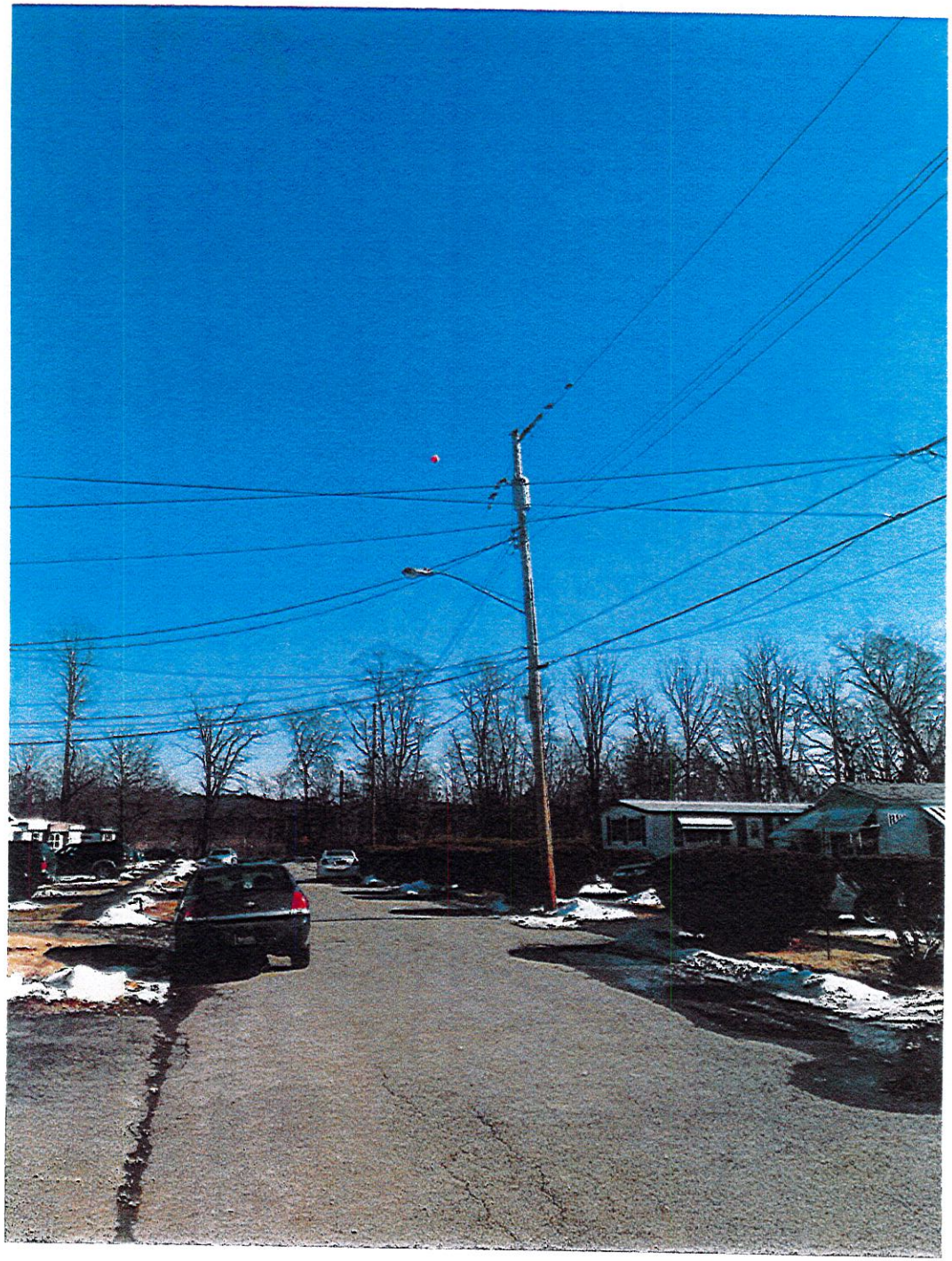

BEFORE:
LOOKING SOUTH EAST AT
SITE FROM MORLEY PL.

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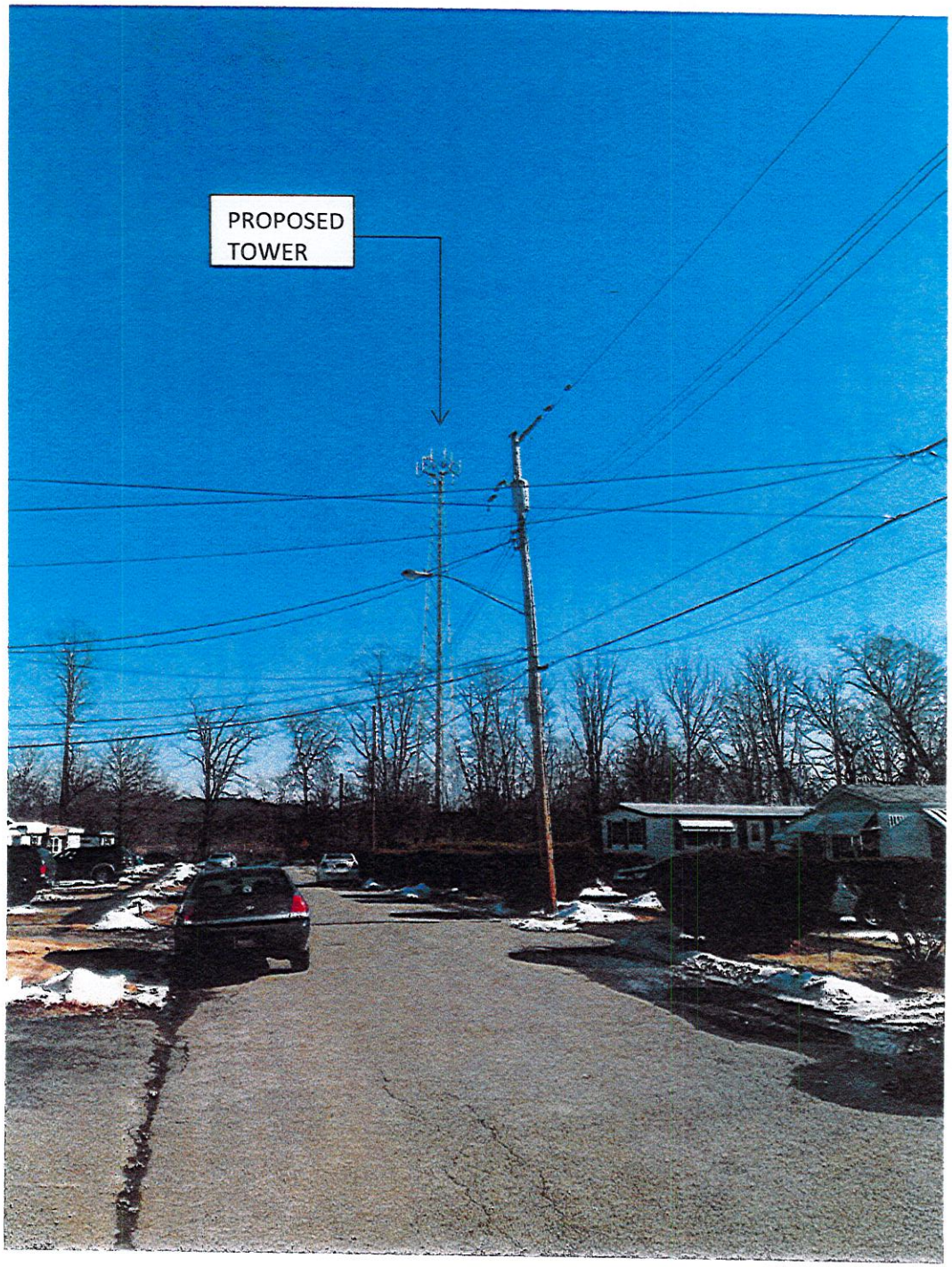

AFTER:
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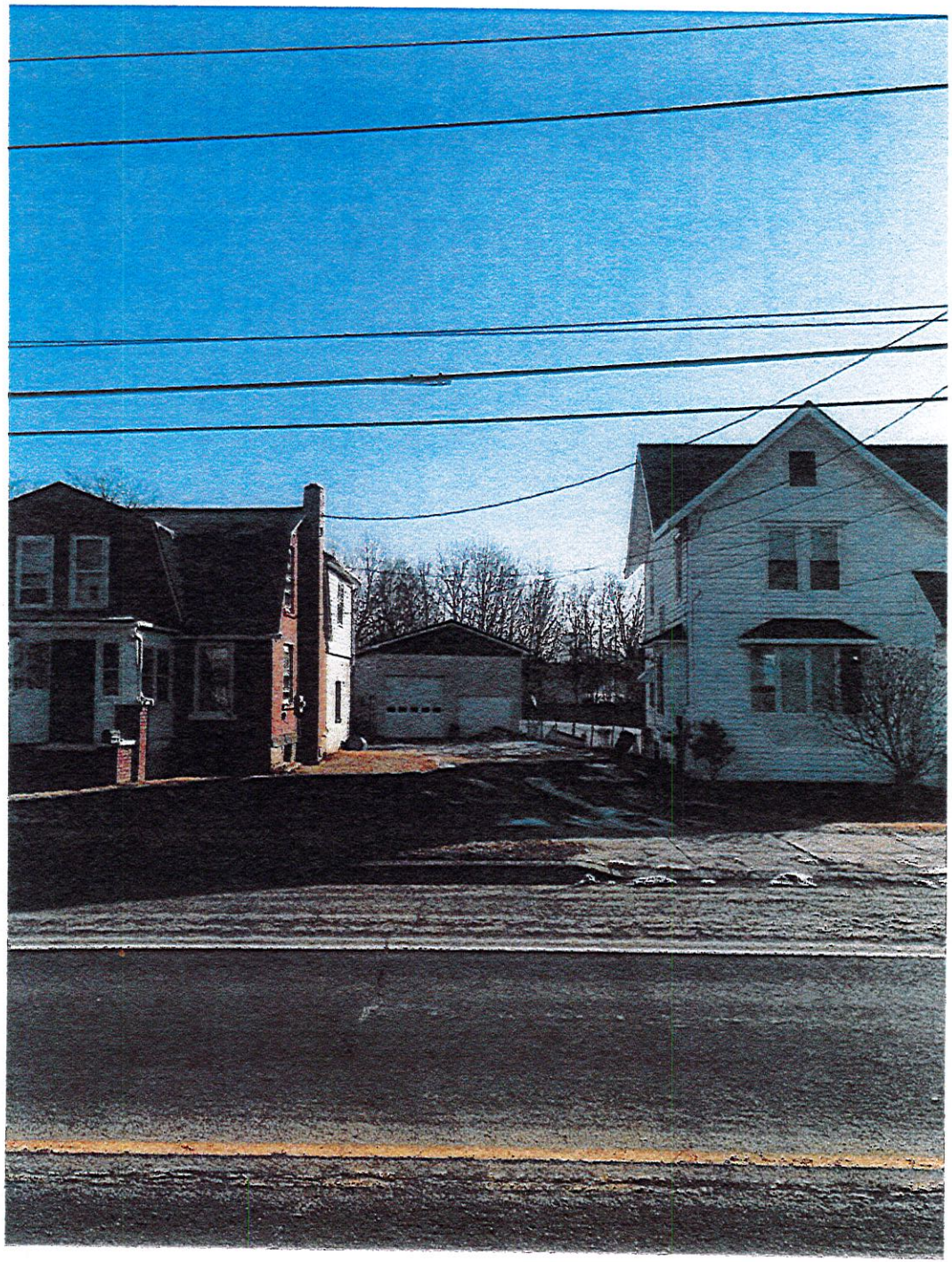

BEFORE:
LOOKING EAST AT SITE FROM PENNSYLVANIA AVE. **(NOT VISIBLE)**

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BETHESDA, MD 20814

PHOTO 27:

BEFORE:
LOOKING SOUTH EAST AT SITE FROM PENNSYLVANIA AVE. & BUDD ST.

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DEVELOPMENT DESIGN

RESIDENTIAL | COMMERCIAL | WIRELESS | ENERGY

17 Industrial Street | Rochester, NY 14614

Office: 585-360-2733 | Fax: 585-360-2735

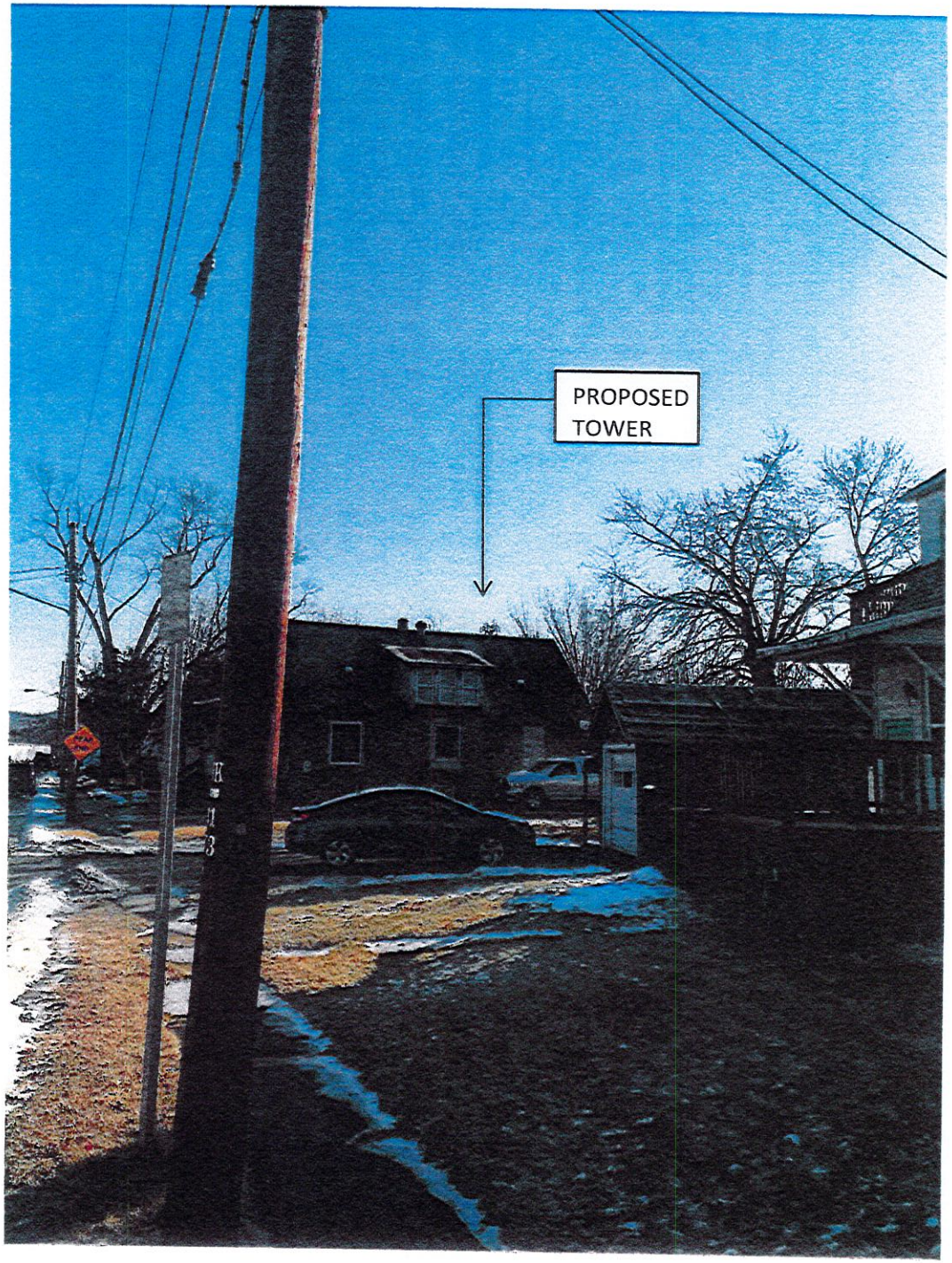
www.carpentercg.com

PREPARED FOR:

upstateTower

4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 27:



AFTER:
LOOKING SOUTH EAST AT SITE FROM PENNSYLVANIA AVE. & BUDD ST.

PREPARED BY:

CCG CARPENTER CONSULTING GROUP

DEVELOPMENT DESIGN

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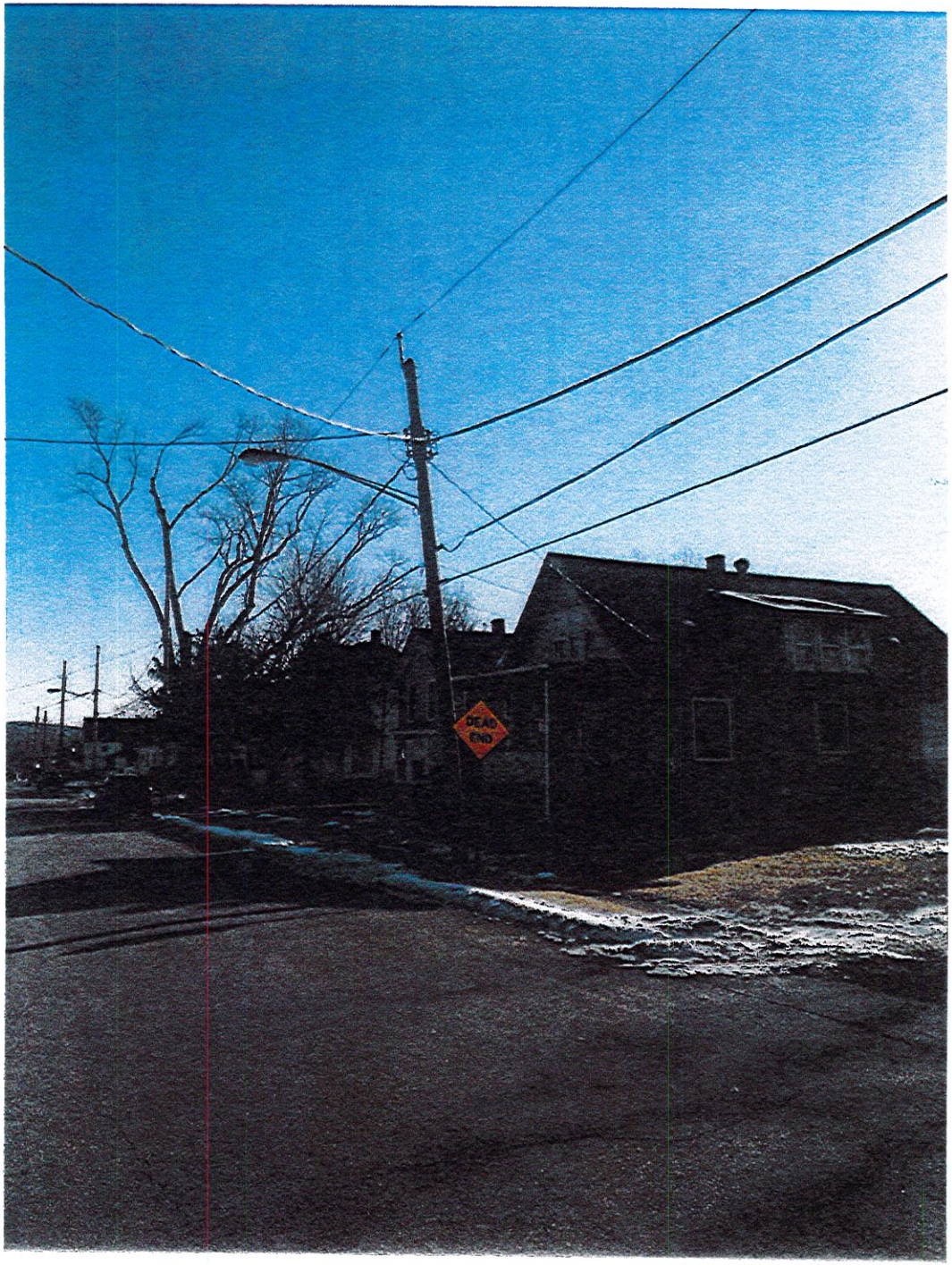
PREPARED FOR:

upstateTower

4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 28:



BEFORE:
LOOKING SOUTH EAST AT SITE FROM BUDD ST.

PREPARED BY:
CCG CARPENTER CONSULTING GROUP
DEVELOPMENT DESIGN
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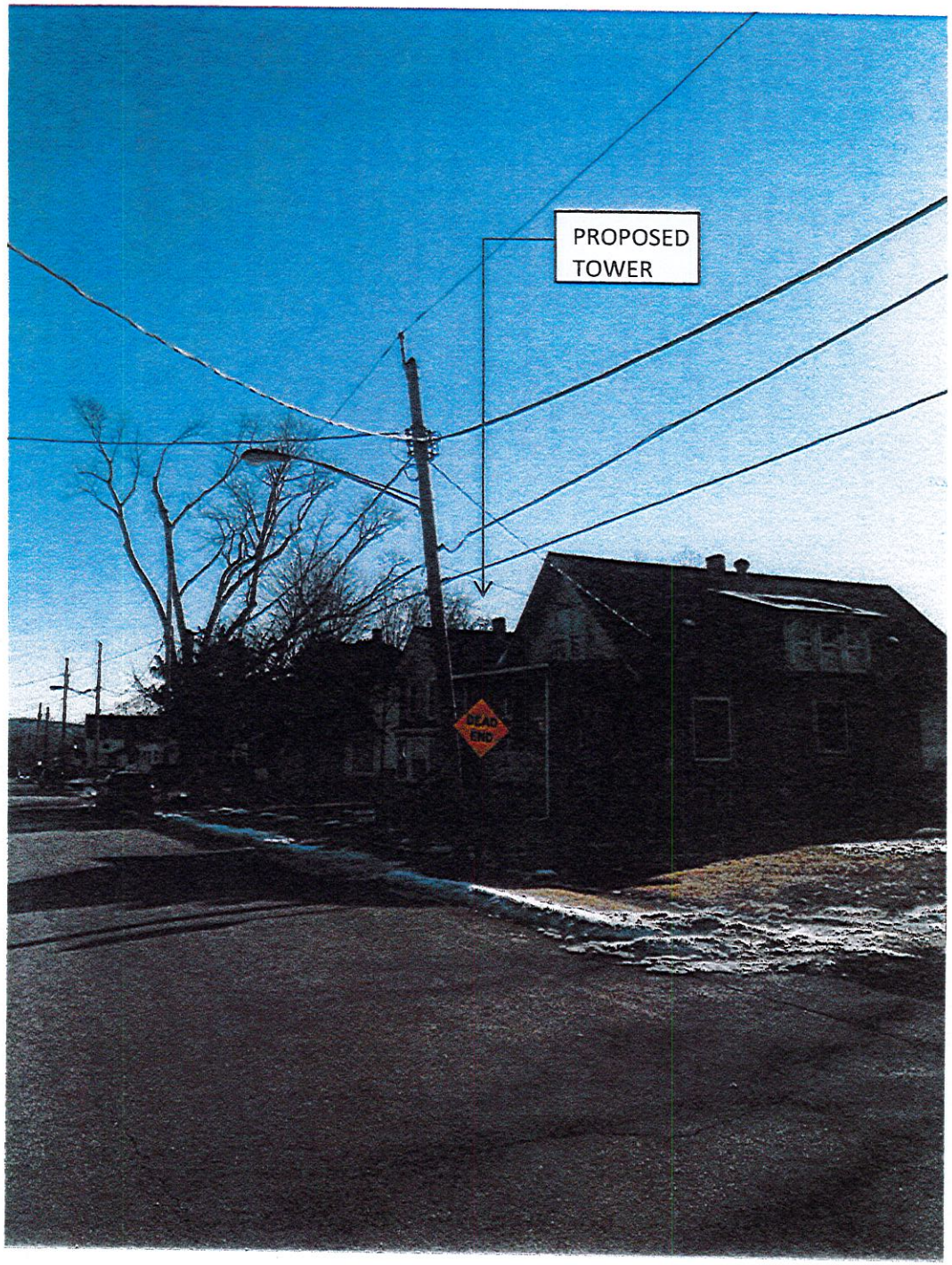
PREPARED FOR:

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 28:



AFTER:
LOOKING SOUTH EAST AT
SITE FROM BUDD ST.

PREPARED BY:
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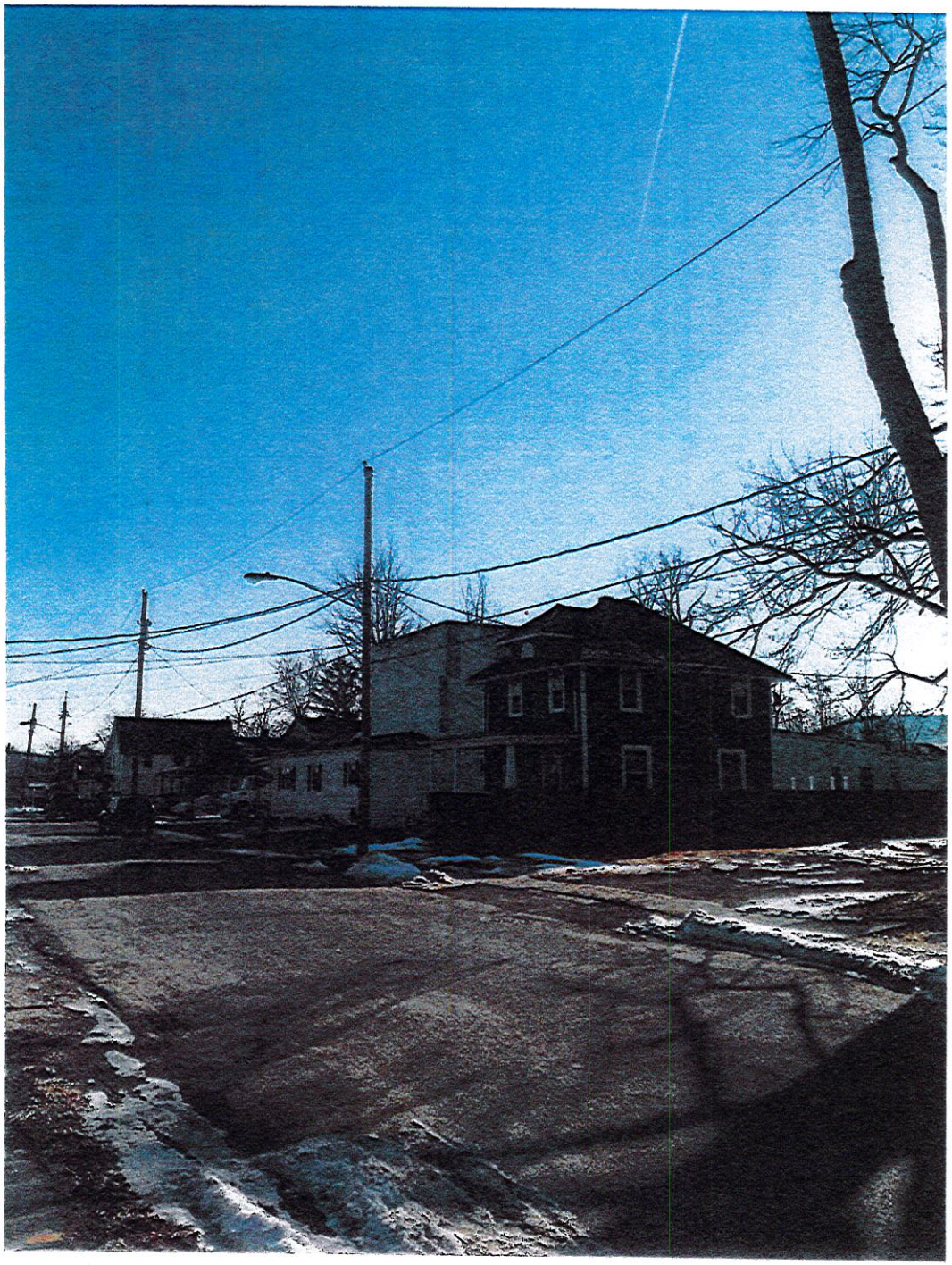
PREPARED FOR:

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 29:



BEFORE:
LOOKING SOUTH EAST AT
SITE FROM BUDD ST.

PREPARED BY:

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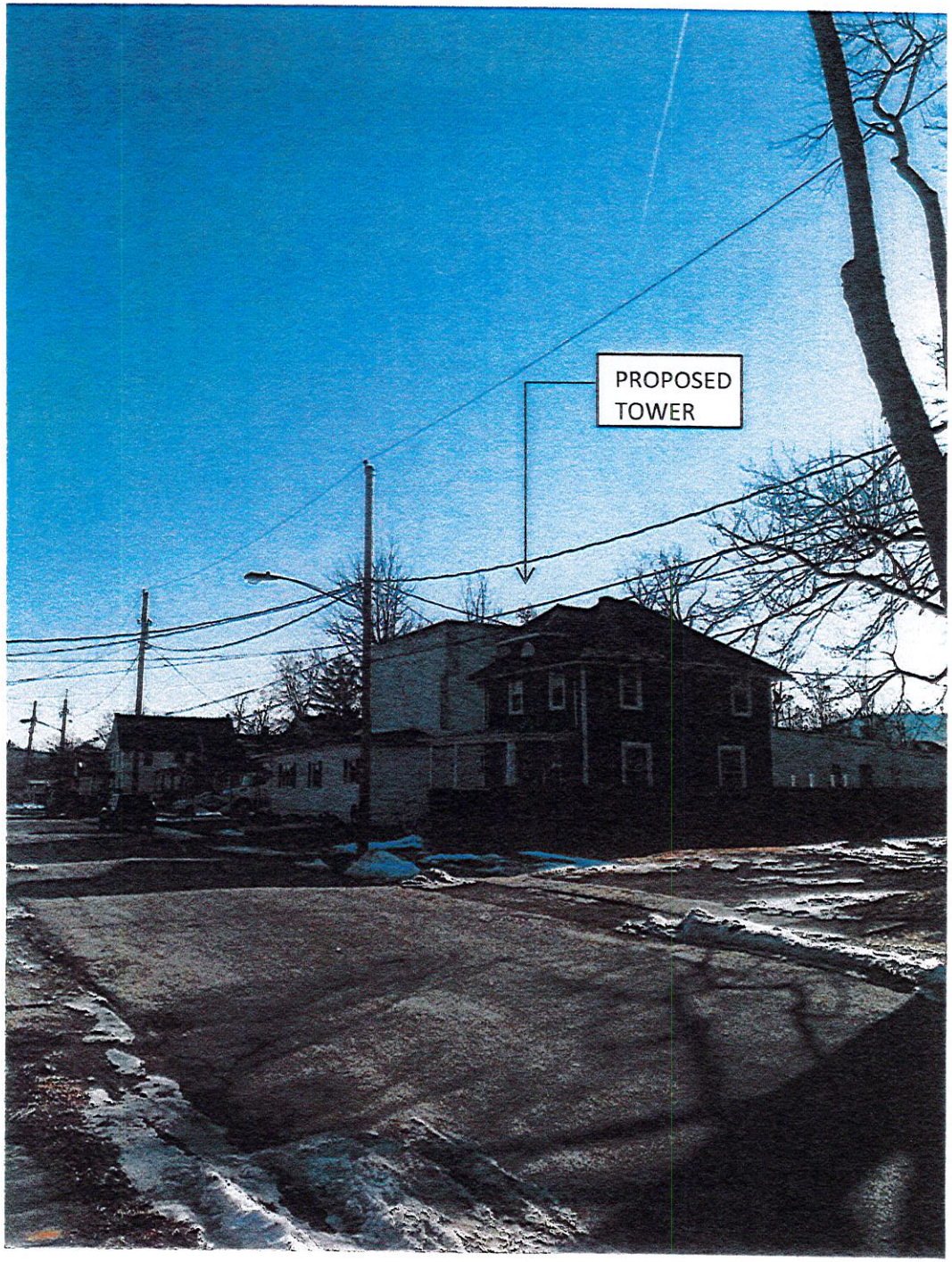
BETHESDA, MD 20814

PHOTO 29:



AFTER:
LOOKING SOUTH EAST AT
SITE FROM BUDD ST.

PREPARED BY:

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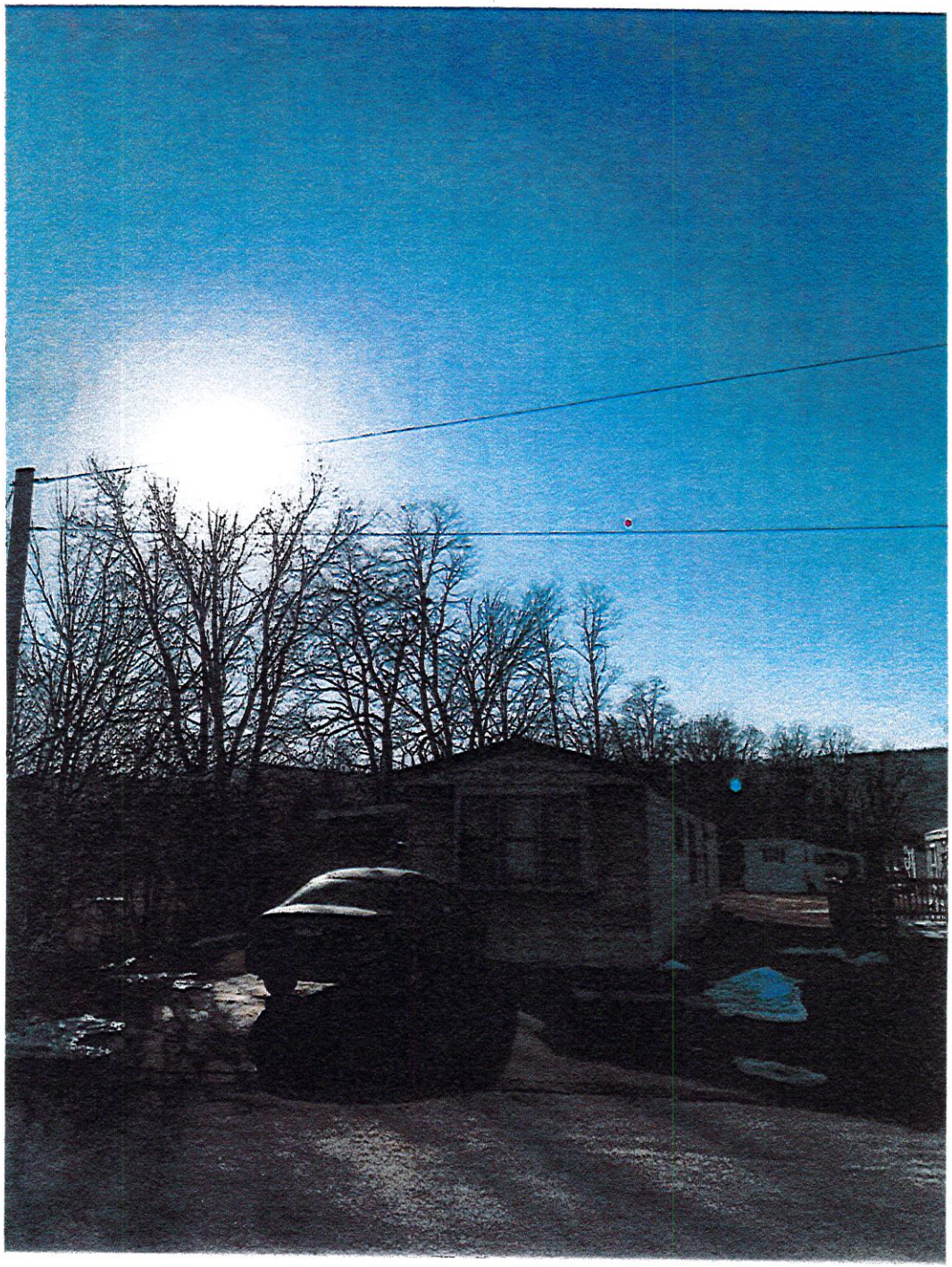
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 30:



BEFORE:
LOOKING SOUTH AT SITE
FROM BUDD ST.

PREPARED BY:
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PREPARED FOR:

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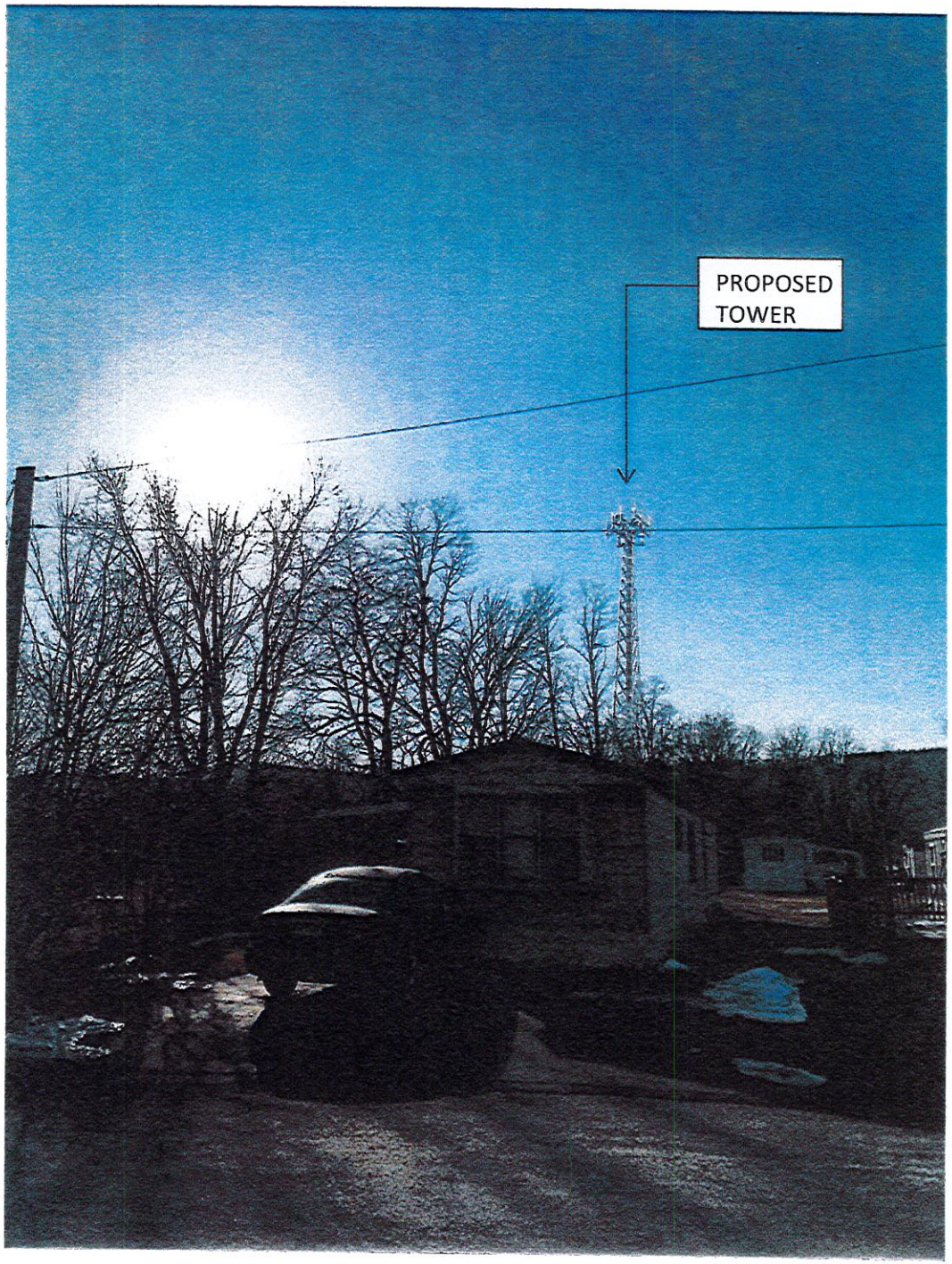
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 30:



AFTER:
LOOKING SOUTH AT SITE
FROM BUDD ST.

PREPARED BY:
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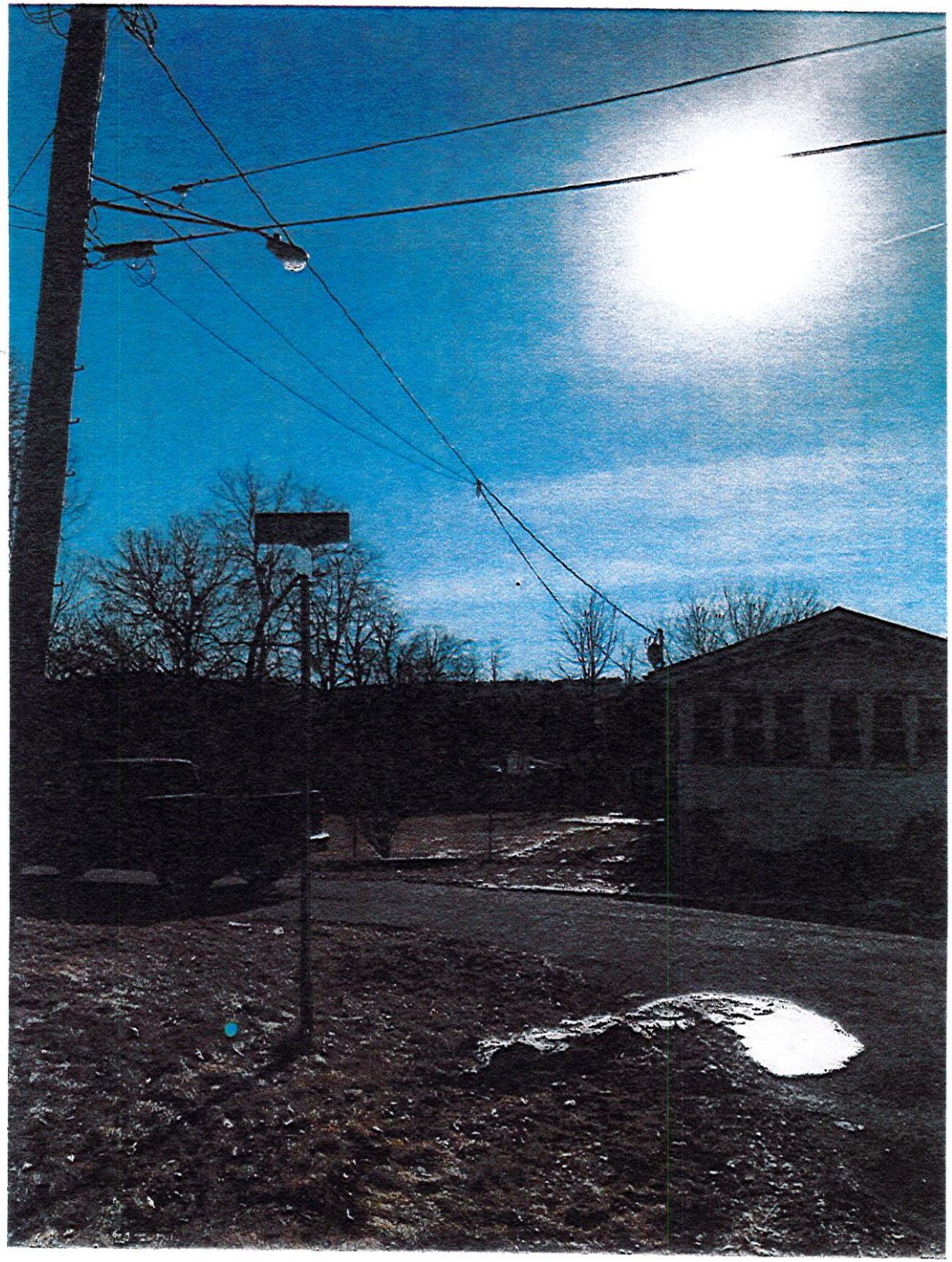
upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 31:



BEFORE:
LOOKING SOUTH AT SITE
FROM S. WILLIAM ST.
& S. KINYON ST.

PREPARED BY:
CCG CARPENTER CONSULTING GROUP
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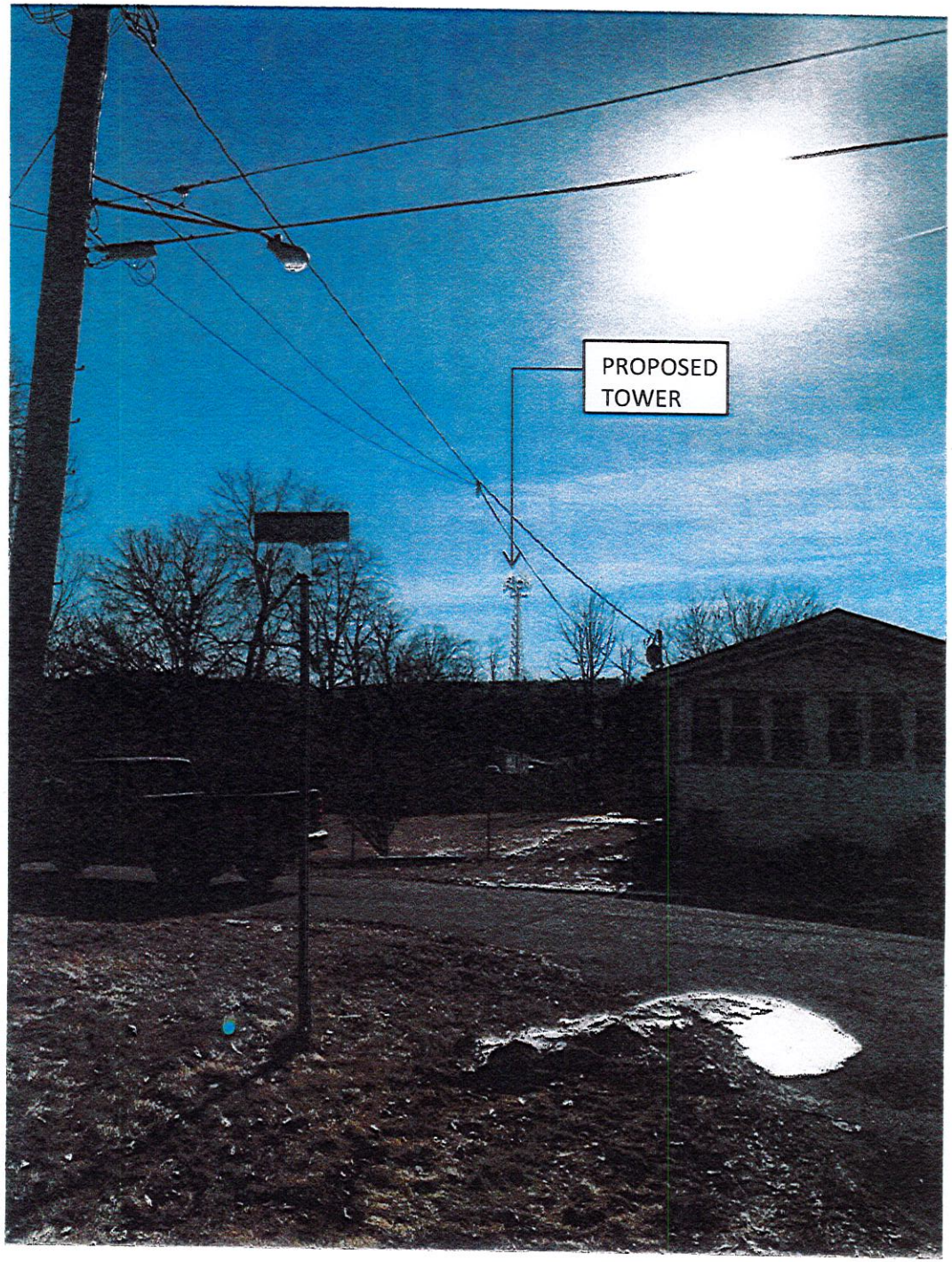
BETHESDA, MD 20814

PHOTO 31:



AFTER:
LOOKING SOUTH AT SITE
FROM S. WILLIAM ST.
& S. KINYON ST.

PREPARED BY:
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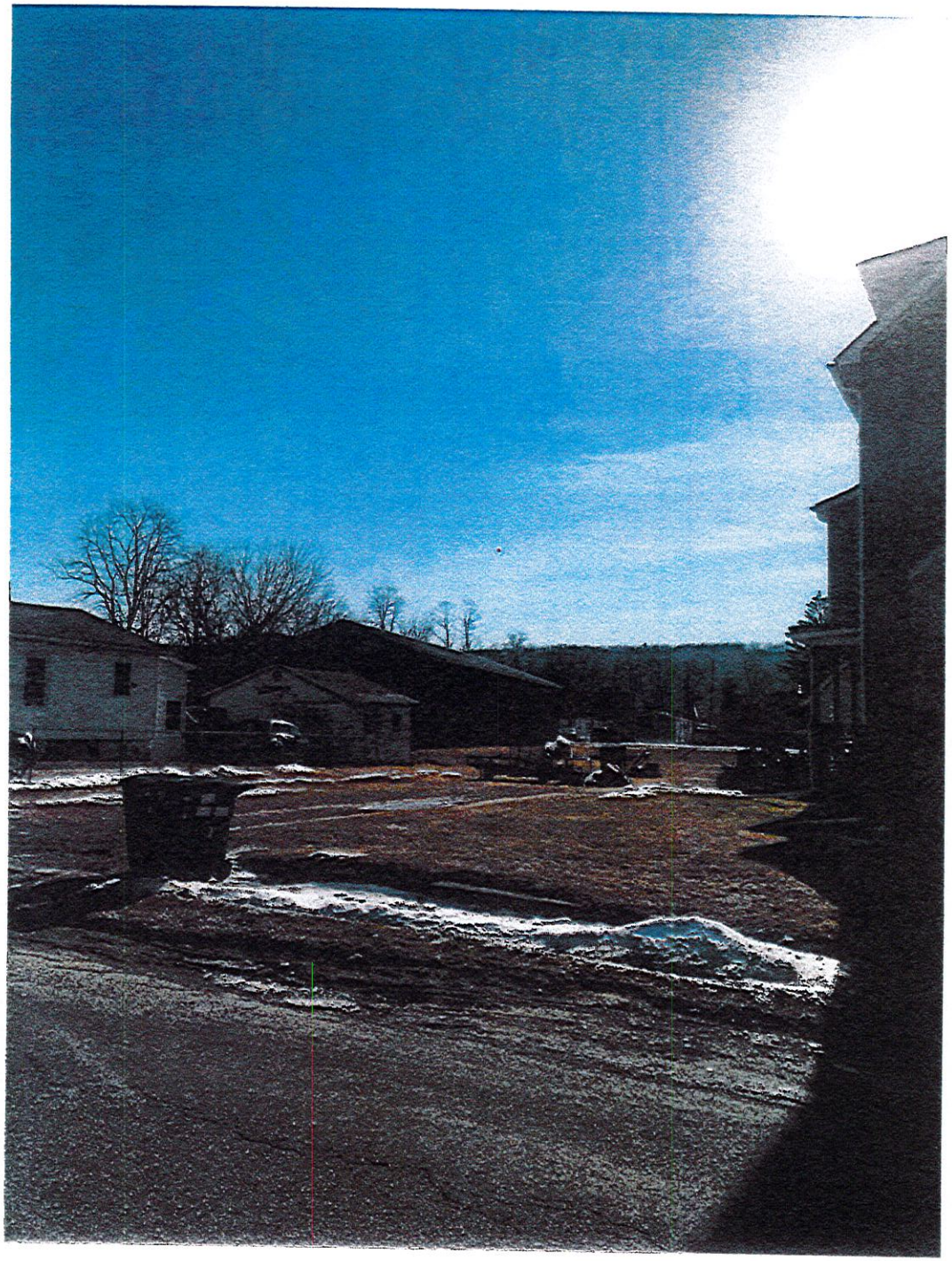
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 32:



BEFORE:
LOOKING SOUTH EAST AT
SITE FROM S. WILLIAM ST.

PREPARED BY:

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DEVELOPMENT DESIGN

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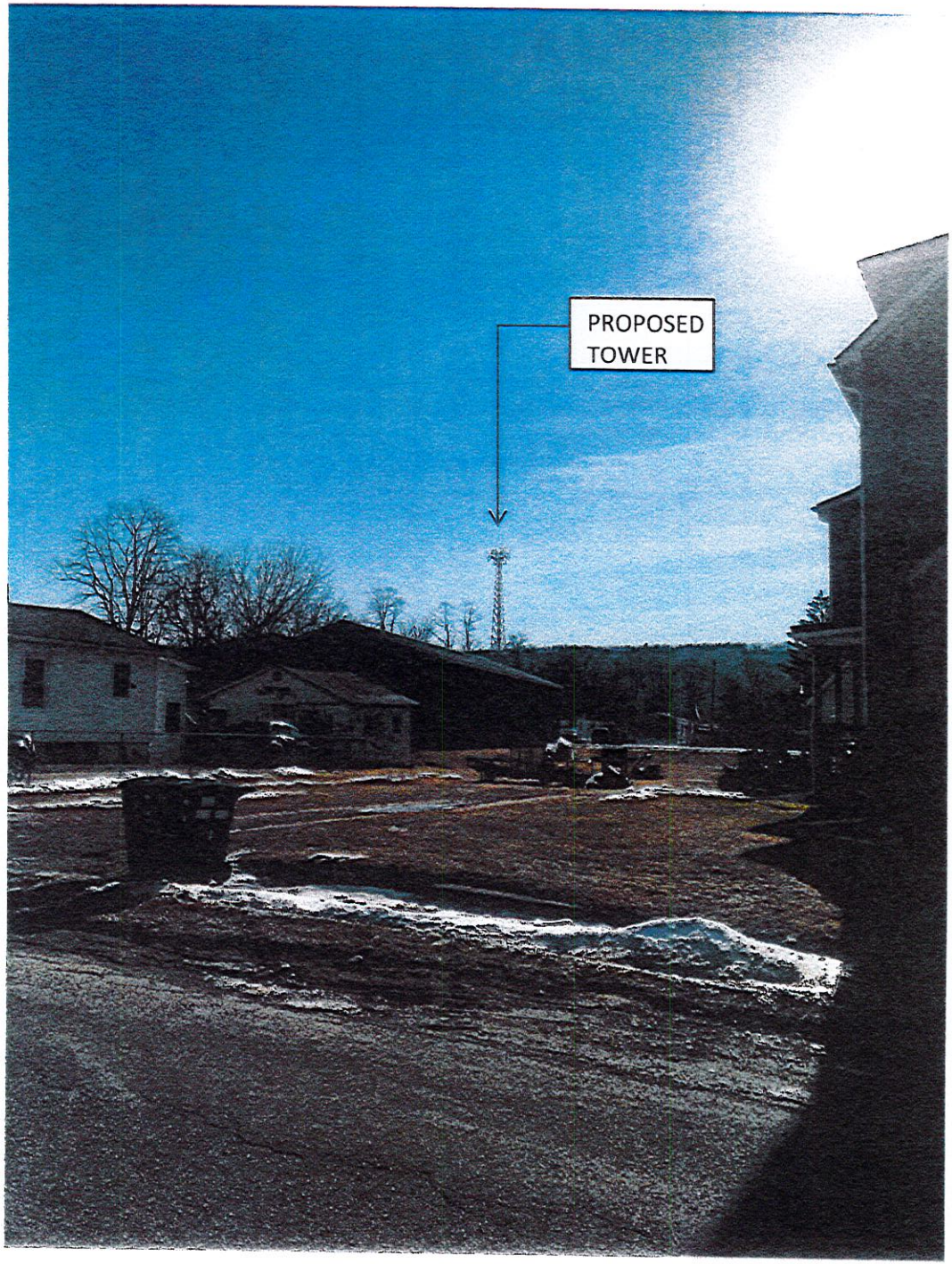
BETHESDA, MD 20814

PHOTO 32:



AFTER:
LOOKING SOUTH EAST AT
SITE FROM S. WILLIAM ST.

PREPARED BY:
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PREPARED FOR:

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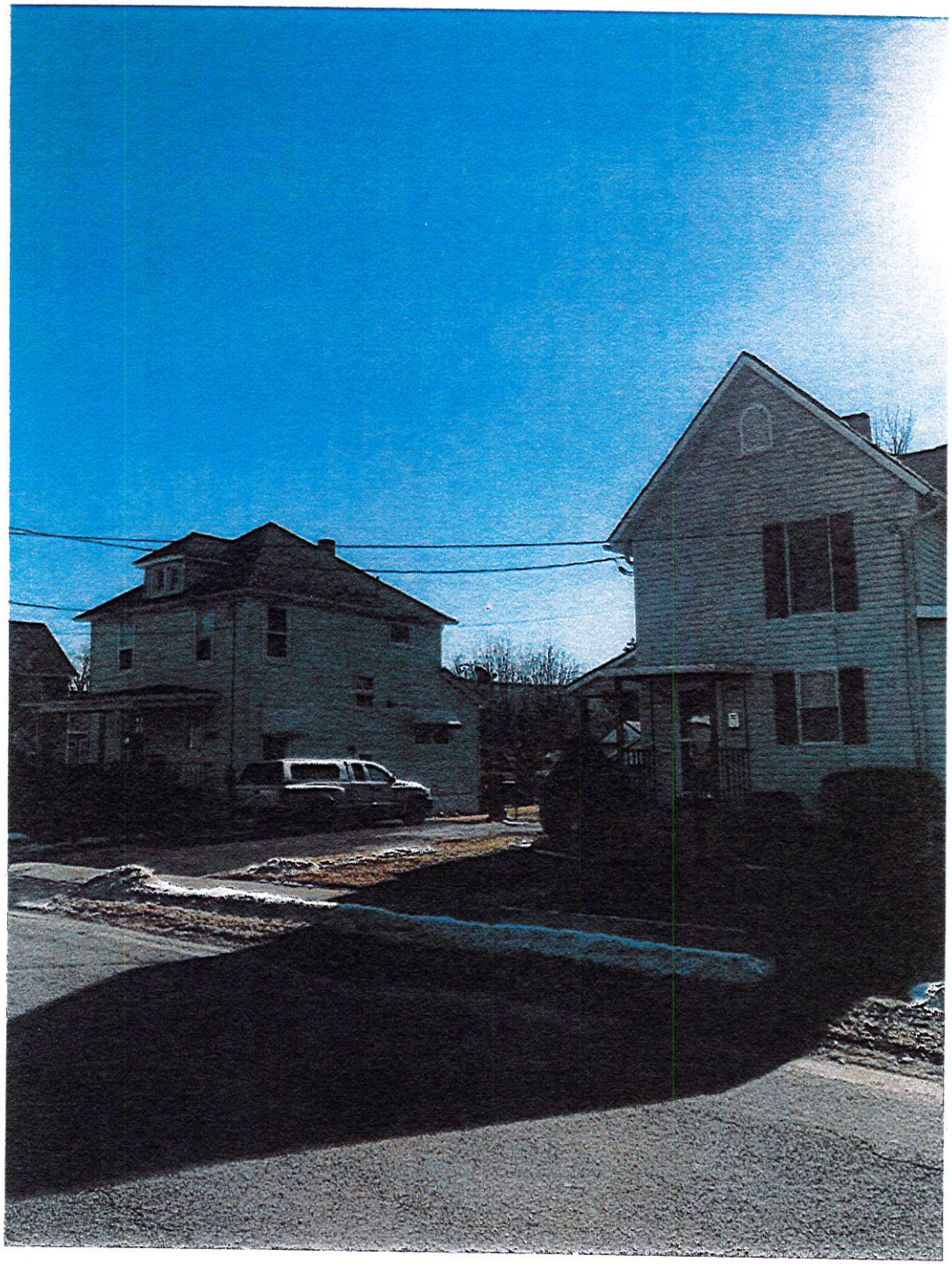
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 33:



BEFORE:
LOOKING SOUTH EAST AT
SITE FROM S. WILLIAM ST.

PREPARED BY:

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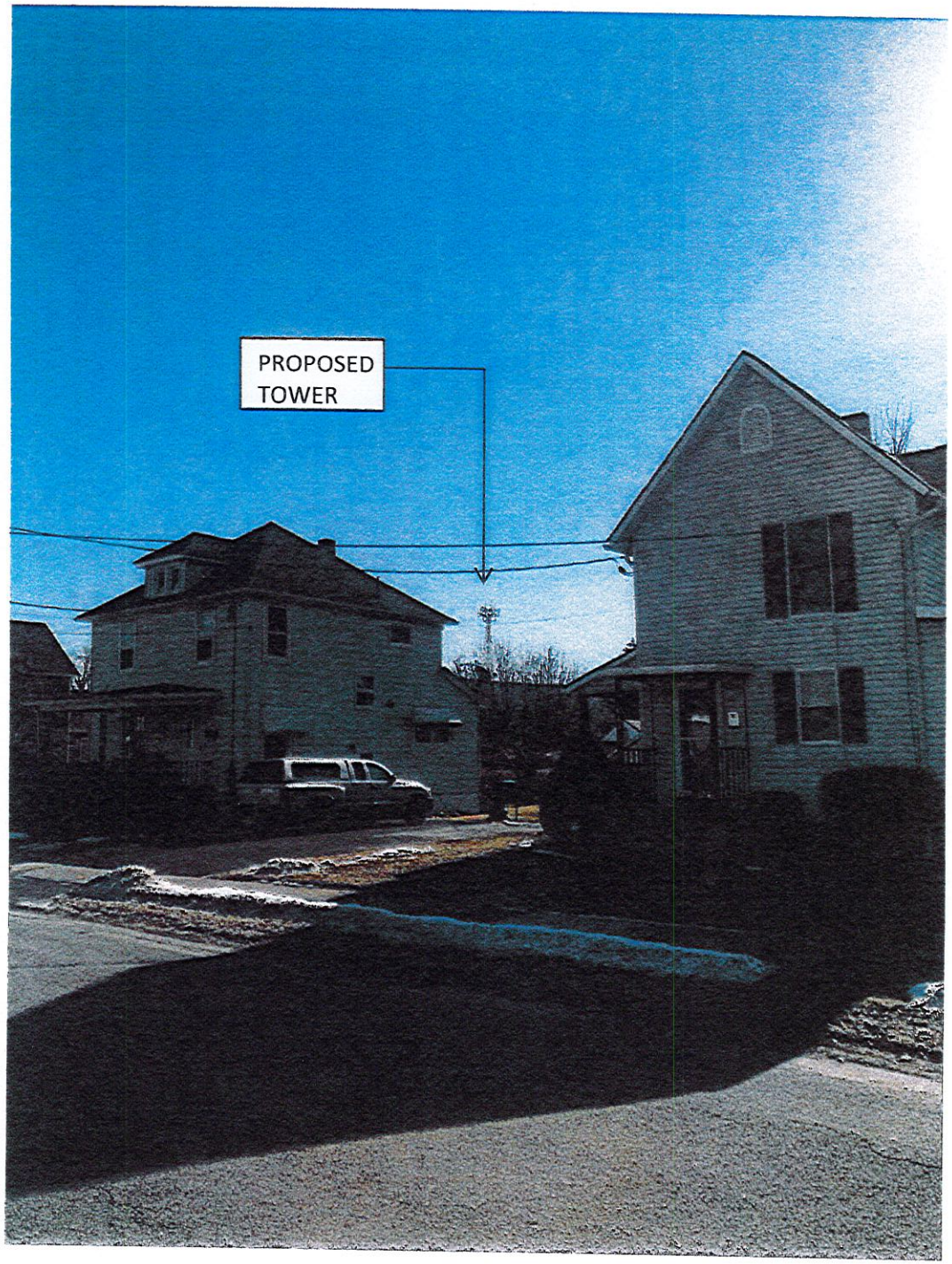
BETHESDA, MD 20814

PHOTO 33:



AFTER:
LOOKING SOUTH EAST AT
SITE FROM S. WILLIAM ST.

PREPARED BY:

CCG CARPENTER CONSULTING GROUP

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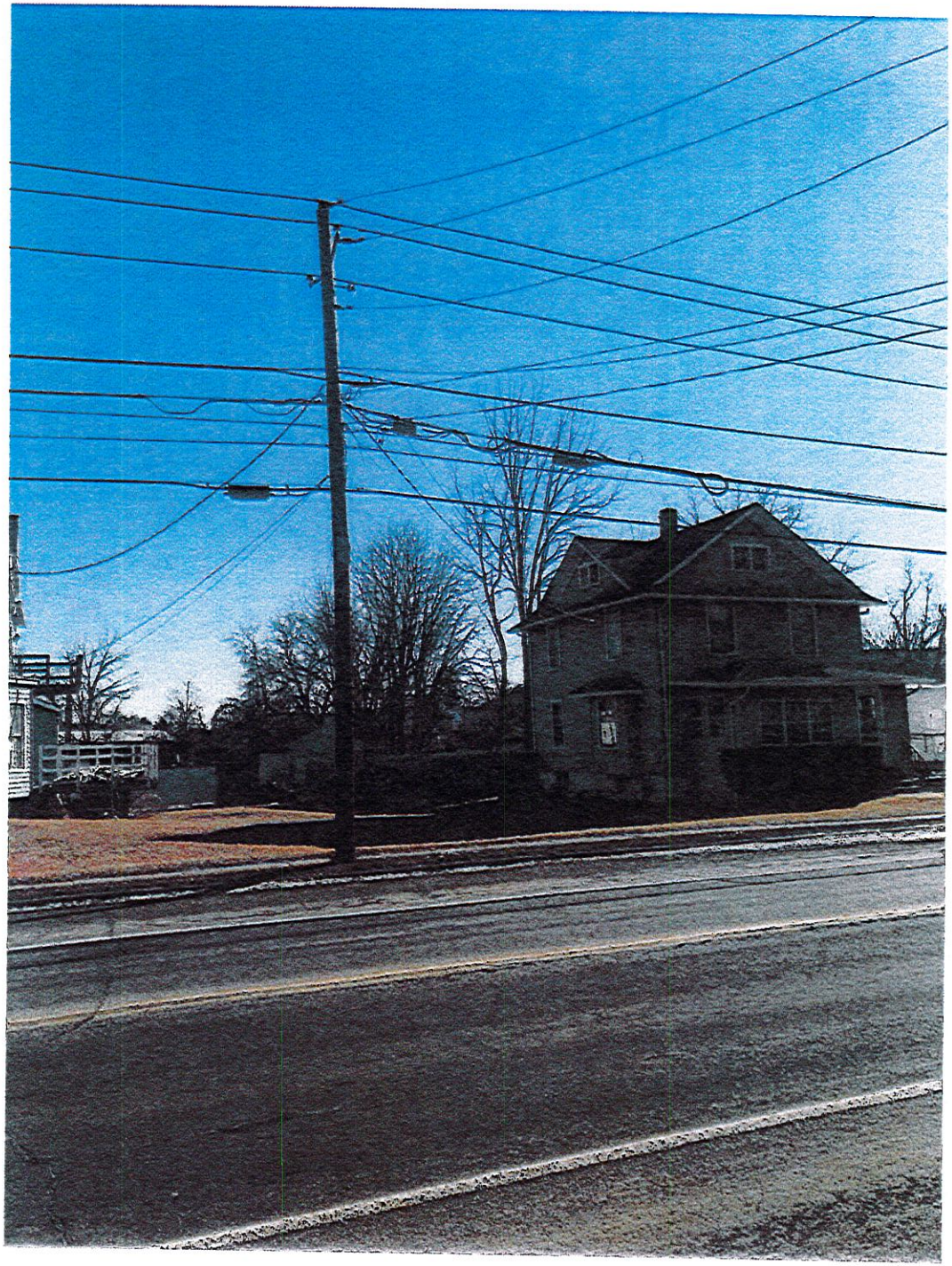
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 34:



BEFORE:
LOOKING SOUTH EAST AT SITE FROM PENNSYLVANIA AVE.

PREPARED BY:
CCG CARPENTER CONSULTING GROUP
DEVELOPMENT DESIGN
RESIDENTIAL | COMMERCIAL | WIRELESS | ENERGY
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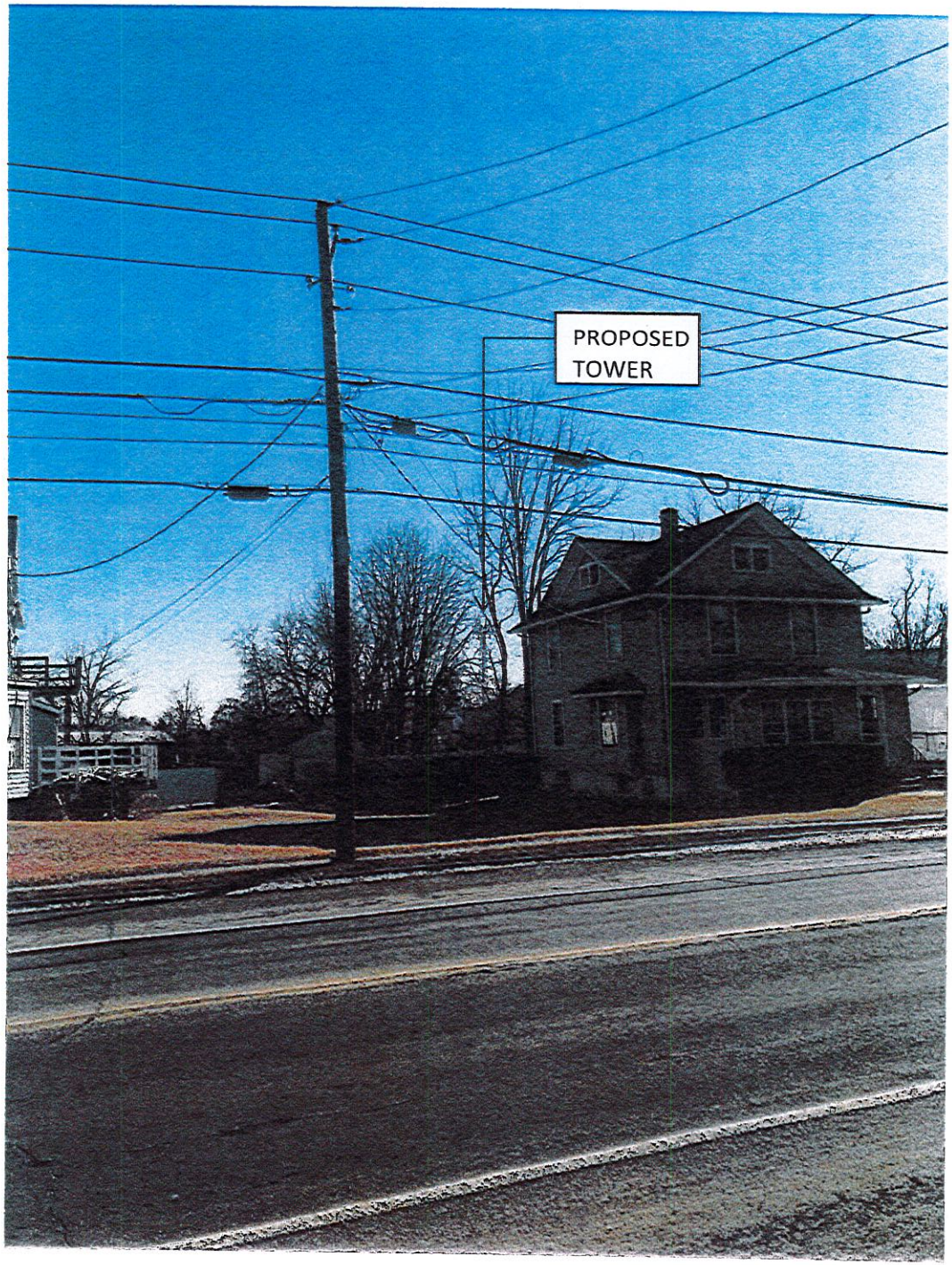
PREPARED FOR:

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 34:



AFTER:
LOOKING SOUTH EAST AT SITE FROM PENNSYLVANIA AVE.

PREPARED BY:
CCG CARPENTER CONSULTING GROUP
DEVELOPMENT DESIGN
RESIDENTIAL | COMMERCIAL | WIRELESS | ENERGY
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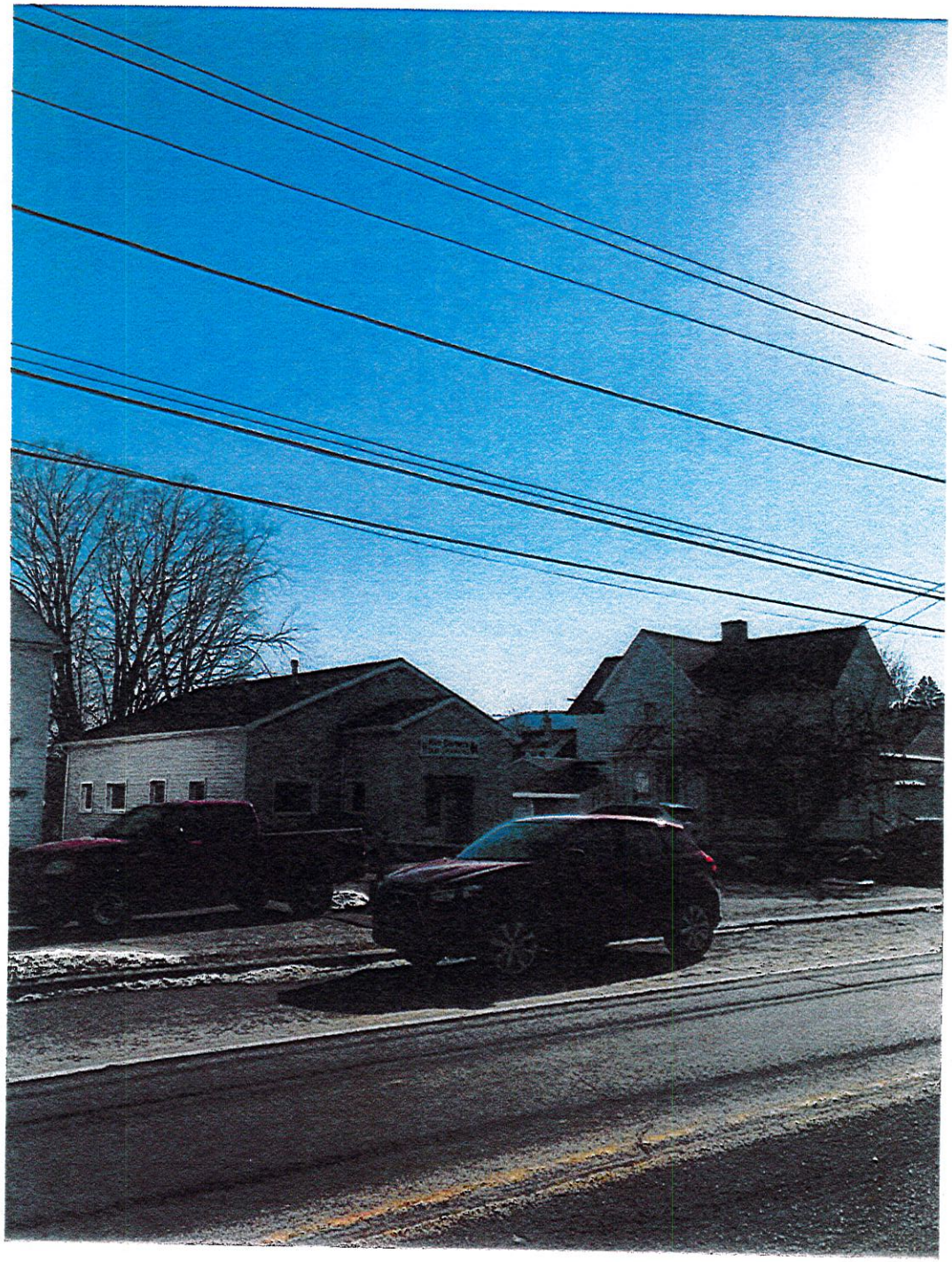
PREPARED FOR:

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 35:



BEFORE:
LOOKING SOUTH EAST AT SITE FROM PENNSYLVANIA AVE.

PREPARED BY:
CCG CARPENTER CONSULTING GROUP
DEVELOPMENT DESIGN
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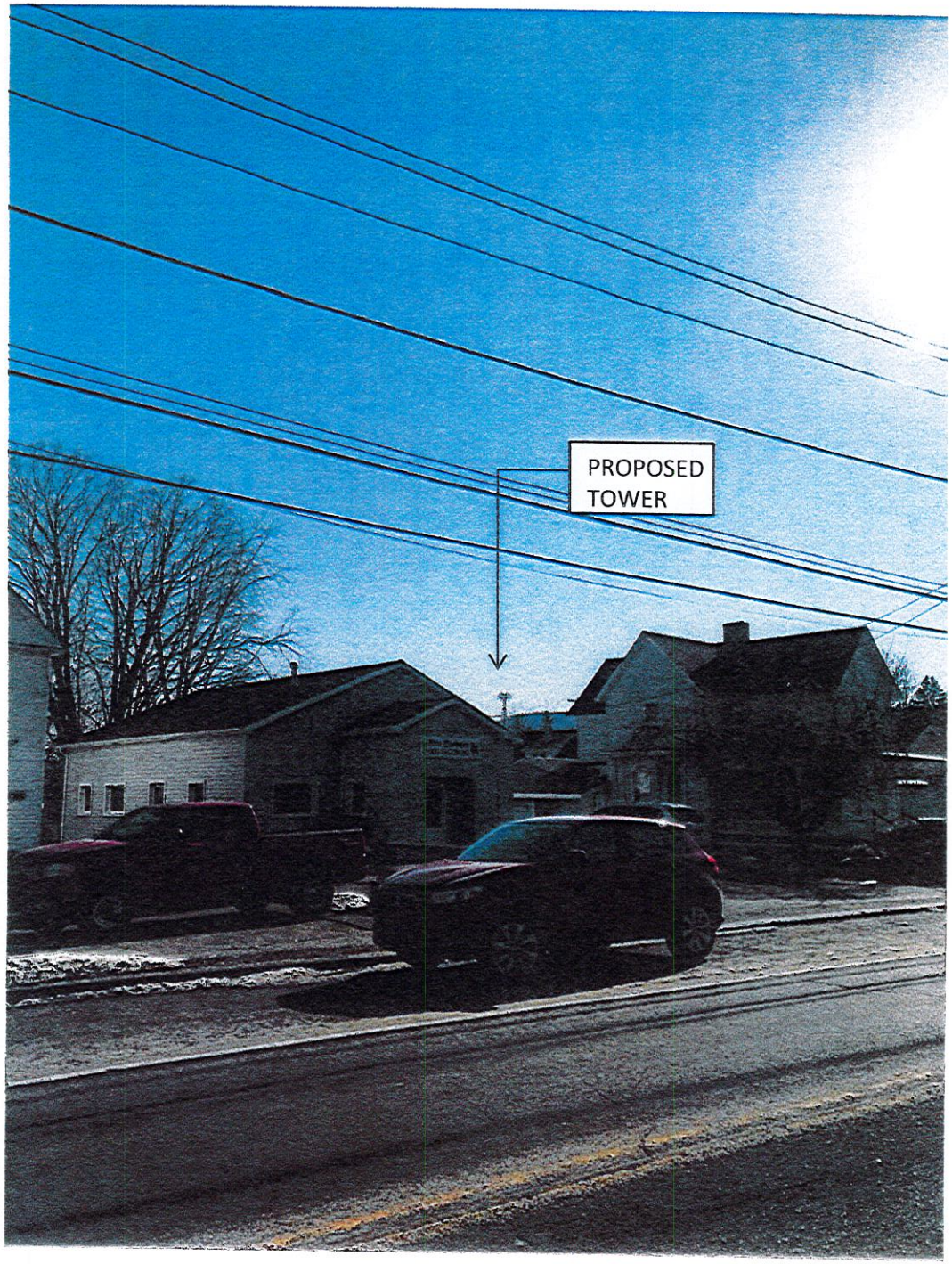
upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 35:



AFTER:
LOOKING SOUTH EAST AT SITE FROM PENNSYLVANIA AVE.

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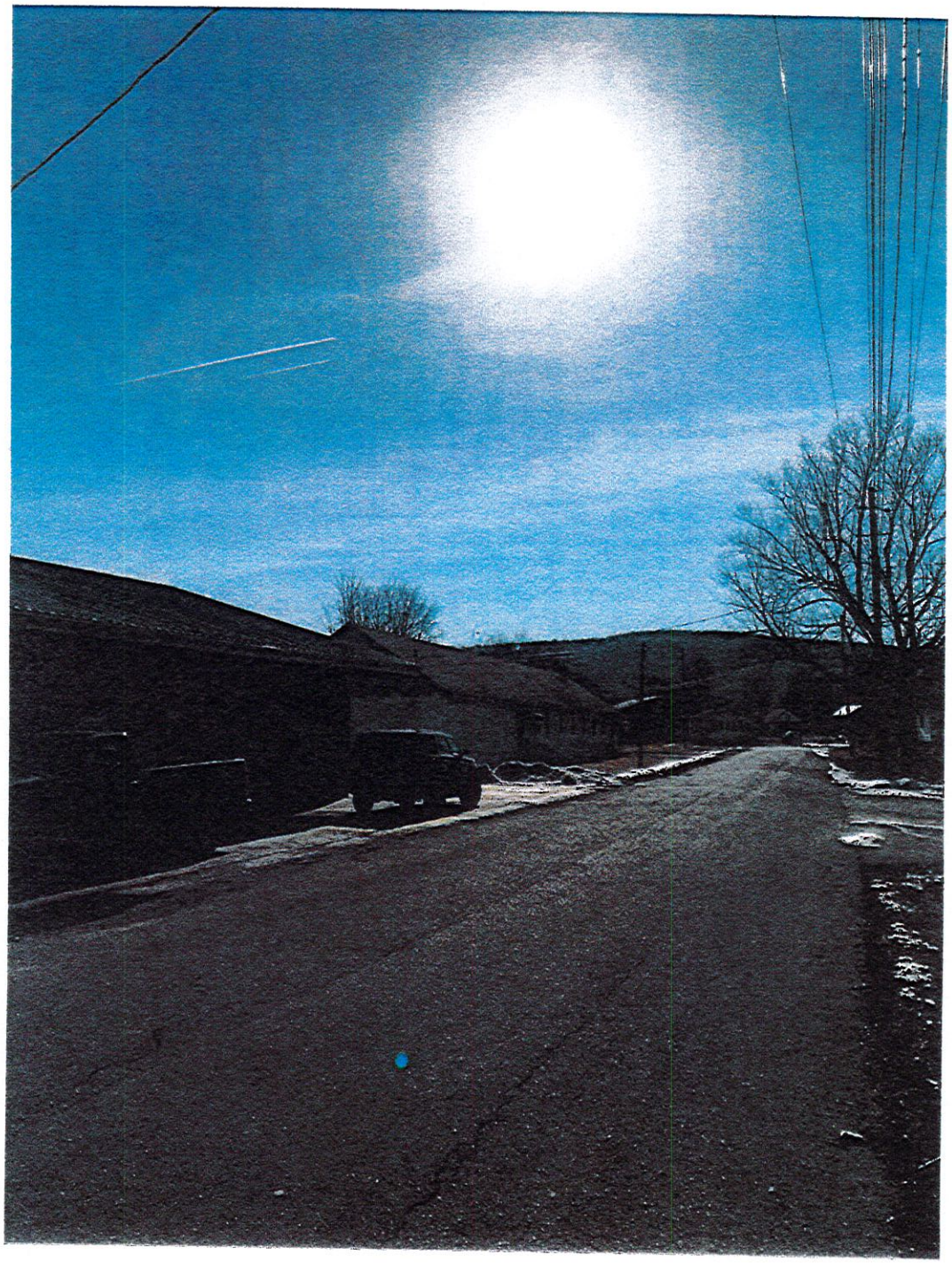
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 36:



BEFORE:
LOOKING SOUTH AT SITE
FROM S. KINYON ST.

PREPARED BY:
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PREPARED FOR:

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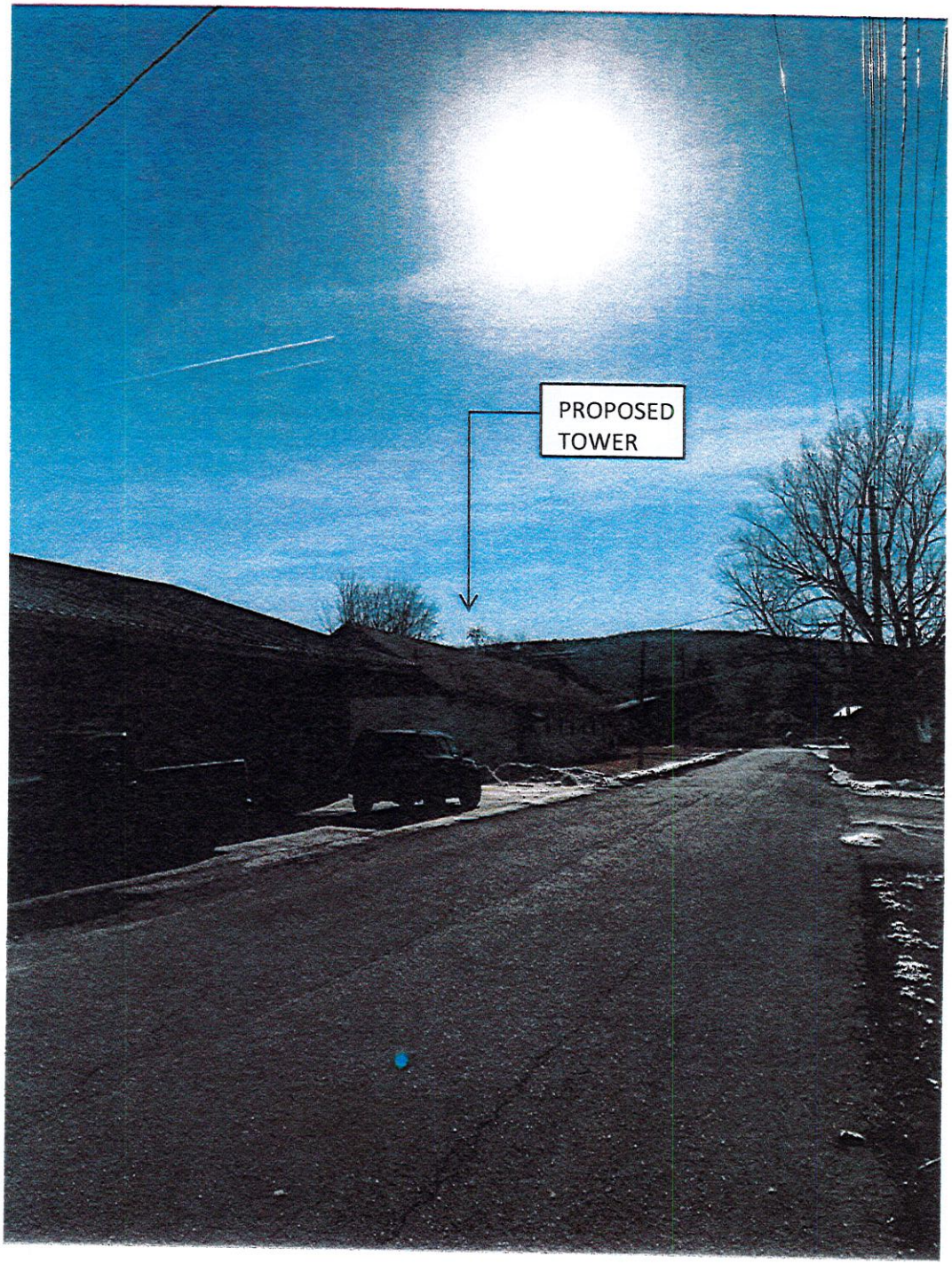
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 36:



AFTER:
LOOKING SOUTH AT SITE
FROM S. KINYON ST.

PREPARED BY:
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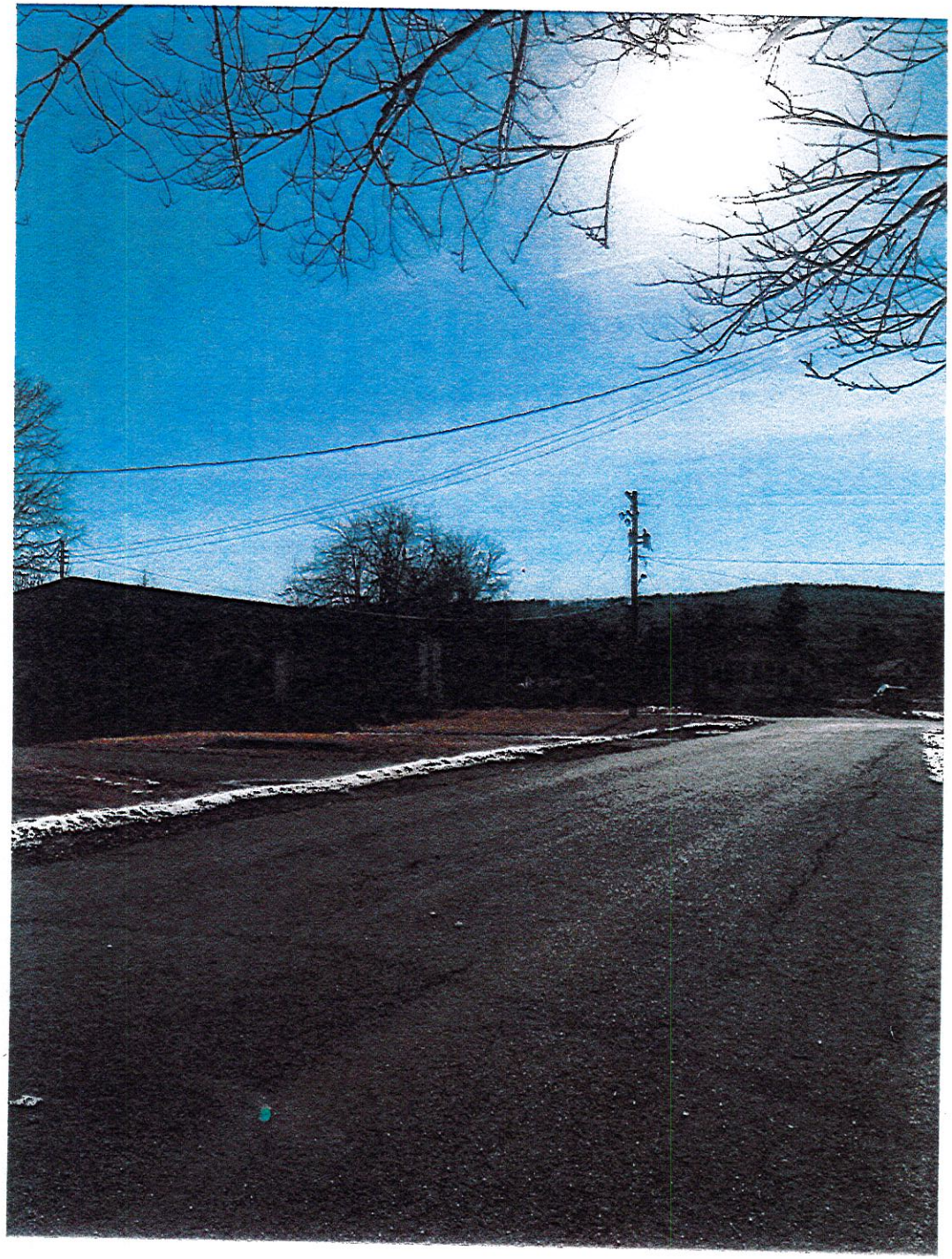
BETHESDA, MD 20814

PHOTO 37:



BEFORE:
LOOKING SOUTH AT SITE
FROM S. KINYON ST.

PREPARED BY:
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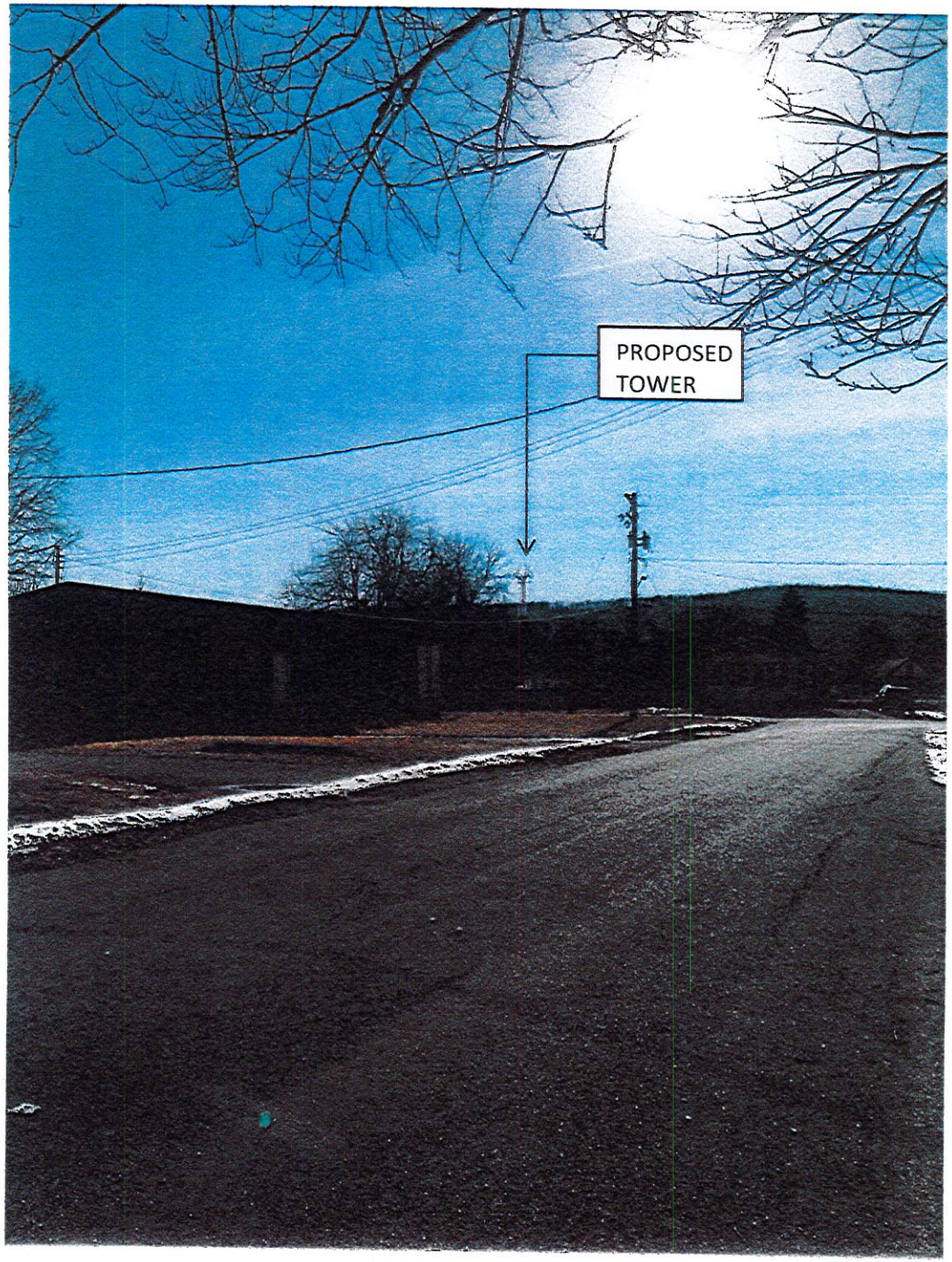
BETHESDA, MD 20814

PHOTO 37:



AFTER:
LOOKING SOUTH AT SITE
FROM S. KINYON ST.

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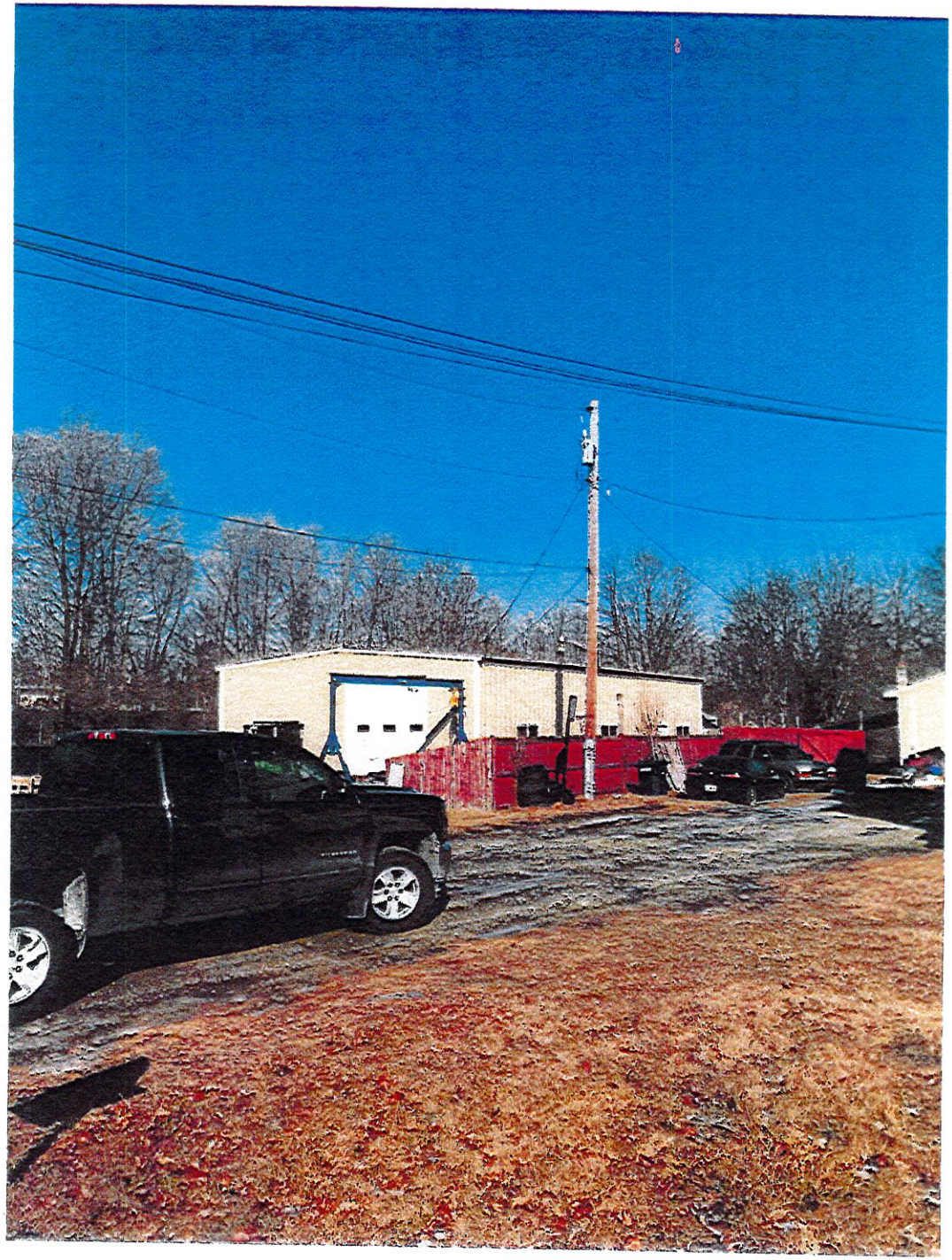
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHOTO 38:



BEFORE:
LOOKING NORTH WEST AT SITE FROM CATON AVE.

PREPARED BY:
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PREPARED FOR:

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BETHESDA, MD 20814

ELM-765 - PHOTO 4
Verizon- Holden Road

PREPARED BY:

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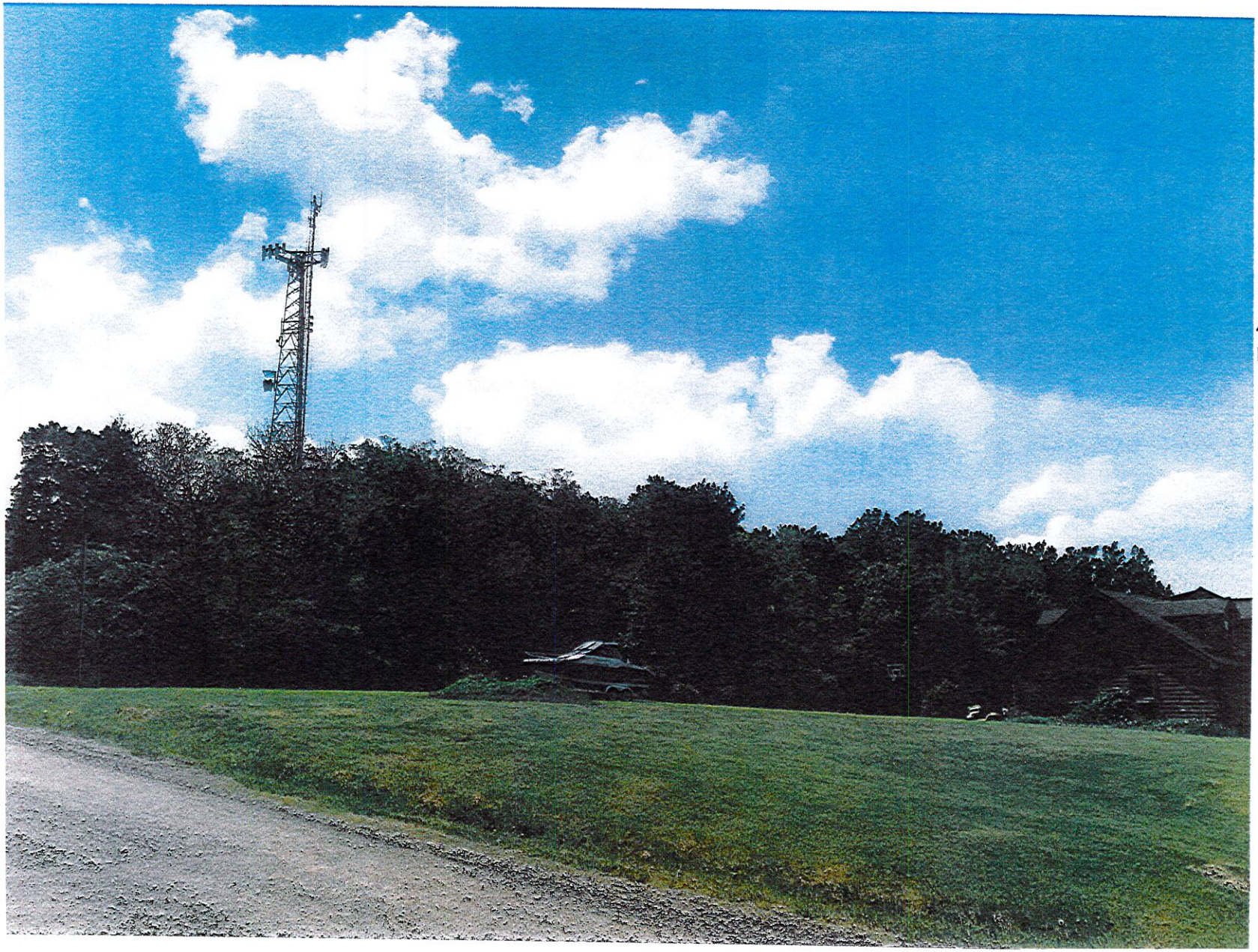
PREPARED FOR:

upstateTower

4915 AUBURN AVE. SUITE 208

BETHESDA, MD 20814

ELM-765 - PHOTO 1
Verizon – Comfort Hill Road



PREPARED BY:

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17 Industrial Street | Rochester, NY 14614

Office: 585-360-2733 | Fax: 585-360-2735

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4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

ELM-765 - PHOTO 2
Verizon – Comfort Hill Road

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PREPARED FOR:

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BETHESDA, MD 20814

ELM-765 - PHOTO 3
Verizon – Comfort Hill Road

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4915 AUBURN AVE. SUITE 208

BETHESDA, MD 20814

ELM-765 - PHOTO 4
Verizon – Comfort Hill Road

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PREPARED FOR:

upstateTower

4915 AUBURN AVE. SUITE 208

BETHESDA, MD 20814

Other Project Related Items

1. Please be advised we are not aware of any authority the New York State Department of Transportation ("NYSDOT") may have over development that occurs on adjacent property, just as a private property owner would have no authority over activities conducted by the NYSDOT on its property. In addition, telecommunications towers are common along NYS roads and highways, including the Thruway, with towers being located within the NYSDOT's right-of-way in many instances.

2. Should the applicants be required to post a bond in an amount sufficient to decommission the facility should it be unused for a time period to be determined at a later date, the applicants will address the requirement as a condition of approval to ensure that the bond amount is consistent with the final site plan to be approved by the Planning Board.

3. The construction and operation of the proposed facility will not create stormwater impacts. The facility is not subject to NYSDEC SPDES requirements, and a SWPPP is not required. During construction and grading of the facility, the applicants will install an erosion control barrier along the perimeter of the proposed access road and tower compound. Given the minor nature of earth disturbance and ground based improvements proposed, and the fact that the ground elevation is largely the same across the project site, adverse impacts from stormwater are not anticipated. Nevertheless, Up State will ensure that the installation and operation of the facility complies in all respects with applicable NYS requirements.

4. The facility will be located at the easterly terminus of Morley Place, and the applicants intend to access the site via Morley Place and Pennsylvania Avenue. Construction of the site will require the temporary use of a crane. The use of construction vehicles will not impact road surfaces in any way.

Compliance with Town of Southport Zoning Law

Chapter 525. Zoning
Article IX. Development Requirements

§ 525-109. Antennas.
A. Intent. The Town of Southport is characterized by valleys with significant ridgeline views that are for the most part unobstructed. It is the Town's intent to minimize potential visual impacts through a limitation on placement of antennas on such ridgelines or other locations where antenna location may adversely impact on important visual resources. To the maximum extent possible, an antenna shall be designed and located to reduce visual impacts from surrounding lots and roads.

The proposed wireless telecommunications facility has been sited in an Industrial area. There are no known visual or aesthetic resources within or in close proximity to the surrounding area.

B.
General requirements.
(1) No antenna of any kind may be erected in the Town except in conformance with the requirements in this section and Article IV, § 525-20, Use Regulation Table.

The present application has been submitted to comply with the requirements in the Zoning Law.

(2) In order to reduce the potential of visual impacts, all antennas shall either be co-located on an existing antenna or structure or located in close proximity to structures of similar height, unless scientific evidence is provided that the antennas cannot function adequately in all such locations.

As addressed in the accompanying exhibits, there are no towers or other structures of sufficient height within or in close proximity to the search ring that would provide a feasible opportunity for collocation by Blue Wireless to address its demonstrated gap in service. As a result, the proposed tower is necessary to enable Blue Wireless to place its antennas at a height sufficient to provide reliable service to address its coverage objectives and remedy the gap in service.

(3) Not more than one antenna shall be permitted to be installed on any residential lot that is less than 15,000 square feet in size.

The lot is zoned Industrial.

(4) Each antenna and installation thereof shall conform to applicable provisions of the New York State Uniform Fire Prevention and Building Code, National Electric Code and any other applicable federal, state or local law, rule or regulation.

No response is required.

(5) Antennas shall be installed to comply with the manufacturer's specifications and shall be secure to prevent falling or collapse.

No response is required.

(6) Antennas must be grounded for protection against a strike by lightning, in accordance with the manufacturer's recommendations.

No response is required.

(7) Satellite antennas that are three feet or less in diameter may be installed without restriction by this chapter and shall comply with the manufacturer's recommendations and any other applicable federal, state or local law, rule or regulation.

The proposed installation includes nine (9) panel antennas and three (3) microwave antennas.

C. Nonresidential use. A satellite antenna greater than three feet in diameter installed for any nonresidential use listed in Article IV, § 525-20, or located in AR, CN, CR and I Districts shall comply with the following minimum requirements:
(1) Size and height.
(a) A satellite antenna shall not exceed 30 feet in diameter.

The proposed installation includes nine (9) panel antennas and three (3) microwave antennas, none of which will exceed 30' in diameter.

(b) The total height of a ground-mounted antenna shall not exceed 35 feet above the finished grade.

The proposed antennas will be tower-mounted, not ground-mounted.

(c) Roof-mount installations of an antenna shall require a building permit, and the total height of the antenna from finished grade shall not exceed the height restrictions as set forth in Article V, § 525-24, for the zoning district within which the antenna is installed.

The proposed antennas will be tower-mounted.

(2) All antennas shall either be co-located on an existing antenna or structure or located in close proximity to structures of similar height, unless scientific evidence is provided that the antennas cannot function adequately in all such locations.

As addressed in the accompanying exhibits, there are no towers or other structures of sufficient height within or in close proximity to the search ring that would provide a feasible opportunity for antenna colocation to address Blue Wireless' gap in service. As a result, the proposed tower is necessary to enable Blue Wireless to place its antennas at a height sufficient to provide reliable service.

(3) A satellite antenna shall be located as permitted in an approved site plan.

The proposed installation includes nine (9) panel antennas and three (3) microwave antennas, none of which will exceed 30' in diameter.

D. Antennas as principal structure or use on a lot.
(1) Setback.
(a) Freestanding antennas shall be erected no nearer to a lot line than the greater of:
[1] The required setback as specified in the bulk density requirement, Article V, § 525-24;[2] or
[2] The tower height plus 1/2 the diameter of a satellite antenna or distance that any other type of antenna is installed above the tower.

A variance request from this requirement is included in this application packet. See exhibits 1 and 4, in particular.

(b) For an antenna with guy supports, the guy supports shall be installed within all minimum setbacks for the district within which the lot is located.

The proposed tower will not contain guy supports.

(2) Maximum allowable height is 120 feet unless otherwise prohibited by applicable federal, state or local law, rule or regulation.

A variance request from this requirement is included in this application packet. See exhibits 1 and 4, in particular.

E. Safety. Antenna installations shall conform to the following minimum safety requirements:
(1) The foundation and supports for the antenna shall either be designed by a design engineer or carry a manufacturer's seal and certification stating that the materials provided for the installation are approved for the size and type of antenna specified.

Tower foundation and design drawings, as well as a structural assessment report, will be provided to the Town in connection with a building permit application.

(2) At least one sign shall be posted at the base of the tower warning of high voltage and/or radiation dangers.

The installation will contain signage as required by the Federal Communications Commission.

(3) The area around an antenna, including any supports, shall be fenced in accordance with the recommendation of a design engineer.

The installation will be surrounded by a 6' chain link fence topped with 1' of barbed wire (3 strands).

(4) A tower- or antenna-climbing apparatus shall be no lower than 12 feet from finished grade.

No such apparatus will be installed below that height.

(5) Any guy supports shall be sleeved, visibly marked or entirely fenced in to a height of eight feet above the finished grade to protect against accidental impact by persons and/or animals.

No guy supports are proposed.

F. Usable signal exceptions. When it can be substantially verified that locating an antenna in conformance with this section, the antenna would be unable to receive a usable signal when compared to a signal received on a conventional receiver of a quality equal to that received from a local broadcast facility and/or cable installation, the antenna may be located in a side or front yard of the lot, subject to site plan approval.

No response is required.

upstateTower

SITE NAME
SOUTHPORT
SITE NUMBER
ELM-765B
RAW LAND

VICINITY MAP

DIRECTIONS TO SITE:

DEPART RT-5 / MAIN ST TOWARD ROCK ST. TAKE RAMP RIGHT FOR I-290 E / YOUNGMANN EXPY. AT EXIT 1-49, TAKE RAMP LEFT FOR I-90 EAST TOWARD ALBANY. AT EXIT 48, TAKE RAMP RIGHT FOR RT-98 TOWARD BATAVIA. TURN LEFT ONTO RT-98. TURN LEFT ONTO RT-33 / RT-5 / RT-63 / W MAIN ST. KEEP RIGHT TO STAY ON RT-63 / ELLICOTT ST. BEAR RIGHT ONTO US-20A / RT-63 / RT-39 / MT MORRIS RD. KEEP LEFT ONTO RT-63 / MT MORRIS RD. BEAR RIGHT ONTO RT-408. TAKE RAMP LEFT FOR I-390 S. KEEP STRAIGHT ONTO I-86 E / RT-17 E / SOUTHERN TIER EXPY. AT EXIT 56, TAKE RAMP RIGHT FOR RT-352 TOWARD ELMIRA / HOSPITAL / JERUSALEM HILL. TURN RIGHT ONTO RT-352 W / E CHURCH ST. TURN LEFT ONTO RT-14 / CLEMENS CENTER PKWY. TURN RIGHT ONTO RT-427 / CEDAR ST. TURN RIGHT ONTO PENNSYLVANIA AVE. TURN RIGHT ONTO MORLEY PL.

PROJECT INDEX

PROJECT INFORMATION

1. PROJECT ADDRESS: 511 BUDD STREET, ELMIRA, NY 14904
2. PROJECT TAX ACCOUNT NO.: 109.07-5-45
3. ZONING JURISDICTION: TOWN OF SOUTHPORT
4. ZONING DISTRICT: (I) INDUSTRIAL DISTRICT

FACILITY INFORMATION

FACILITY TYPE: 160' SELF-SUPPORT TOWER
PROPOSED USE:UNATTENDED TELECOMMUNICATIONS FACILITY: (1-2) VISITS PER MONTH BY TECHNICIAN

ANTENNA ℄ HEIGHT
(9) PANEL ANTENNAS: 160'±
(3) MW ANTENNAS: 160'±

EXISTING TOWER LOCATION:
LAT: 42.061897°
LONG: -76.805192°
GROUND ELEV: 865'±

REFERENCES

1. A SURVEY OF THE PROPERTY WAS PERFORMED BY MAGDE LAND SURVEYING, P.C. ON JULY 19, 2017

CONSULTANT TEAM

PROJECT DIRECTORY

PROPERTY OWNER: ADDRESS:	BUDD STREET PROPERTIES LLC. 61 COMBS HILL ROAD PINE CITY, NY 14871	CONTACT: JANE JACK TELE.: (607) 725-9313
PROJECT MANAGER: ADDRESS:	UP STATE TOWER CO LLC 4915 AUBURN AVE. SUITE 208 BETHESDA, MD 20814	CONTACT: BRIAN GELFAND TELE.: (716) 605-9500
CIVIL ENGINEER: ADDRESS:	CARPENTER CONSULTING GROUP 17 INDUSTRIAL STREET ROCHESTER, NEW YORK 14614	CONTACT: DON CARPENTER TELE.: (585)-370-9516

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.	REV. DATE
T-1	TITLE SHEET	0	9/21/17
S-1	SITE SURVEY	0	7/19/17
C-1	OVERALL SITE PLAN	0	9/21/17
C-2	SITE PLAN	0	9/21/17
C-3	GRADING PLAN	0	9/21/17
C-4	ELEVATION	0	9/21/17
C-5	SITE DETAILS	0	9/21/17
C-6	SITE DETAILS	0	9/21/17
G-1	GROUNDING PLAN	0	9/21/17

upstateTower
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www.carpentercg.com

DESIGNED BY:	DATE:
DRB	9/20/17
APPROVED BY:	A&E PROJECT #:
DWC	16-B-028

PLAN REVISIONS

NO.	DATE	DESCRIPTION	BY
0	9/21/17	ISSUED FOR REVIEW	DRB

STATE OF NEW YORK
DMITRIY V. ALBUL
089075
LICENSED PROFESSIONAL ENGINEER
12/12/2017

SITE NUMBER:	ELM-765B
SITE NAME:	SOUTHPORT
SITE ADDRESS:	511 BUDD STREET ELMIRA, NY 14904
SITE TYPE:	RAW LAND
SHEET TITLE:	TITLE SHEET
DRAWING #:	T-1
REVISION:	0

SURVEY NOTES:

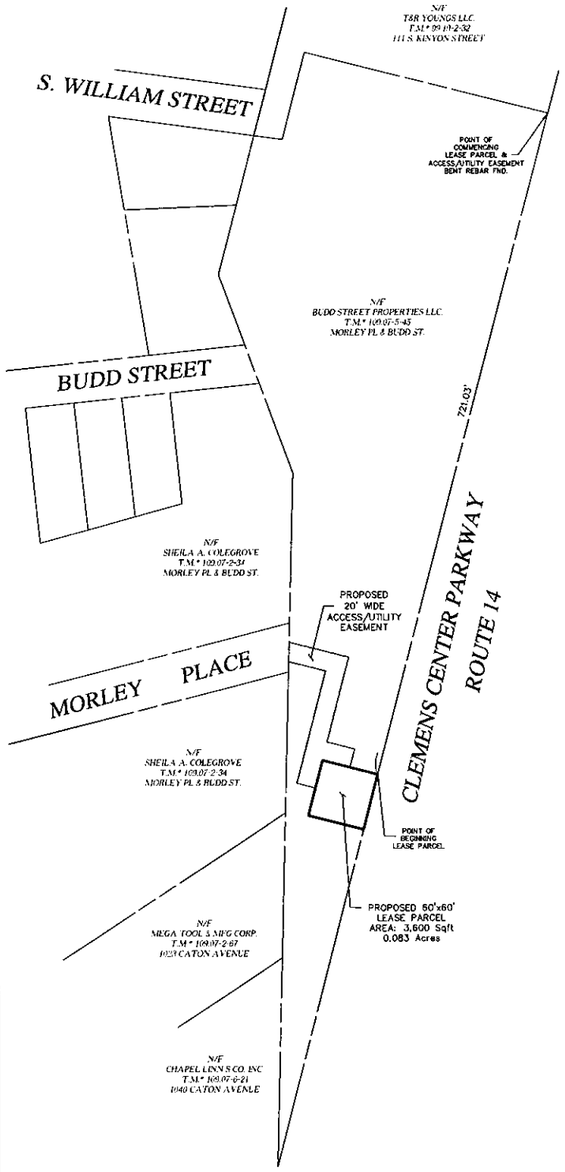
THE HORIZONTAL DATUM (NAD 1983) TO THE N.Y.S. PLANE COORDINATE SYSTEM, CENTRAL ZONE, TRANSVERSE MERCATOR SYSTEM. BEARINGS SHOWN HEREON ARE REFERENCED TO GRID. DISTANCE SHOWN ARE GROUND. SURVEY WORK FOR THIS MAP WAS COMPLETED TO AN ACCURACY OF 1 PART IN 10,000 (1:10,000) OR BETTER.

ELEVATIONS ARE REFERENCED TO NAVD 1988

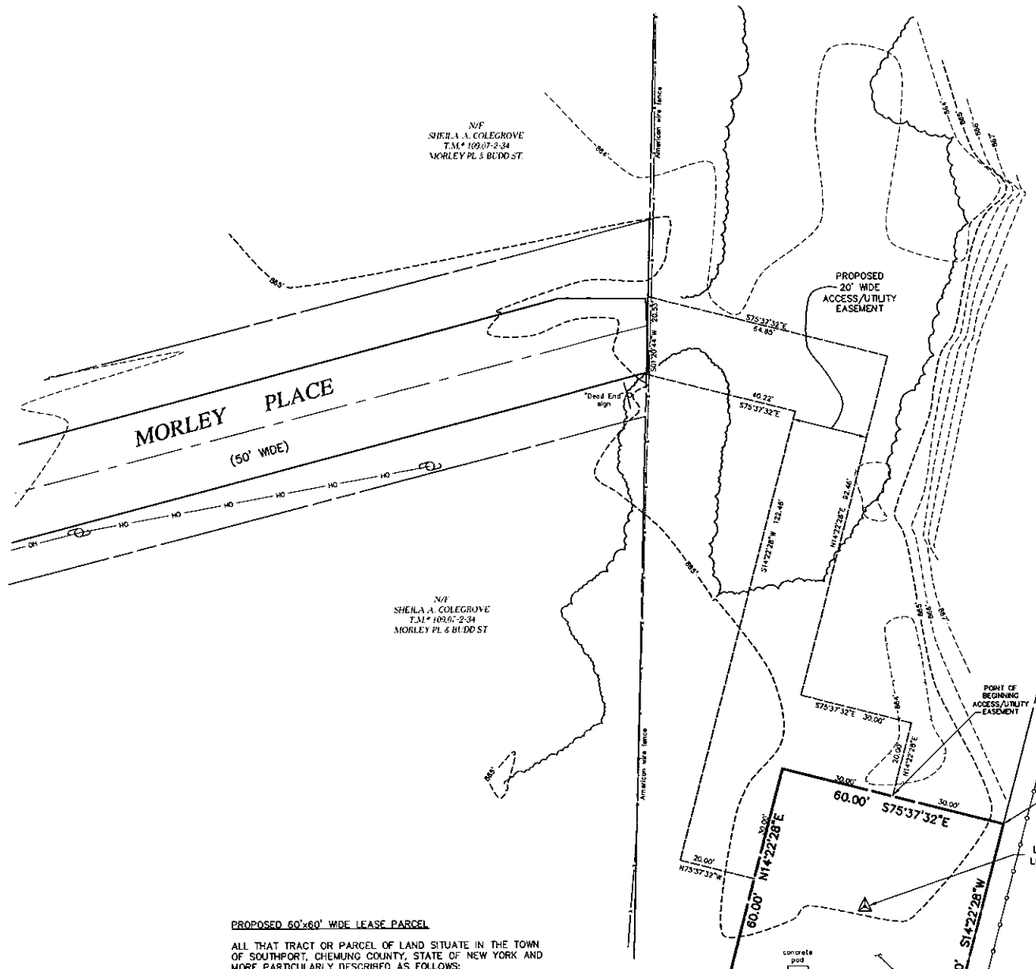
GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



OVERALL SITE VIEW
SCALE: 1"=80 FT



PROPOSED 60'x60' WIDE LEASE PARCEL

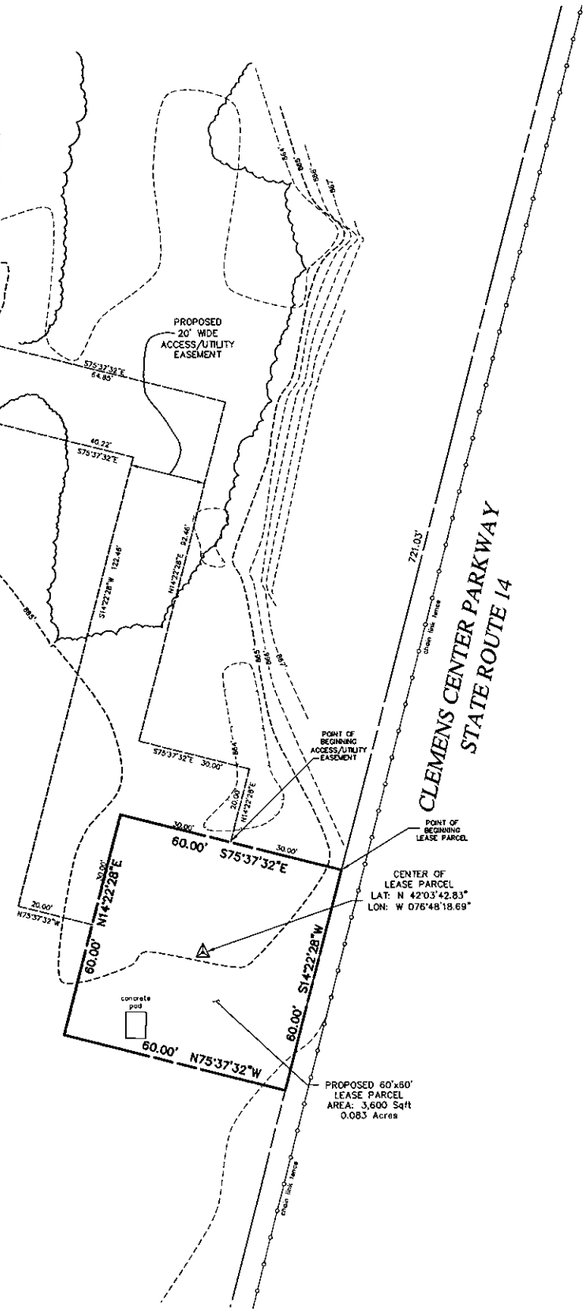
ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE TOWN OF SOUTHPORT, CHEMUNG COUNTY, STATE OF NEW YORK AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

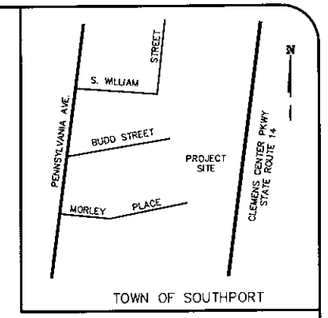
COMMENCING AT A BENT REBAR FOUND IN THE NORTHEAST CORNER OF LANDS OF EIGER INC., AS RECORDED IN THE CHEMUNG COUNTY CLERKS OFFICE IN LIBER 701 OF DEEDS, PAGE 582, THENCE;

a) S14°22'28"W, ALONG THE WEST HIGHWAY BOUNDARY LINE OF CLEMENS CENTER PARKWAY, A DISTANCE OF 721.03' TO THE TRUE POINT OF BEGINNING; THENCE,

1) S14°22'28"W, ALONG THE WEST HIGHWAY BOUNDARY LINE OF CLEMENS CENTER PARKWAY, A DISTANCE OF 60.00' TO A POINT; THENCE,
2) N75°37'32"W, A DISTANCE OF 60.00' TO A POINT; THENCE,
3) N14°22'28"E, A DISTANCE OF 60.00' TO A POINT; THENCE,
4) S75°37'32"E, A DISTANCE OF 60.00' TO THE PLACE AND POINT OF BEGINNING

BEING 3,600 SQFT., 0.083 ACRES OF LAND.





LOCATION SKETCH
N.T.S.

PROPOSED 20' WIDE ACCESS & UTILITY EASEMENT

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE TOWN OF SOUTHPORT, CHEMUNG COUNTY, STATE OF NEW YORK AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A BENT REBAR FOUND IN THE NORTHEAST CORNER OF LANDS OF EIGER INC., AS RECORDED IN THE CHEMUNG COUNTY CLERKS OFFICE IN LIBER 701 OF DEEDS, PAGE 582, THENCE;

a) S14°22'28"W, ALONG THE WEST HIGHWAY BOUNDARY LINE OF CLEMENS CENTER PARKWAY, A DISTANCE OF 721.03' TO A POINT IN THE NORTHEAST CORNER OF A LEASE PARCEL; THENCE,
b) N75°37'32"W, ALONG THE NORTH LINE OF A LEASE PARCEL, A DISTANCE OF 30.00' TO THE TRUE POINT OF BEGINNING; THENCE,

1) N75°37'32"W, ALONG THE AFORESAID NORTH LINE, A DISTANCE OF 30.00' TO A POINT IN THE NORTHWEST CORNER OF A LEASE PARCEL; THENCE,
2) S14°22'28"W, ALONG THE WEST LINE OF A LEASE PARCEL, A DISTANCE OF 30.00' TO A POINT; THENCE,
3) N75°37'32"W, A DISTANCE OF 20.00' TO A POINT; THENCE,
4) N14°22'28"E, A DISTANCE OF 122.46' TO A POINT; THENCE,
5) N75°37'32"W, A DISTANCE OF 40.22' TO A POINT IN THE EASTERLY HIGHWAY BOUNDARY LINE OF MORLEY PLACE; THENCE,
6) N01°20'44"E, ALONG THE AFORESAID EAST LINE, A DISTANCE OF 20.53' TO A POINT; THENCE,
7) S75°37'32"E, A DISTANCE OF 64.85' TO A POINT; THENCE,
8) S14°22'28"W, A DISTANCE OF 92.46' TO A POINT; THENCE,
9) S75°37'32"E, A DISTANCE OF 30.00' TO A POINT; THENCE,
10) S14°22'28"W, A DISTANCE OF 20.00' TO THE PLACE AND POINT OF BEGINNING

BEING 4,300 SQFT., 0.099 ACRES OF LAND.

STATE OF NEW YORK
DOUGLAS W. MAGDE
NO. 049957
Licensed Land Surveyor

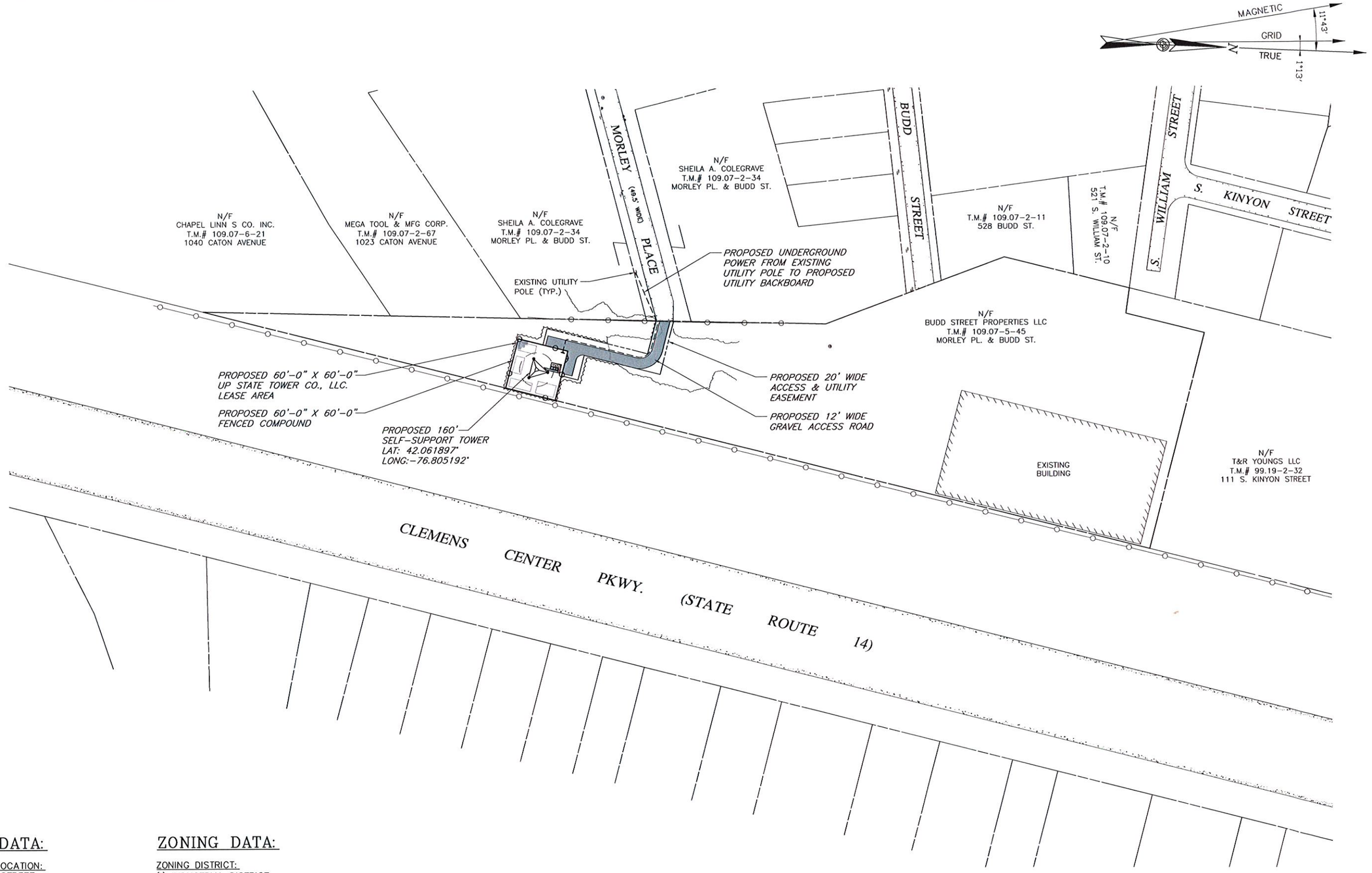
WE, MAGDE LAND SURVEYING, P.C., HEREBY CERTIFY THAT THIS MAP WAS PREPARED FROM NOTES OF A FIELD SURVEY COMPLETED ON JULY 19, 2017 AND FROM THE REFERENCES LISTED HEREON. SUBJECT TO ANY FACTS AN UPDATED ABSTRACT OF TITLE MAY REVEAL.

DOUGLAS W. MAGDE, L.S. LIC. #049957

SITE SURVEY MAP
PREPARED FOR
SITE: SOUTHPORT
SITE No: ELM-765B
#511 BUDD STREET
TOWN OF SOUTHPORT, CHEMUNG COUNTY, NEW YORK

MAGDE LAND SURVEYING, P.C.
4460 CULVER ROAD ** ROCHESTER ** NEW YORK ** 14622
(585) 654 - 5897 ** (585) 654 - 6149 (FAX) ** email: dmagde@magdesurvey.com

MAGDE SURVEYING



SITE DATA:

PROJECT LOCATION:
511 BUDD STREET

PROPERTY OWNER:
BUDD STREET PROPERTIES LLC.
61 COMBS HILL ROAD
PINE CITY, NY 14871

TAX ACCOUNT #:
109.07-5-45

ZONING DATA:

ZONING DISTRICT:
(I) INDUSTRIAL DISTRICT

LOT REQUIREMENTS:

	REQUIRED	PROPOSED
FRONT SETBACK	*	47.59'
SIDE SETBACK	* *	390.86' 737.71'
REAR SETBACK	*	18.5'
MIN. LOT AREA	*	3.94 ACRES
MIN. LOT WIDTH	*	1,148.09'

(*) – PER SITE PLAN REVIEW

OVERALL SITE PLAN

SCALE: 1"=60' (22X34)
1"=120' (11X17)

GRAPHIC SCALE

60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

LEGEND

- SECTION/PARCEL BOUNDARY
- PROPOSED EASEMENT LINE
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST. RIGHT-OF-WAY LINE
- EXIST. EDGE OF PAVEMENT
- BARBED WIRE,STOCKADE,CHAIN LINK
- EXISTING BUILDING

upstateTower
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www.carpentercg.com

DESIGNED BY:	DATE:
DRB	9/20/17
APPROVED BY:	A&E PROJECT #:
DWC	16-B-028

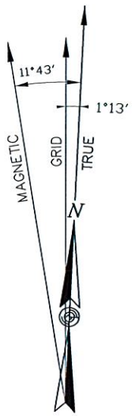
PLAN REVISIONS

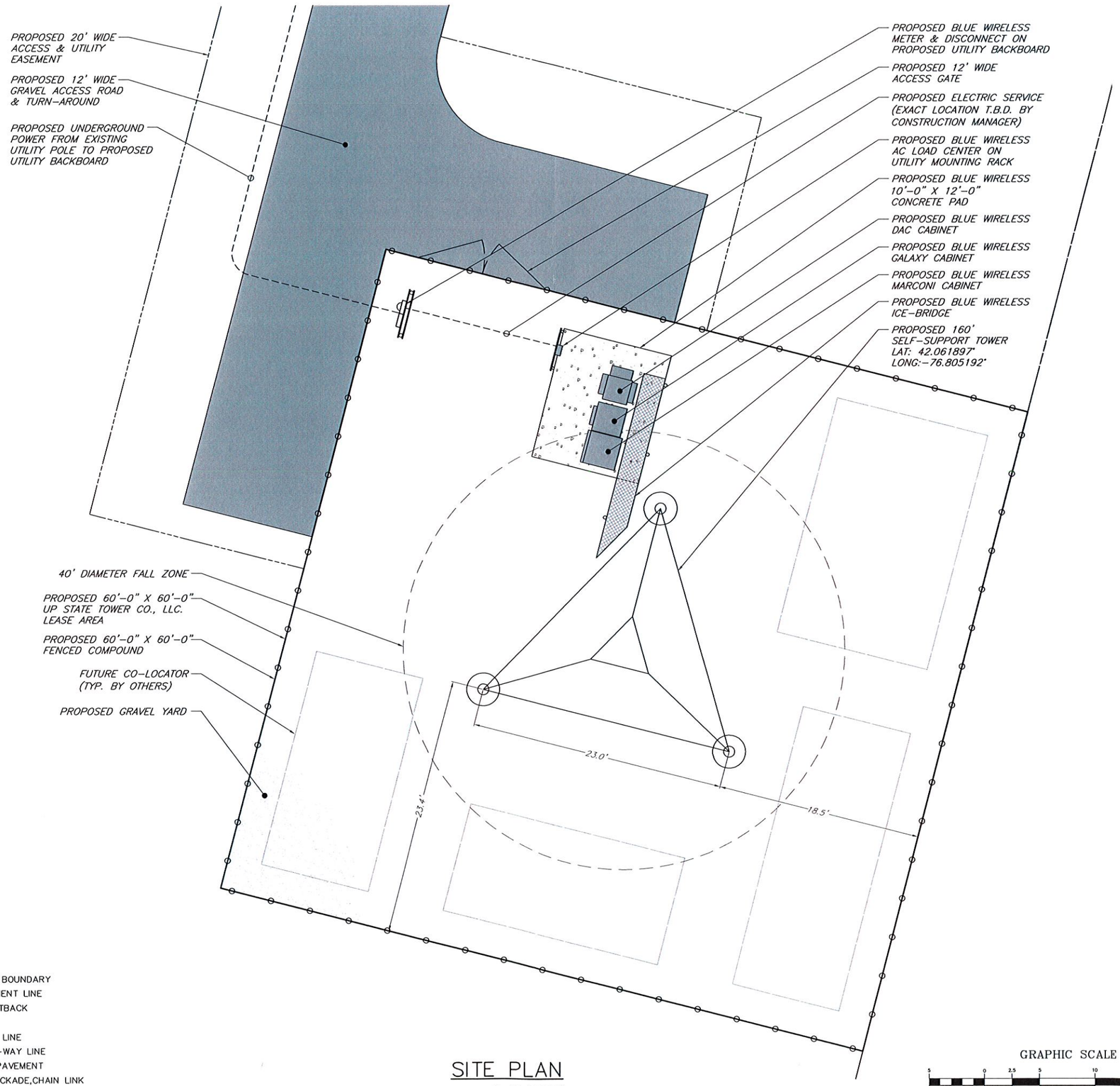
NO.	DATE	DESCRIPTION	BY
0.	9/21/17	ISSUED FOR REVIEW	DRB

STATE OF NEW YORK
DMITRIY V. ALBUL
089075
LICENSED PROFESSIONAL ENGINEER
12/12/2017

SITE NUMBER: ELM-765B
SITE NAME: SOUTHPORT
SITE ADDRESS: 511 BUDD STREET ELMIRA, NY 14904
SITE TYPE: RAW LAND

SHEET TITLE: OVERALL SITE PLAN
DRAWING #: C-1
REVISION: 0





SITE PLAN

SCALE: 1"=5' (22X34)
1"=10' (11X17)

GRAPHIC SCALE

5 0 2.5 5 10 20

(IN FEET)
1 inch = 5 ft.

LEGEND

- SECTION/PARCEL BOUNDARY
- PROPOSED EASEMENT LINE
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST. RIGHT-OF-WAY LINE
- EXIST. EDGE OF PAVEMENT
- BARBED WIRE, STOCKADE, CHAIN LINK
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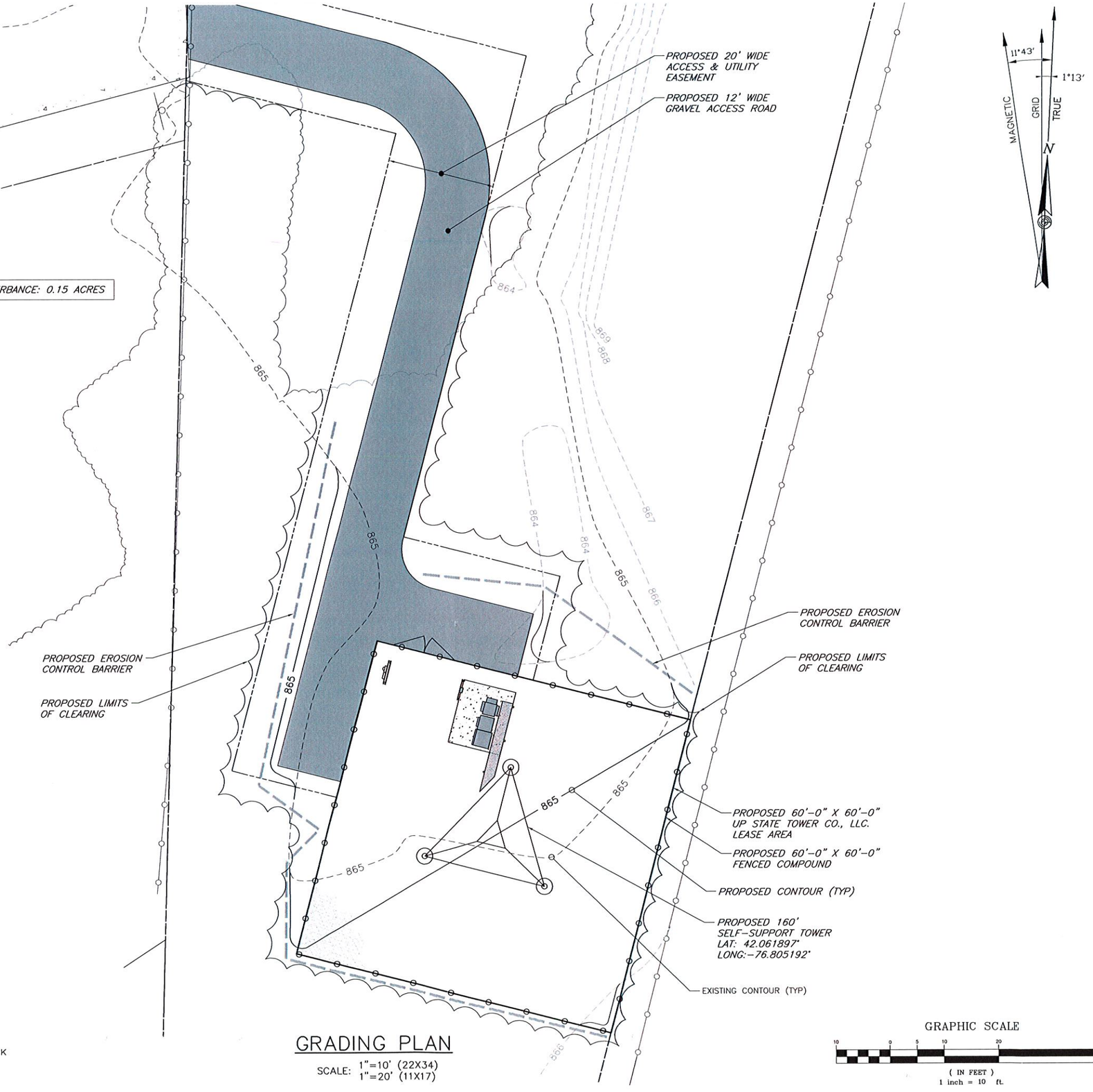
LICENSED PROFESSIONAL ENGINEER

12/12/2017

SITE NUMBER:	ELM-765B
SITE NAME:	SOUTHPORT
SITE ADDRESS:	511 BUDD STREET ELMIRA, NY 14904
SITE TYPE:	RAW LAND
SHEET TITLE:	SITE PLAN
DRAWING #:	C-2
REVISION:	0



GRADING PLAN

SCALE: 1"=10' (22X34)
1"=20' (11X17)

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

LEGEND

- SECTION/PARCEL BOUNDARY
- PROPOSED EASEMENT LINE
- MIN. BUILDING SETBACK
- CENTER LINE
- EXIST. EASEMENT LINE
- EXIST. RIGHT-OF-WAY LINE
- EXIST. EDGE OF PAVEMENT
- BARBED WIRE,STOCKADE,CHAIN LINK
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STATE OF NEW YORK
DMITRIY V. ALBUL
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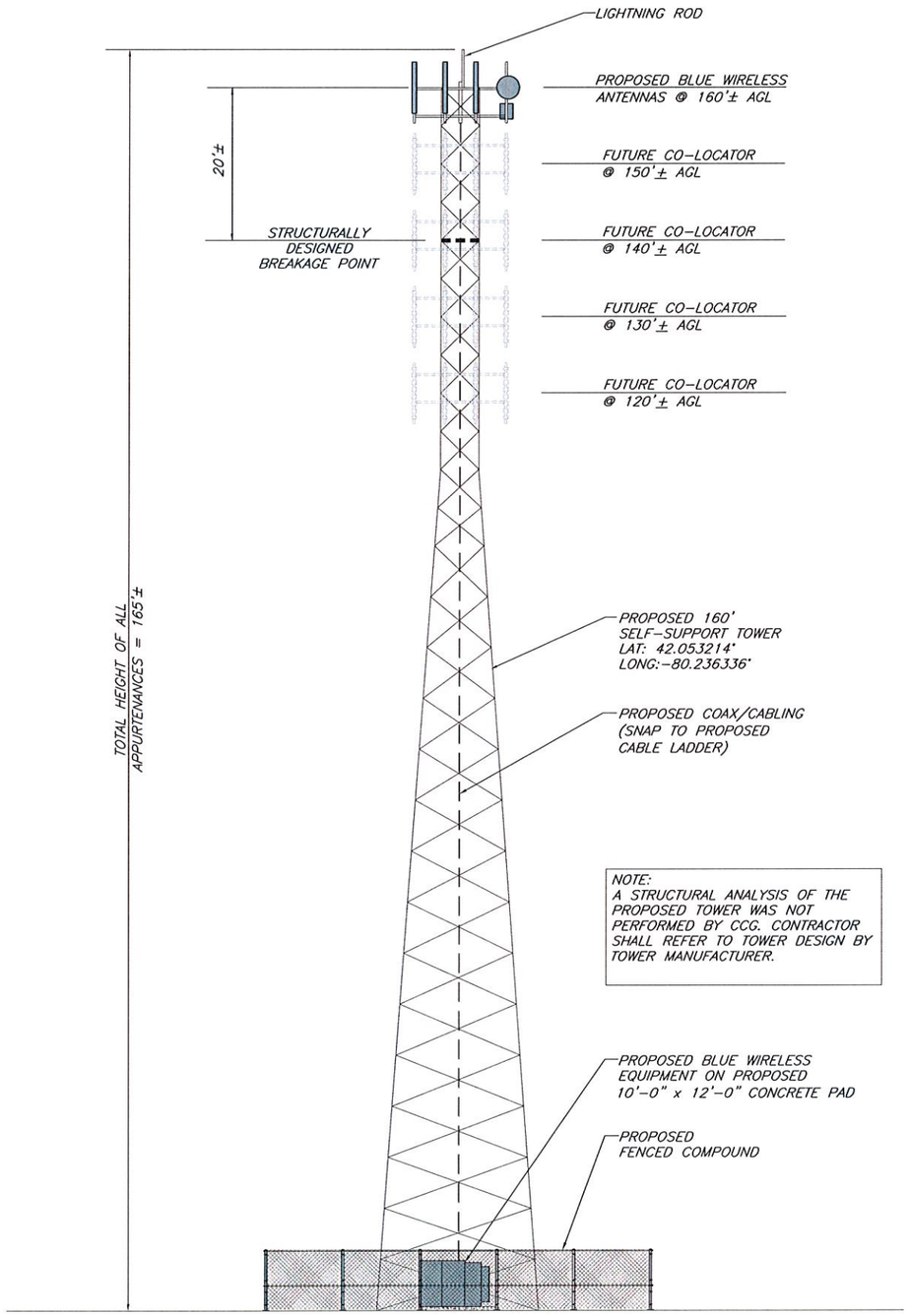
LICENSED PROFESSIONAL ENGINEER
12/12/2017

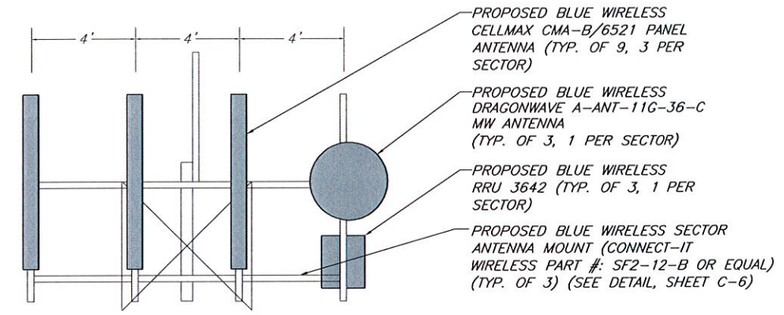
SITE NUMBER:	ELM-765B
SITE NAME:	SOUTHPORT
SITE ADDRESS:	511 BUDD STREET ELMIRA, NY 14904
SITE TYPE:	RAW LAND
SHEET TITLE:	GRADING PLAN
DRAWING #:	C-3
REVISION:	0



TOWER ELEVATION

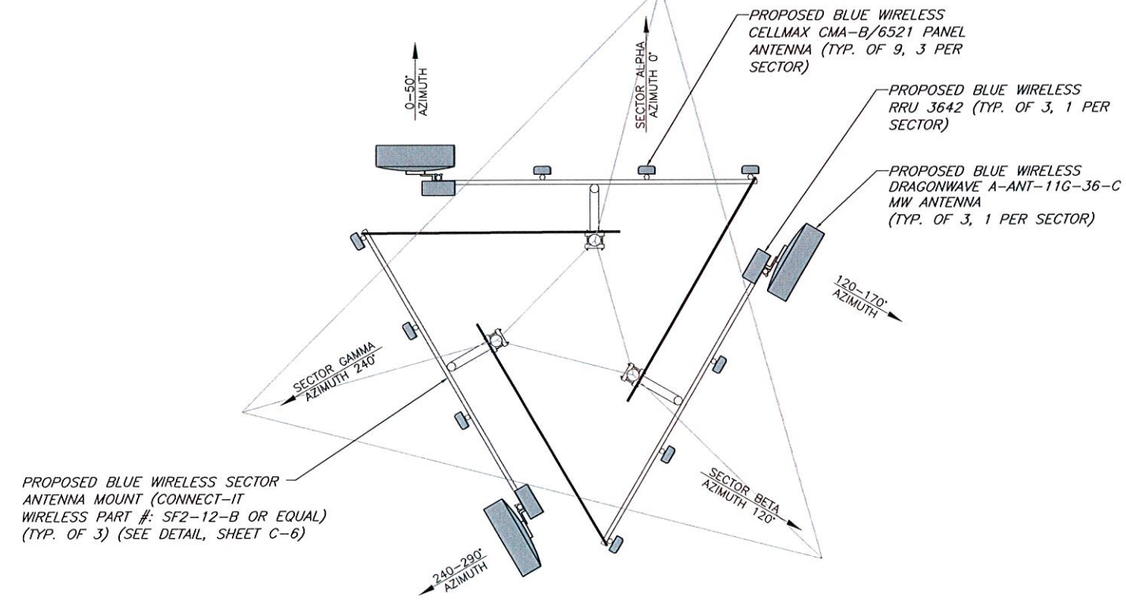
SCALE: 1"=10' (22x34)
1"=20' (11x17)

PROPOSED ANTENNA CONFIGURATION AND CABLE SCHEDULE						
SECTOR	ANTENNA	ANTENNA ℄ HEIGHT	AZIMUTH	RRU	CABLE TYPE	CABLE LENGTH
ALPHA	(3) CMA-B/6521 (1) A-ANT-11G-36-C	160' AGL	0°	(1)	(2) 1-5/8" COAX (1) 1" FIBER BUNDLE (1) 3/8" COAX	190'±
BETA	(3) CMA-B/6521 (1) A-ANT-11G-36-C	160' AGL	120°	(1)	(2) 1-5/8" COAX (1) 1" FIBER BUNDLE (1) 3/8" COAX	190'±
GAMMA	(3) CMA-B/6521 (1) A-ANT-11G-36-C	160' AGL	240°	(1)	(2) 1-5/8" COAX (1) 1" FIBER BUNDLE (1) 3/8" COAX	190'±



ANTENNA SECTOR VIEW

SCALE: 1"=3' (22x34)
1"=6' (11x17)



PROPOSED ANTENNA CONFIGURATION

SCALE: 1"=3' (22x34)
1"=6' (11x17)

upstateTower
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PLAN REVISIONS

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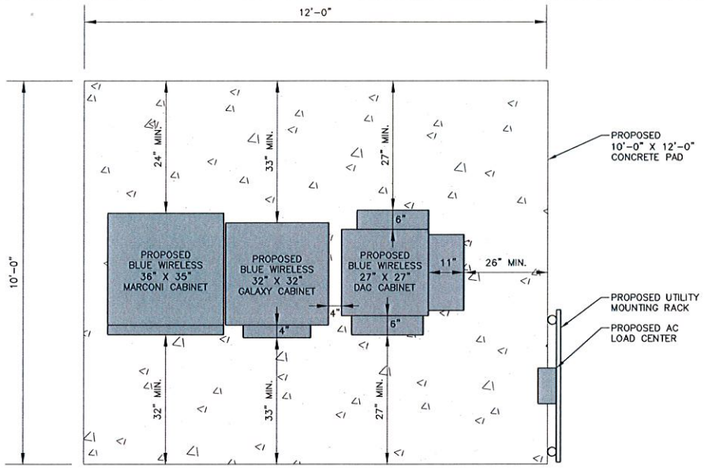
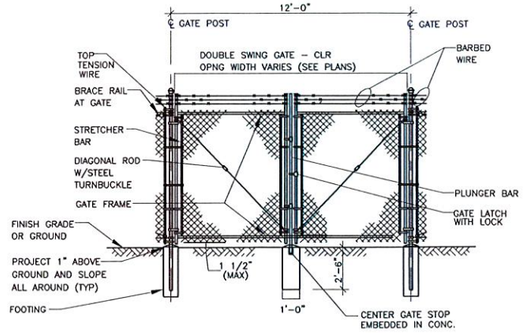
STATE OF NEW YORK
DMITRIY V. ALBUL
089075
LICENSED PROFESSIONAL ENGINEER
12/12/2017

SITE NUMBER:	ELM-765B
SITE NAME:	SOUTHPORT
SITE ADDRESS:	511 BUDD STREET ELMIRA, NY 14904
SITE TYPE:	RAW LAND
SHEET TITLE:	ELEVATION
DRAWING #:	C-4
REVISION:	0



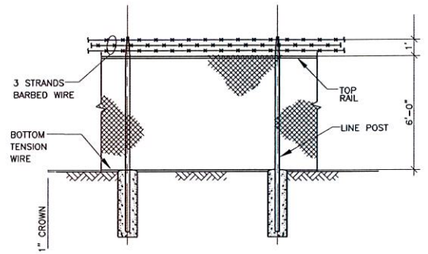
EQUIPMENT LAYOUT DETAIL

N.T.S.



WOVEN WIRE SWING GATE, DOUBLE

N.T.S.



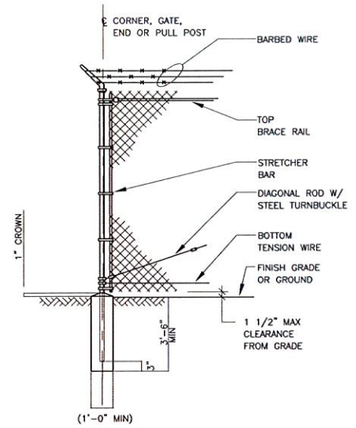
TYPICAL ELEVATION

N.T.S.

TYPICAL WOVEN WIRE FENCING NOTES:

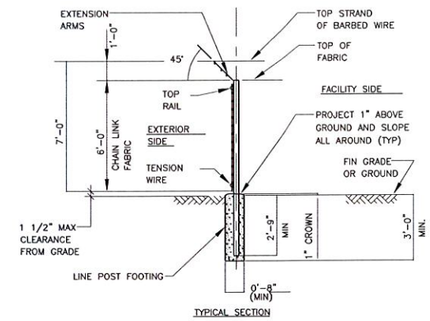
(INSTALL FENCING PER ASTM F-567, SWING GATES PER ASTM F-900)

1. GATE POST, CORNER, TERMINAL OR PULL POST 2 1/2"ø SCHEDULE 40 FOR GATE POST WIDTHS UP THRU 6 FEET FOR DOUBLE SWING GATE PER ASTM-F-1083.
2. LINE POST: 2"ø SCHEDULE 40 PIPE PER ASTM-F1083.
3. TOP RAIL & BRACE RAIL: 1 1/2"ø SCHEDULE 40 PIPE PER ASTM-F1083.
4. FABRIC: 12 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
5. TIE WIRE: MIN. 11 GA. GALVANIZED STEEL AT POSTS AND RAILS, A SINGLE WRAP OF FABRIC, TIE AND TENSION WIRE BY HOG RINGS,SPACE AT MAX 24" INTERVALS.
6. TENSION WIRE: 7 GA. GALVANIZED STEEL.
7. BARBED WIRE: DOUBLE STRAND 12-1/2" O.D. TWISTED WIRE TO MATCH W/ FABRIC 14 GA. 4 PT. BARBS SPACED ON APPROXIMATELY 5" CENTERS.
8. LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLIED WITH IF REQUIRED.
9. HEIGHT: 6' VERTICAL + 1' BARBED WIRE VERTICAL DIMENSION.



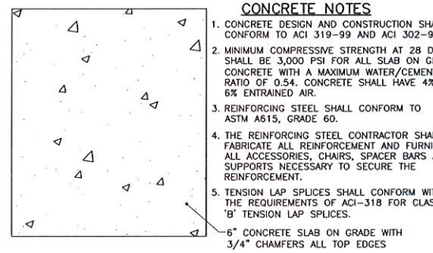
WOVEN WIRE CORNER, GATE, END OR PULL POST

N.T.S.



WOVEN WIRE FENCE DETAIL

N.T.S.

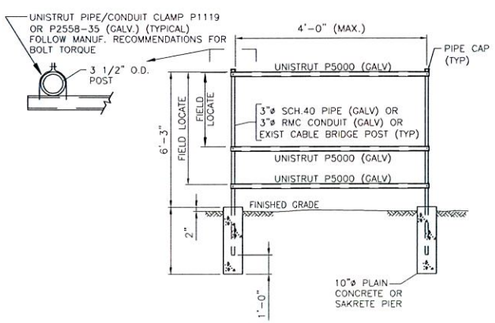


IF THE SOIL HAS POOR DRAINAGE, CONSTRUCT A GRAVEL DRAINAGE BED UNDER THE CONCRETE PAD. WATER WILL DRAIN THROUGH A 1IN HOLE IN THE GenCore FLOOR THROUGH A 3IN HOLE IN THE CONCRETE TO THE DRAINAGE BED. THE GenCore CAN PRODUCE UP TO 4.3 LITERS OF WATER PER HOUR; SIZE THE DRAINAGE BED ACCORDINGLY FOR THE LOCAL CLIMATE.

(VERIFY DIMENSIONS WITH GENERATOR SUPPLIER)

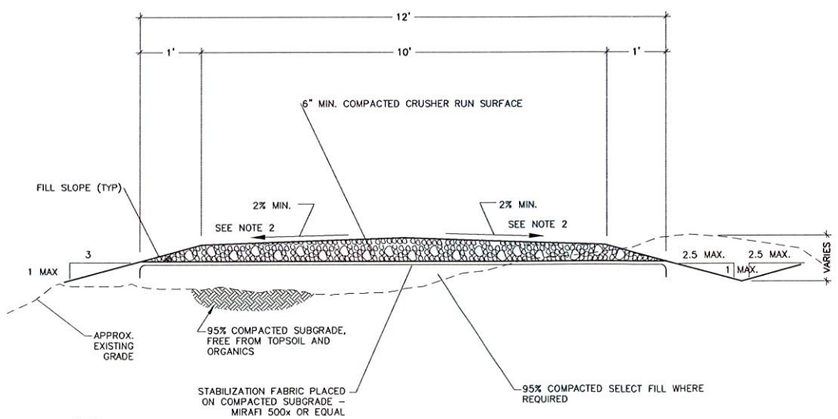
CONCRETE EQUIPMENT PAD DETAIL

N.T.S.



UTILITY MOUNTING RACK

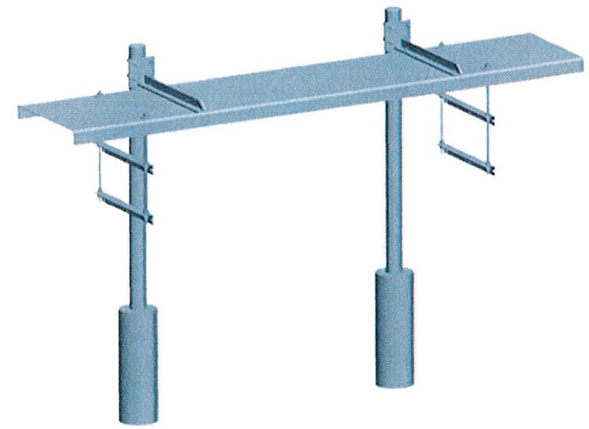
N.T.S.



NOTE:
1. CONTRACTOR SHALL VERIFY DITCH LOCATIONS (IF REQUIRED) WITH SITE GRADING PLANS.
2. ROAD CROSS SECTION VARIES. CONTRACTOR SHALL REVIEW GRADING PLAN FOR CROSS SLOPE AREAS. MAINTAIN A MINIMUM 2% CROSS SLOPE.

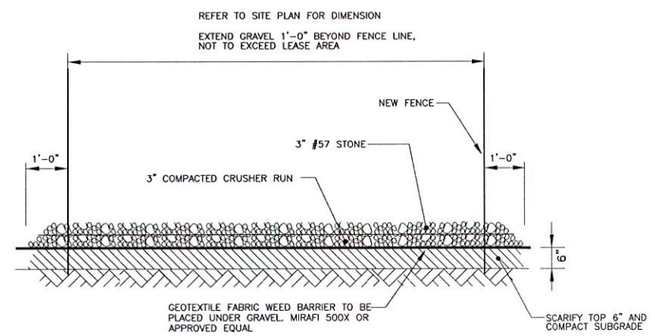
DRIVEWAY SECTION (IF REQUIRED)

N.T.S.



TWO FOOT WAVEGUIDE ICE-BRIDGE CONNECT-IT WIRELESS PART #: EWGB210

N.T.S.



NOTES:
1. REMOVE TOP 6 INCHES OF GRADE FROM COMPOUND.
2. SCARIFY TOP 6 INCHES AND COMPACT SUBGRADE.

SITE COMPOUND GRAVEL DETAIL (IF REQUIRED)

N.T.S.

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814
PHONE: 301-907-2484
FAX: 301-907-9021

CCG CARPENTER CONSULTING GROUP
DEVELOPMENT DESIGN
RESIDENTIAL | COMMERCIAL | WIRELESS | ENERGY
17 Industrial Street | Rochester, NY 14614
Office: 585-360-2733 | Fax: 585-360-2735
www.carpentercg.com

DESIGNED BY:	DATE:
DRB	9/20/17
APPROVED BY:	A&E PROJECT #:
DWC	16-B-028

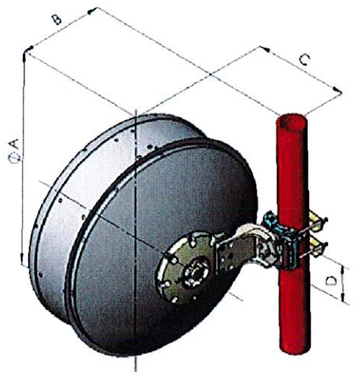
PLAN REVISIONS

NO.	DATE	DESCRIPTION	BY
0.	9/21/17	ISSUED FOR REVIEW	DRB

STATE OF NEW YORK · DMITRIY V. ALBUL · 089075 · LICENSED PROFESSIONAL ENGINEER

12/12/2017

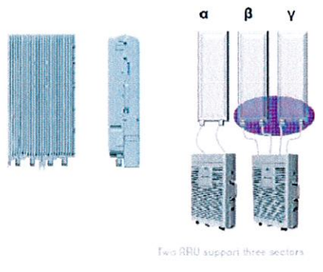
SITE NUMBER:	ELM-765B
SITE NAME:	SOUTHPORT
SITE ADDRESS:	511 BUDD STREET ELMIRA, NY 14904
SITE TYPE:	RAW LAND
SHEET TITLE:	SITE DETAILS
DRAWING #:	C-5
REVISION:	0



ANTENNA DIAMETER	A	B	C	D
3 FEET	39.4 IN.	17.5 IN.	23.1 IN.	6.3 IN.

3' MICROWAVE ANTENNA
DRAGONWAVE PART
#: A-ANT-11G-36-C

N.T.S.



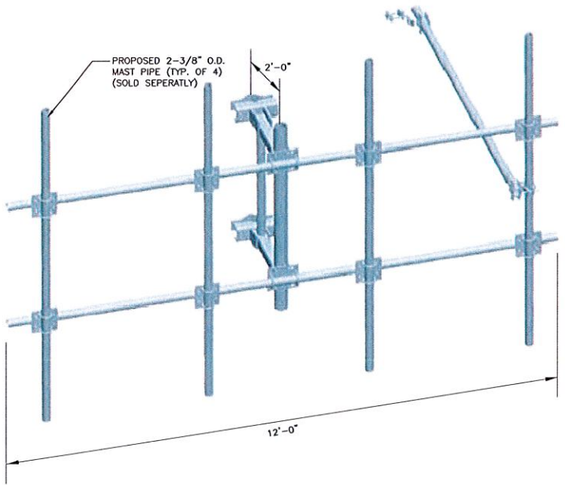
Specification	
Frequency	•PCS (band 2) CDMA/LTE Dual Mode •850M CDMA/LTE Dual Mode
Carrier Bandwidth	1.4/3/5/10/15/20Mhz
IBW	PCS : 40MHz TX(60Mhz RX) 850M : 25MHz
Output Power	2*60W
Size	24L: 480×366×140mm w/o cover 31L: 465×380×170mm with cover
Weight	23.5kg w/o cover; 24Kg with cover
Receiver Sensitivity	-106dBm (AWGN, 1RX, 25 RBs, QPSK 1/3 code rate)
Configuration	1 sector of 1T2R/2T2R/2T4R or 2 sector of 1T2R

RRU 3642 DETAIL

N.T.S.

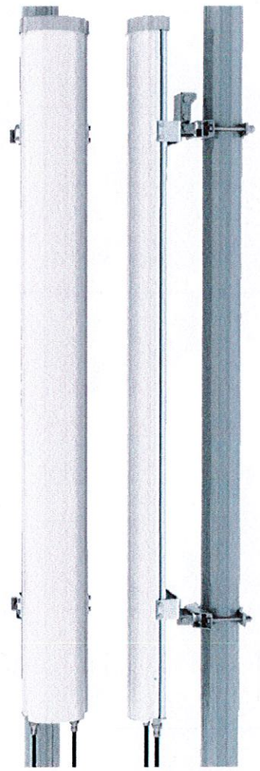
ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (EDITION ACCEPTED BY LOCAL JURISDICTION) AND APPLICABLE LOCAL CODES.
2. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
5. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE SOLID TIN-COATED WIRE FOR BELOW GRADE GROUNDING UNLESS NOTED OTHERWISE.
6. CONDUCTORS SHALL BE INSTALLED IN GALVANIZED RIGID STEEL CONDUIT, SCHEDULE 40 PVC, FLEXIBLE LIQUIDTIGHT CONDUIT, EMT OR IMC AS INDICATED.
7. OBTAIN ALL PERMITS, PAY PERMIT FEES, AND SCHEDULE INSPECTIONS.
8. OBTAIN LOCAL POWER COMPANY APPROVAL AND COORDINATE WITH UTILITY COMPANIES SERVICE ENTRANCE REQUIREMENTS.
9. PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THIS DRAWING, AND ALL ITEMS INCIDENTAL TO COMPLETING AND PRESENTING THIS PROJECT AS FULLY OPERATIONAL.



ANTENNA SECTOR FRAME
CONNECT-IT WIRELESS PART #: SF2-12-B

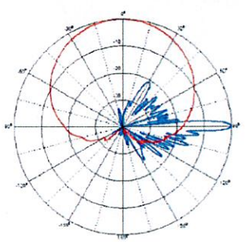
N.T.S.



CMA-B/6521

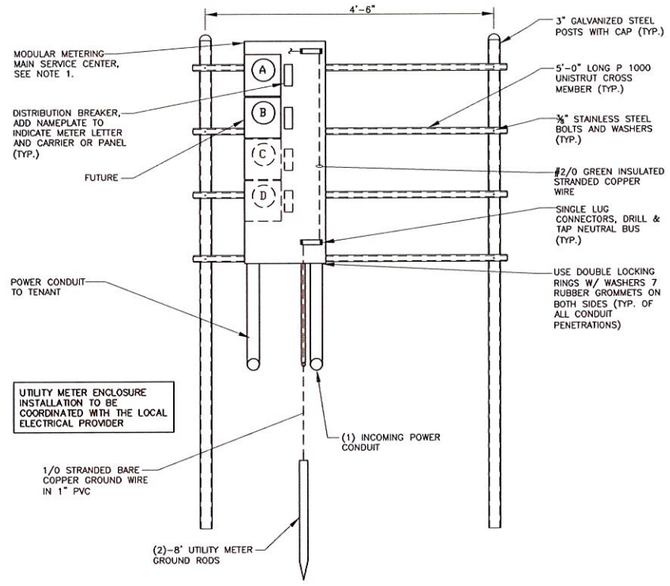
GSM / CDMA: 1800, 1900 & 2100

Electrical specification:		
Frequency range	1800:	1710-1880 MHz
	1900:	1850-1990 MHz
	2100:	1920-2170 MHz
Polarization		Dual linear ±45°
Gain	1800:	2 x 20.6 dBi
	1900:	2 x 21.0 dBi
	2100:	2 x 21.5 dBi
Horizontal = 3 dB beamwidth		65° ±3°
Vertical = 3 dB beamwidth	1800:	4.6° ±0.3°
	1900:	4.2° ±0.2°
	2100:	3.9° ±0.3°
Fixed electrical downtilt		0°, 2°, 4°, and 6°
VSWR	1800:	<1.5:1
	1900:	<1.4:1
	2100:	<1.4:1
Isolation between inputs		>30 dB
Front to back ratio		>25 dB
First upper sidelobe suppression		>18 dB
First nullfill below horizon		<20 dB
Cross-polar discrimination		>20 dB
Inter modulation, IM3 (GSM)		>153 dBc @ 2x43 dBm
Inter modulation, IM7 (UMTS)		>163 dBc @ 2x43 dBm
Antenna Efficency*		95 %
Nominal impedance		50 Ω
Max power per input		500 W
Mechanical specification:		
Connectors		2 x 7/16 female
Connector position		Bottom
Lightning protection		DC grounded
Height/Width/Depth mm (in)		2060 (81)/196 (7.7)/92 (3.6)
Antenna weight		13 kg (29 lb)
Wind load at 42 m/s (94 mph) :	Frontal	440 N (99 lbf)
	Lateral:	140 N (31 lbf)
	Rear:	610 N (137 lbf)
Survival wind speed		60 m/s (134 mph)
Colour radome		Light Grey, RAL 7035
Radome material		ASA
Mounting hardware:		
Mounting bracket		2
Bracket weight (complete)		4.5 kg (10 lb)
Pole diameter		45-120 mm (1.8-4.7 in)
Tilt bracket		0°-4° mechanical



PANEL ANTENNA CELLMAX PART #: CMA-B/6521

N.T.S.

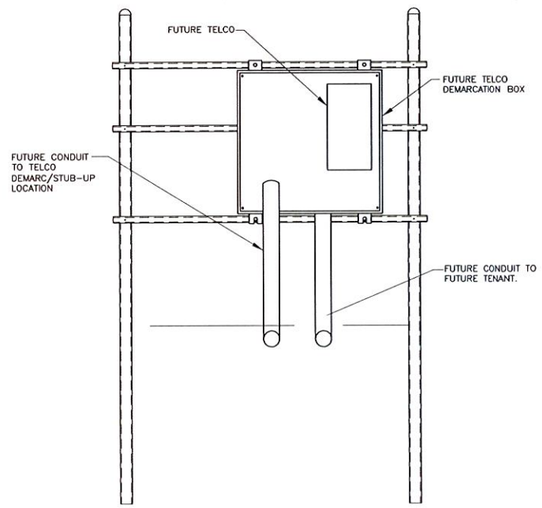


SERVICE BACKBOARD (FRONT VIEW)

N.T.S.

NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL MODULAR METERING MAIN SERVICE CENTER, NEMA 3R (SQUARE D OR EQUAL). METER CENTER SHALL BE FURNISHED WITH (1) 200 AMP TENANT METER AND (1) 200 AMP TENANT CIRCUIT BREAKER TO FEED TENANT EQUIPMENT. COORDINATE SERVICE SIZE AND NUMBER OF METER SOCKETS WITH CONSTRUCTION MANAGER. SPARE METER SOCKETS AND CIRCUIT BREAKERS TO BE COVERED WITH LEXAN.



SERVICE BACKBOARD (BACK VIEW)

N.T.S.

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814
PHONE: 301-907-2484
FAX: 301-907-9021

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DESIGNED BY:	DATE:
DRB	9/20/17
APPROVED BY:	A&E PROJECT #:
DWC	16-B-028

PLAN REVISIONS

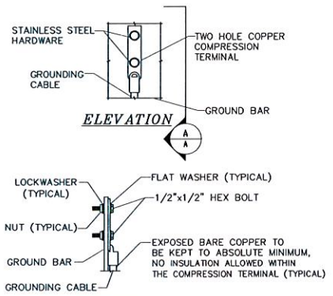
NO.	DATE	DESCRIPTION	BY
0.	9/21/17	ISSUED FOR REVIEW	DRB

STATE OF NEW YORK
DMITRIY V. ALBUL
089075
LICENSED PROFESSIONAL ENGINEER

12/12/2017

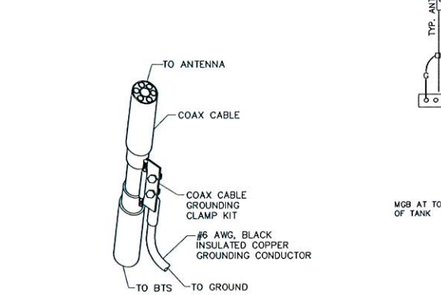
SITE NUMBER:	ELM-765B
SITE NAME:	SOUTHPORT
SITE ADDRESS:	511 BUDD STREET ELMIRA, NY 14904
SITE TYPE:	RAW LAND
SHEET TITLE:	SITE DETAILS
DRAWING #: C-6	REVISION: 0

COAX CABLE GROUNDING
N.T.S.

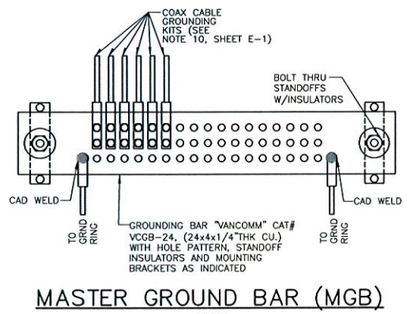


NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS

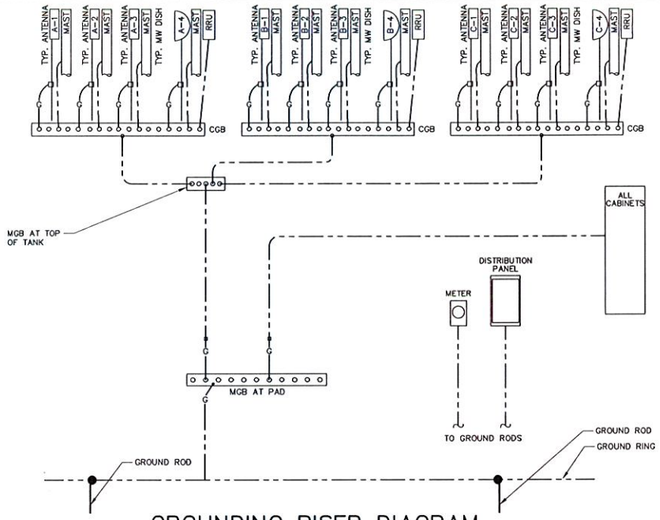
GROUND BAR CONNECTIONS
N.T.S.



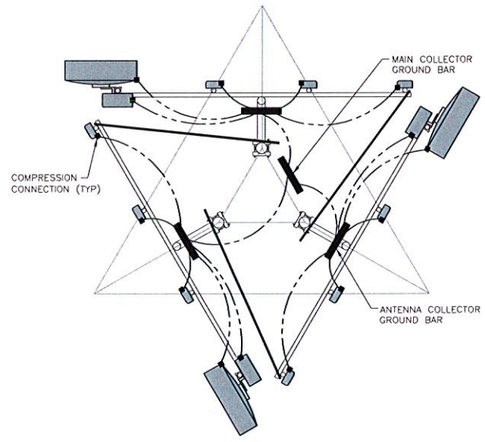
COLLECTOR GROUND BAR (CGB)
N.T.S.



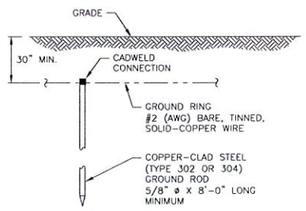
MASTER GROUND BAR (MGB)
N.T.S.



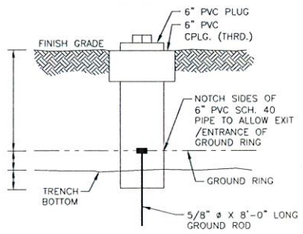
GROUNDING RISER DIAGRAM
N.T.S.



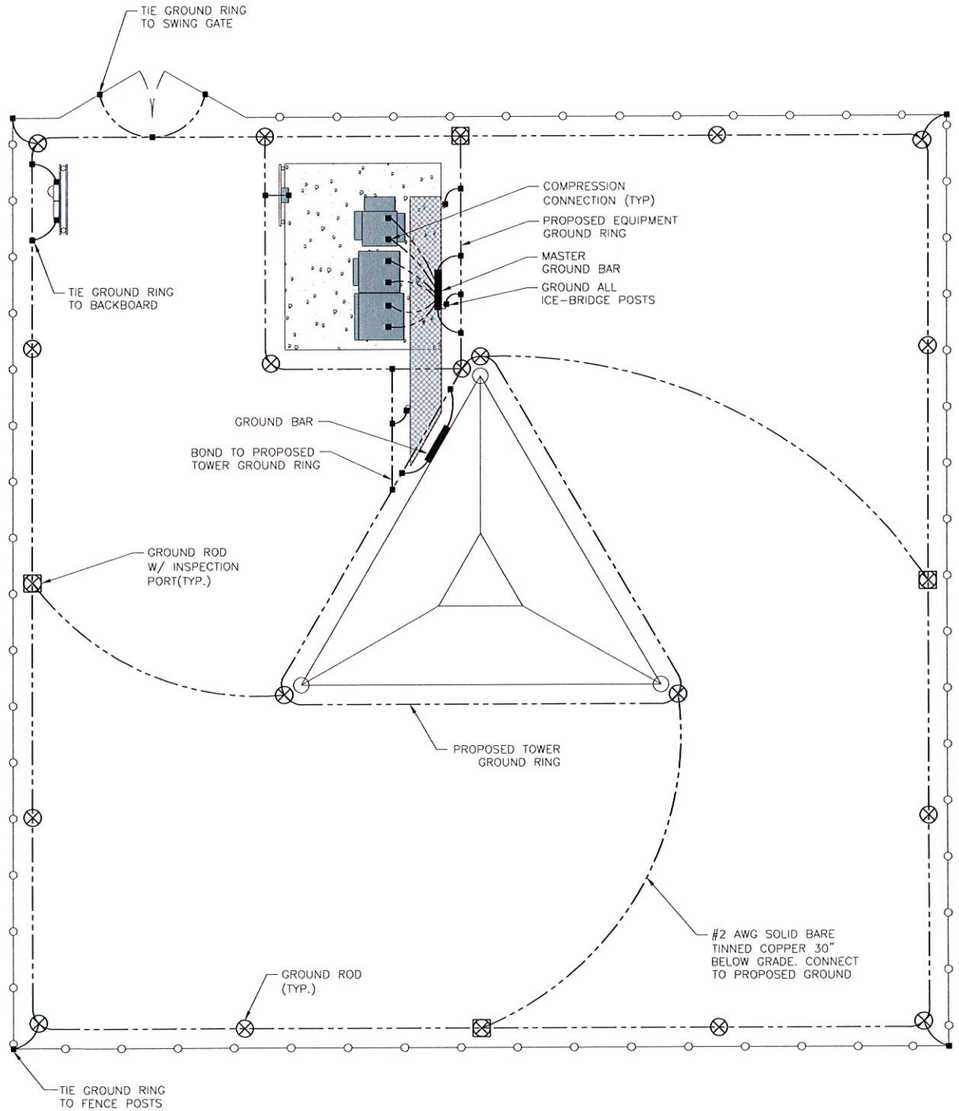
TYP. ANTENNA GROUNDING
N.T.S.



GROUND ROD
N.T.S.



INSPECTION PORT
N.T.S.



GROUNDING PLAN
SCALE: 1"=4' (22X34)
1"=8' (11X17)

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1 inch = 4 ft.

GROUNDING NOTES

1. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO FENCE POSTS, MONOPOLE AND GROUND RODS STEEL AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
2. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
3. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
4. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS UNIFORMLY SPACED AROUND CELL SITE. THE GROUND RODS SHALL BE 5/8" x 8'-0" COPPER CLAD STEEL, INTERCONNECTED WITH #2 AWG BARE SOLID WIRE BURIED 30" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM 8' APART.
5. PROVIDE GROUND RODS AND GROUND RING AS SHOWN ON SITE PLAN AND GROUNDING RISER DIAGRAM. TEST AND VERIFY THAT THE IMPEDANCE DOES NOT EXCEED 5 OHMS TO GROUND USING EARTH GROUND RESISTANCE TESTER. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY THE OWNER'S REPRESENTATIVE.

LEGEND

- GROUND WIRE
- CADWELD CONNECTION
- GROUND ROD
- GROUND ROD WITH INSPECTION PORT
- GROUND BAR

upstateTower
4915 AUBURN AVE. SUITE 208
BETHESDA, MD 20814

PHONE: 301-907-2484
FAX: 301-907-9021

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www.carpentercg.com

DESIGNED BY:	DATE:
DRB	9/20/17
APPROVED BY:	A&E PROJECT #:
DWC	16-B-028

PLAN REVISIONS

NO.	DATE	DESCRIPTION	BY
0.	9/21/17	ISSUED FOR REVIEW	DRB

12/12/2017

SITE NUMBER: **ELM-765B**
SITE NAME: **SOUTHPORT**
SITE ADDRESS: 511 BUDD STREET ELMIRA, NY 14904
SITE TYPE: RAW LAND
SHEET TITLE: **GROUNDING PLAN**
DRAWING #: **G-1** REVISION: 0

Chemung County Planning Board

Chemung County Commerce Center
400 East Church Street
P.O. Box 588
Elmira, NY 14902-0588
607-737-5510

www.chemungcountyny.gov/planning

planning@co.chemung.ny.us

Chemung County Planning Board Municipal Referral Form

Instructions For Filling Out This Form:

To begin, click on each of the tabs below (Referral Information, Petitioners, etc.) to enter your information. When done, click on the Preview Your Form button (in the "Full Statement" Checklist tab), and when satisfied, click the Submit Your Form button. You will receive a confirmation email of your Municipal Referral Form for your records.

*** = Required Field**

Referring Municipality:	City
City/Village/Town:	Elmira
Referring Official:	John J Ryan Jr Esq
Title:	Corporation Counsel
Address:	317 E Church Street Elmira, NY, 14901
Phone Number:	(607) 737-5674
Email Address:	jryan@cityofelmira.net
Referring Board:	Legislative Board
How Many Petitioners? (up to 4):	1
Petitioner 1 Name:	Edger Development LLC

Petitioner 1 Address: 330 E 14th Street
Elmira, NY, 14903

Petitioner 1 Phone Number: (607) 733-9664

Petitioner 1 Email Address: jcrane@edgerinc.com

Location of Property: 10 acres off Church and Judson Streets

Tax Map Parcel Number(s): Entire Business G District within City of Elmira

Current Zoning District: Business G District/Gateway Commercial

Please select the proposed action(s) from the drop-down menu below.

Proposed Action(s): Special/Conditional Use Permits

Other (please specify): Zoning use amendment to Sectoin 260 Elmira Zoning Ordinance

Description of proposed action (attach detailed narrative if available):
Permit warehouse and distribution uses by special permit in the Business G District within City of Elmira Zoning Ordinance

Upload Detailed Narrative? Yes

Upload detailed narrative file(s): pdf 48_edger development llc request ltr with ma...

The proposed action applies to real propery within five hundred feet (500') of the following:

(please identiyfy by filling in the appropriate blank after each item)

(e) Existing or proposed boundary of any (County) or (State) owned land on which a public building or institution is situated:
Existing County owned boundary

Please Select Which Board(s): Planning Board/Planning Commission, City Council

Board: Town Board/Village Board of Trustees

Board: Zoning Board of Appeals

Board: Planning Board/Planning Commission

Planning Board/Planning Commission Public Hearing Date: Thursday, November 7, 2019

How many Prior and Future Meeting Dates? 1

Prior/Future Meeting Date 1: Thursday, November 7, 2019

Action Taken on This Application (reviewed, approved, discussed, etc.):
Review and recommendation

Board: City Council

City Council Public Hearing Date: Monday, November 25, 2019

How many Prior and Future Meeting Dates? 2

Prior/Future Meeting Date 1: Monday, September 30, 2019

Prior/Future Meeting Date 2: Monday, November 25, 2019

As defined in NYS General Municipal Law §239-m (1)(c), please make sure you have attached the following required information with your referral, as appropriate.

There is nothing to be filled out on this tab.

For All Actions:

Chemung County Planning Board – Municipal Referral Form

All application materials required by local law/ordinance to be considered a "complete application" at the local level (PDF preferred).

Part 1 Environmental Assessment Form (EAF) or Environmental Impact Statement (EIS) for State Environmental Quality Review (SEQR). If Type II Action, provide a statement to that effect.

Agricultural Data Statement, for site plan review, special/conditional use permit, use variances, or subdivision review located in an Agricultural District or within 500 feet of a farm operation located in an Agricultural District, per Ag. Districts Law Article 25AA §305-a, Town Law §283-a, and Village Law §7-739.

Municipal board meeting minutes on the proposed action (PDF preferred).

For Proposing or Amending Zoning Ordinances or Local Laws: The above requirements AND

Report/minutes from Town Board, Village Board or Trustees or Planning Board (PDF preferred)

Zoning Map

Complete text of proposed law, comprehensive plan, or ordinance (PDF preferred)

Please submit this form (along with attachments) by the close of business 10 days prior to the Chemung County Planning Board meeting.

Please Upload All of the Required Documents Here:

pdf edger development llc request ltr with map.pdf

doc resolution zoning referral to city & county pla...

Verified

Verified

September 30, 2019

FOR THE AGENDA
COMMUNICATION

To the Honorable Mayor and Council

Dear Councilmember:

The City has received a request from Edger Development, LLC to amend Section 260 of the City's Zoning Ordinance to allow by special permit warehousing and distribution uses in a "Business G District (Gateway Commercial)".

Pursuant to Section 1110 of the Zoning Ordinance, this proposed amendment must be referred to the City Planning Commission and the County Planning Board for their review and recommendations. The following resolution makes these referrals.

Respectfully yours,

P. Michael Collins
City Manager

September 30, 2019

RESOLUTION
No. 2019 - 256

By Councilmember Stermer:

RESOLVED, that the communication from the City Manager regarding the proposed amendment to Section 260 of the City's Zoning Ordinance to permit warehouse and distribution uses by special permit in a Business G District (Gateway Commercial), be received and placed on file; and be it further

RESOLVED, that the City Council of the City of Elmira, New York does hereby refer this proposed amendment to the City Planning Commission and the County Planning Board for their recommendations.

ADOPTED BY UNANIMOUS VOTE

AYES		**NAYS**
X	Councilmember Stermer	
X	Councilmember Moss	
X	Councilmember Parks	
ABSENT	Councilmember Blandford	
X	Councilmember Krebs	
X	Councilmember Duffy	
X	Mayor Mandell	
6		0

EDGER ENTERPRISES, INC

330 East 14th Street
Elmira Heights, NY 14903
Phone: 607-733-9664
Fax: 607-733-3951

Certified WBE Women's Business Enterprise

P. Michael Collins
City Manager
City Hall Third Floor
317 E. Church St.
Elmira NY 14901

Dear Michael,

Per your discussion with Jodi Edger, I am writing this letter to you as our official request to add an additional use/activity to the existing zoning for the Church Street property owned by Edger Development, LLC.

As a quick background related to this property the Edger's have been assembling these parcels for development since 2010. To date Edger Development LLC have acquired and been trying to develop over ten acres off Church and Judson Street. This location is approximately one thousand feet from Exit 56 off Interstate 86 on Church Street (NYS Route 352). As you are aware, Route 352 is a designated truck route into and through the City of Elmira. The current tax map numbers of these properties are as follows:

Edger Development LLC			
Entity	**Tax Description**	**Property Address**	**Map Number**
Edger Development LLC	City of Elmira	**907 Church St E**	89.16-4-53
Edger Development LLC	City of Elmira	**ES Beach St**	89.16-4-51.2
Edger Development LLC	City of Elmira	**N of Church St E**	89.12-4-49.2
Edger Development LLC	City of Elmira	**921 Church St E**	89.16-4-32.2
Edger Development LLC	City of Elmira	**905 Church St E**	89.16-4-30
Edger Development LLC	City of Elmira	**ES Beach St**	89.19-4-51.2
Edger Development LLC	City of Elmira	**N of Church**	89.16-4-49
Edger Development LLC	City of Elmira	**909 Church St E**	89-16-4-48

The Edger's have been actively trying to market and develop this property for the last ten years with little success and were recently approached by a very large national food manufacturer and distributor, who is very interested in developing a distribution center on a portion of this site (approximately 2 acres). We have been engaged with this company over the last few months and determined that the property is not currently zoned for this activity. Currently the entire parcel is zoned "Business – Gateway" (B-G).

Based on our preliminary discussion with this food manufacturer and distributer, they are interested in developing a 13,000 square feet food distribution center located on this property (see attached preliminary site plan). As you will note the location of this development on the site is in a very non visible inconspicuous location on the edge of the site. Based on this location and approximate acres required for this development, we think this is optimal for the development of the remaining portion of the site. The easy on and off exit 56 really appeals to this business; however as noted above currently, Warehouse and distribution uses are not permitted on this site. As such we are asking for the City to add this use to the existing zoning for this property.

We make this request based on many reasons including its current location on an existing truck route, but mainly the fact that we have made numerous efforts and have had numerous requests and inquiries over the last ten years for various businesses to develop on this site without success. We believe, If we are able to add warehouse and distribution uses to this site there is a high probability that this development will happen and it will jump start the development on the remaining 8 acres. Based on preliminary discussion with this company this opportunity seems very probable if we could get this zoning approved. Clearly, if we are successful in negotiating this deal it will spark interest in completing the remaining development of this site and will add tremendous value to the city in terms of jobs, property tax base and also will contribute to the City's revitalization efforts with a very sustainable business as an anchor tenant on this site.

Based on this location and the current truck route it seems logical that this use would be permitted and added to the current zoning. Please accept this letter as our official request to add to the zoning of this property for this use. We appreciate your consideration in this regard and look forward to working with you to make this exciting opportunity come to fruition.

Sincerely,

Jason C Crane
Controller

SCALE: 1"=30'

PROPOSED LOCATION

FUTURE COMMERCIAL BUILDING 13,000 SF

FUTURE COMMERCIAL BUILDING 2600 SF

FUTURE COMMERCIAL BUILDING 2600 SF

PROPOSED FUEL STATION AND CONVENIENCE STORE 6000 SF

JUDSON STREET

EAST SECOND STREET

EXTENSION

CLUNE PARKWAY

EAST CHURCH STREET

DRAINAGE BASIN AREA

SITE LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- CONCRETE SIDEWALK (SEE DETAIL)
- CONCRETE CURB AND GUTTER (SEE DETAIL)
- 18" STOP BAR (PAVEMENT MARKING)
- TRAFFIC FLOW ARROW (PAVEMENT MARKING)
- "STOP" SIGN (R1-1)
- VAN HANDICAP STALL AND DESIGNATED VAN STALL
- A.D.A. STD HANDICAP RAMP
- GROUP OF FOUR GUARD POSTS
- HEAVY DUTY PAVING
- CONCRETE DUMPSTER PAD LOCATION
- PARKING SPACE COUNT 10'x20'
- STORM SEWER GRATE
- PARKING SPACES TO RECEIVE PERVIOUS PAVEMENT

REVISIONS

DATE:	DESCRIPTION

PROPOSED SITE PLAN

PROJECT NUMBER: 19-0100

DATE: AUGUST 28, 2019

CSP01

NOT RELEASED FOR CONSTRUCTION

Chemung County Planning Board

Chemung County Commerce Center
400 East Church Street
P.O. Box 588
Elmira, NY 14902-0588
607-737-5510

www.chemungcountyny.gov/planning

planning@co.chemung.ny.us

Chemung County Planning Board Municipal Referral Form

Instructions For Filling Out This Form:

To begin, click on each of the tabs below (Referral Information, Petitioners, etc.) to enter your information. When done, click on the Preview Your Form button (in the "Full Statement" Checklist tab), and when satisfied, click the Submit Your Form button. You will receive a confirmation email of your Municipal Referral Form for your records.

*** = Required Field**

Referring Municipality:	City
City/Village/Town:	Elmira
Referring Official:	John J. Ryan, Jr.
Title:	Corporation Counsel
Address:	317 E Church Street Elmira, NY, 14901
Phone Number:	(607) 737-5674
Email Address:	jryan@cityofelmira.net
Referring Board:	Legislative Board
How Many Petitioners? (up to 4):	1
Petitioner 1 Name:	Schulman Co Inc

Petitioner 1 Address: 197 E Washington Avenue
Elmira, NY, 14901

Petitioner 1 Phone Number: (607) 733-7111

Petitioner 1 Email Address: kmiddaugh@saylesevans.com

Location of Property: 185 E Washington Ave; 197 E Washington Ave; 921 Clemens Center Pkwy

Tax Map Parcel Number(s): 89.11-1-5.1; 89.11-1-5.2; 89.07-2-1

Current Zoning District: Industrial A/Light Industrial

Please select the proposed action(s) from the drop-down menu below.

Proposed Action(s): Rezoning

Description of proposed action (attach detailed narrative if available):
Rezoning three (3) parcels owned by Shulman Co., Inc. from Industrial A to Industrial B

Upload Detailed Narrative? Yes

Upload detailed narrative file(s): pdf shulman co rezoning request ltr withmap 10....

The proposed action applies to real propery within five hundred feet (500') of the following:

(please identiyfy by filling in the appropriate blank after each item)

(c) Right-of-way of any existing or proposed (County) or (State Parkway), (Thruway), (Expressway), (Road) or (Highway); (Include (County) or (State Route) # and name of (Road):
Clemens Center Parkway

Please Select Which Board(s): Planning Board/Planning Commission | City Council

Board: Town Board/Village Board of Trustees

Board: Zoning Board of Appeals

Board: Planning Board/Planning Commission

Planning Board/Planning Commission Public Hearing Date: Thursday, November 7, 2019

How many Prior and Future Meeting Dates? 1

Action Taken on This Application (reviewed, approved, discussed, etc.):

review and recommendation

Board: City Council

City Council Public Hearing Date: Monday, November 25, 2019

How many Prior and Future Meeting Dates? 1

As defined in NYS General Municipal Law §239-m (1)(c), please make sure you have attached the following required information with your referral, as appropriate.

There is nothing to be filled out on this tab.

For All Actions:

Chemung County Planning Board – Municipal Referral Form

All application materials required by local law/ordinance to be considered a "complete application" at the local level (PDF preferred).

Part 1 Environmental Assessment Form (EAF) or Environmental Impact Statement (EIS) for State Environmental Quality Review (SEQR). If Type II Action, provide a statement to that effect.

Agricultural Data Statement, for site plan review, special/conditional use permit, use variances, or subdivision review located in an Agricultural District or within 500 feet of a farm operation located in an Agricultural District, per Ag. Districts Law Article 25AA §305-a, Town Law §283-a, and Village Law §7-739.

Municipal board meeting minutes on the proposed action (PDF preferred).

For Proposing or Amending Zoning Ordinances or Local Laws: The above requirements AND

Report/minutes from Town Board, Village Board or Trustees or Planning Board (PDF preferred)

Zoning Map

Complete text of proposed law, comprehensive plan, or ordinance (PDF preferred)

Please submit this form (along with attachments) by the close of business 10 days prior to the Chemung County Planning Board meeting.

Verified

Verified

SAYLES & EVANS
ATTORNEYS AT LAW
ONE WEST CHURCH STREET
ELMIRA, NEW YORK 14901
(607) 734-2271
FAX (607) 734-1754
kmiddaugh@saylesevans.com

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SARA D. ROLLS

ALAN PARSONS
LEWIS W. MORSE, JR.
CYNTHIA S. HUTCHINSON
JAMES F. YOUNG
LAWRENCE LeCLAIR
OF COUNSEL
KIMBERLEE BALOK MIDDAUGH
COUNSEL

October 2, 2019

Re: Zoning Request

John J. Ryan, Jr., Esq.
Corporation Counsel
City of Elmira
311 Lake Street
Elmira, NY 14901

Dear John:

Please be advised that our office is representing Shulman Co., Inc., and OBK, LLC. David Leonardo is the authorized representative of both entities for this proposal. Therefore, please treat these separate entities as one in the same ("Shulman") for purposes of the request herein. On behalf of Shulman, I am requesting an amendment to the zoning for parcels located within the City to create consistency with the current use.

Shulman currently owns four main parcels of property in the City of Elmira, as set forth on the enclosed survey map. The first parcel of property has the address of 185 East Washington Avenue where the majority of the business is located (Tax Map ID # 89.11-1-5.1), which includes Parcels B-1, A and E on the enclosed map. The second parcel of property is located behind and adjacent to the first parcel and has an address of 197 East Washington Avenue (Tax Map ID # 89.11-1-5.2), marked as Parcel B-2 on the enclosed map. The third parcel is located across the railroad tracks from the second parcel with an address of 921 Clemens Center Parkway (Tax Map ID # 89.07-2-1), marked as Parcel C on the enclosed map. The fourth parcel is located farther north adjacent to a Chemung County property along the Clemens Center Parkway with an address of 1217 Clemens Center Parkway (Tax Map ID # 89.06-5-42), marked as Parcel D on the enclosed map. The parcels included in this request for re-zoning are A, B-1, B-2, E and C. Parcel D is not part of this request.

All of the parcels of property are located in the City's Industrial A [Light Industrial] zoning district. The current zoning does not allow for recycling centers nor junkyards, which can reasonably describe the current use. The current use of the property for Parcel B-1 is preexisting and nonconforming due to the length of time these operations have been in place prior to the re-zoning. Shulman would like to change the zoning to Industrial B [General

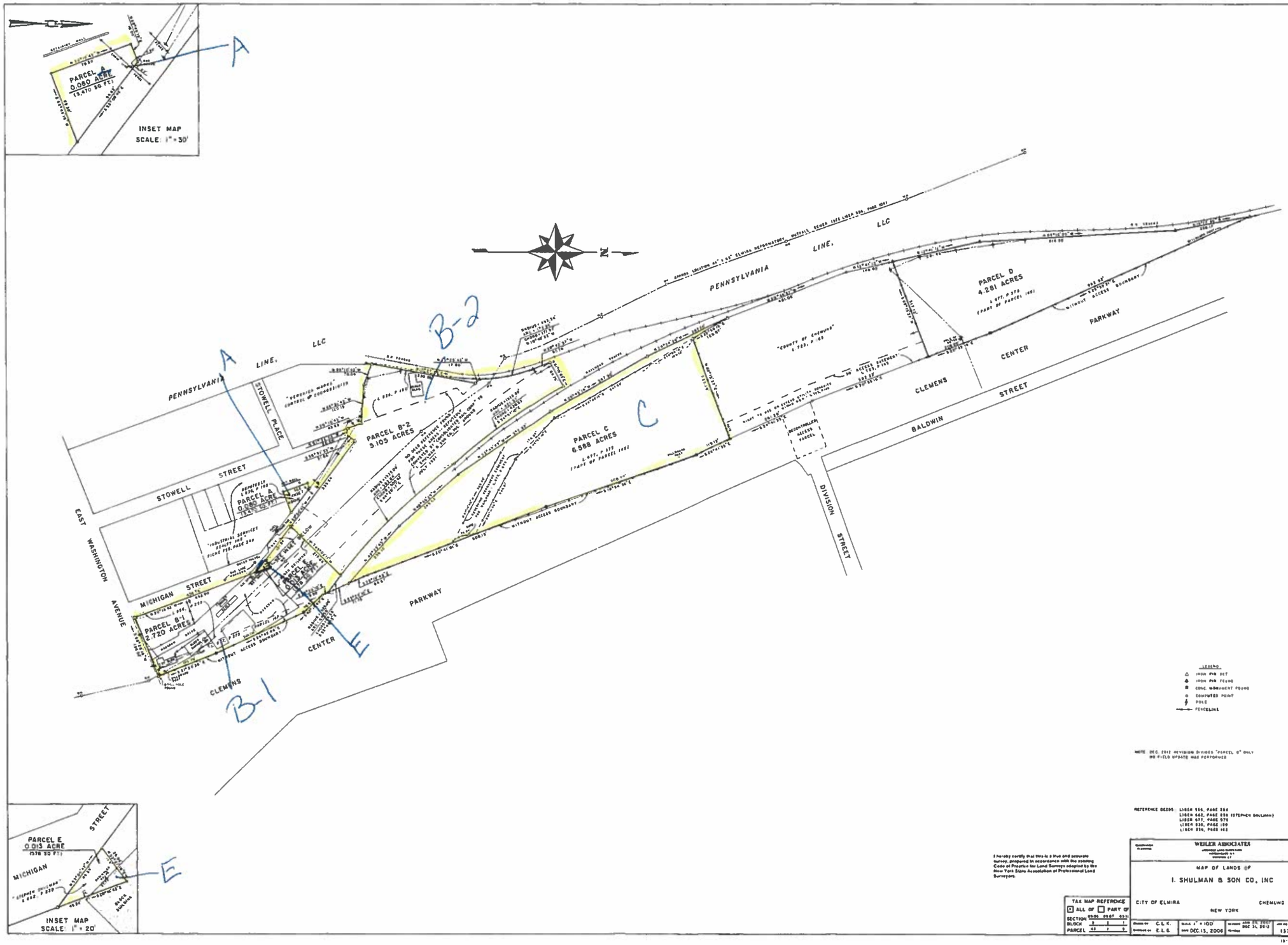
Industrial] district for parcels B-1, A, E, B-2, and C on the enclosed map. Recycling centers and stations are permitted in the principal use within an Industrial B [General Industrial] district and, additionally, junkyards are permitted by special permit. Therefore, the change of zoning would accurately reflect the current use of the property. Please note that Shulman, at this time, does not have any intentions to expand its business beyond the current footprint but would like all of these parcels to accurately reflect the business use.

This request to re-zone is in conformance with the new comprehensive plan that the City has adopted. Shulman's parcels are located adjacent to the Clemens Center Parkway and the railroad. This area meets the needs for industrial zoning and is not conducive to any other type of use.

Shulman has been a committed community partner located in the City for decades with a current business focus on recycling. Thank you for your time and consideration. I look forward to working with you on this matter.

Sincerely,

Kimberlee Balok Middaugh


INSET MAP
SCALE: 1" = 30'
PARCEL A
0.080 ACRE
(3,470 SQ FT)
A
B-2
B-1
C
E
PENNSYLVANIA
LINE,
LLC
STOWELL
STREET
PARCEL A
0.080 ACRE
PARCEL B-2
5.105 ACRES
PARCEL C
6.588 ACRES
PARCEL D
4.281 ACRES
"COUNTY OF CHEMUNG"
L. 723, P. 183
CLEMENS
CENTER
PARKWAY
BALDWIN
STREET
DIVISION
STREET
EAST
WASHINGTON
AVENUE
MICHIGAN
STREET
PARCEL B-1
2.720 ACRES
PARCEL E
0.013 ACRE
(578 SQ FT)
INSET MAP
SCALE: 1" = 20'
LEGEND
IRON PIN SET
IRON PIN FOUND
CONC. MONUMENT FOUND
COMPUTED POINT
POLE
FENCELINE
MAP OF LANDS OF
I. SHULMAN & SON CO., INC
CITY OF ELMIRA
CHEMUNG COUNTY
NEW YORK
WEILER ASSOCIATES
TAX MAP REFERENCE
ALL OF PART OF
SECTION 89.06 89.07 89.11
BLOCK 3 1 1
PARCEL 43 1 9
C.L.K.
E.L.S.
DEC. 13, 2006
1" = 100'
DEC 14, 2006
DEC 14, 2006
13781 01