

# **AMERICAN TOWERS LLC**

## CONDITIONAL USE PERMIT & SITE PLAN APPLICATION

(CUP# 02-21; SP#01-21)

### **STAFF REPORT #2**

April 14, 2021

**SITE:** 143 Dracut Road; Map 259 Lot 011-000

**ZONING:** General-One (G-1), Residential-Two (R-2)\*

\*Besides utilizing an existing driveway for access to the proposed tower, no development is proposed on the portion of the property within the R-2 zone.

**PURPOSE OF PLANS:** Proposed 155-foot camouflaged “monopine” tower with T-Mobile antennas, associated 48’ x 48’ fenced ground area for carrier equipment with access from Dracut Road over existing paved driveway to proposed crushed stone driveway to the locked entrance gate and underground utilities.

**PLANS UNDER REVIEW:** American Tower, Hudson 3 NH; prepared by ATC Tower Services, 3500 Regency Parkway Suite 100, Cary, NC 27518; prepared for: American Towers, LLC, 10 Presidential Way, Woburn, MA 01801 and Rosa C. Chan and Tom W. Chan and Joshua M. Willet and Kristine C. Willet, 143 Dracut Rd., Hudson, NH 03051’ consisting of 17 sheets, with project notes 1-5 on Sheet G-001, additional general notes on Sheet G-002 and Sheet V-201; dated November 9, 2020, last revised March 24, 2021

### **ATTACHMENTS:**

- A. Correspondence titled: “RE: Application for Conditional Use Permit and Site Plan Approval, 143 Dracut Road, Hudson, NH” by Duval & Klasnick LLC, dated March 30, 2021 and received April 2, 2021.
- B. RFR Compliance Report, Donald Haes, CHP, CLSO.
- C. Waiver Request Letter

### **APPLICATION TRACKING:**

- February 12, 2021 – Conditional Use Permit & Site Plan Application received.
- March 17, 2021 – Planning Board heard the application and continued to April 14, 2021.
- April 2, 2021 – Revised Plan Set received.
- April 14, 2021 – Meeting scheduled.

### **WAVIER REQUESTS:**

- §275-9.G – Copy of all applicable Town, state, country or federal approvals or permits
- §276-11.1.B(12) – Location of Building Setback Lines

- §276-11.1.B(17) – Existing Topography
- §276-11.1.B(20) – Location of all Existing Buildings (including size and height)
- §276-11.1.B(25) – Access Road within side yard setbacks

**COMMENTS:**

APPLICANT’S RESPONSE LETTER AND REVISED PLAN

The applicant submitted a letter dated March 30, 2021 (**Attachment A**), in response to the Peer Review Comments, alongside a revised plan dated March 24, 2021.

Below are the outstanding items from the peer review:

1. Error of closure on the revised plans.
2. Printed drawings not to stated scale
3. Sizes for signs other than the ATC site sign not indicated
4. Driveway design concerns about slope on each side of the road crown; peer review offered a suggestion to improve the shoulder design of the driveway.
5. Review of fall zone and tower structure by a peer review, structural engineer.

If the Board wishes, items #1-#3 can be addressed administratively by the Town Engineer and the Town’s peer review consultant.

Although the proposal utilizes an existing curb cut, staff recommends that the extension/expansion of this driveway shall be subject to a new driveway permit. This application should address driveway design (Item #4) as well as the Town Engineer’s need to review the driveway’s effect on stormwater drainage.

The structural design of the tower, and the fall zone, are currently under review by the Town’s peer review consultant.

A proposed bond for removal, in accordance with §334-97, has been reviewed by the Town Engineer, who finds the amount to be reasonable but recommends increasing it from \$28,000 to \$30,000 to account for any future price adjustment.

**Attachment B**, a report prepared by a radiation safety specialist, Donald Haes has been included again in this packet as it appeared to be a topic of particular interest for some Board members.

**DRAFT MOTIONS**

**CONTINUE the public hearing to a date certain:**

I move to continue the public hearing for the site plan & conditional use permit application for Americans Towers LLC at 143 Dracut Road, Map 259 Lot 11, to date certain, \_\_\_\_\_.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

*[If the Board needs more time to deliberate, move to **continue** the hearing]*

**GRANT a waiver:**

I move to grant a waiver from §275-9.G – Copy of all applicable Town, state, country or federal approvals or permits, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**GRANT a waiver:**

I move to grant a waiver from §276-11.1.B(12) – Location of Building Setback Lines, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**GRANT a waiver:**

I move to grant a waiver from §276-11.1.B(17) – Existing Topography, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**GRANT a waiver:**

I move to grant a waiver from §276-11.1.B(20) – Location of all Existing Buildings (including size and height), based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**GRANT a waiver:**

I move to grant a waiver from §276-11.1.B(25) – Access Road within side yard setbacks, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**APPROVE the site plan application:**

I move to approve the Commercial Wireless Telecommunication Facility Conditional Use Permit & Site Plan application titled: American Tower, Hudson 3 NH; prepared by ATC Tower Services, 3500 Regency Parkway Suite 100, Cary, NC 27518; prepared for: American Towers, LLC, 10 Presidential Way, Woburn, MA 01801 and Rosa C. Chan and Tom W. Chan and Joshua M. Willet and Kristine C. Willet, 143 Dracut Rd., Hudson, NH 03051' consisting of 17 sheets, with project notes 1-5 on Sheet G-001, additional general notes on Sheet G-002 and Sheet V-201; dated November 9, 2020, last revised March 24, 2021; subject to, and revised per, the following stipulations:

1. All stipulations of approval shall be incorporated into the Development Agreement, which shall be recorded at the HCRD, together with the Plan.
2. Prior to the issuance of a final certificate of occupancy, a L.L.S. certified "As-Built" plan shall be provided to the Town of Hudson Land Use Division confirming that the site conforms to the Plan.
3. This approval shall replace any previously approved site plans and development agreements.
4. Subject to final review by the Town's peer review engineering consultant.
5. Subject to final administrative review by Town Planner and Town Engineer.
6. The proposed development shall be subject to a new driveway permit, with which the applicant shall provide a drainage report demonstrating that it meets "pre vs. post" conditions to the satisfaction of the Town Engineer.
7. The applicant shall schedule a pre-construction meeting with the Town Engineer prior to applying for a building permit.
8. The Applicant, as well as all future assigns to the subject wireless tower, shall provide access to the tower for Town emergency service communications needs.
9. The Applicant, as well as all future assigns to the subject wireless tower, shall provide access for co-location as availability provides.
10. A note shall be added to the plan stating that the development will comply with MS4 requirements.
11. Proposed easements shall be favorably reviewed by Town Counsel.
12. The applicant shall provide the town with a bond in accordance with §334-97 and in the amount recommended by the Town Engineer, \$30,000.
13. Construction activities involving the approved plan shall be limited to the hours between 7:00 A.M. and 7:00 P.M., Monday through Saturday. No exterior construction activities shall occur on Sunday.
14. If a back-up generator is installed, on suite testing of same will only occur Monday through Friday only, between the hours of 7:00 A.M and 5:00 P.M.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**DUVAL & KLASNICK LLC**  
COUNSELORS AT LAW

**Daniel D. Klasnick**  
*Licensed in Massachusetts, New Hampshire and New York*  
Desk: (781) 873-0021 - Mobile: (774) 249-2814  
dklasnick@dkt-legal.com

March 30, 2021

Mr. Brian Groth  
Town Planner  
Town of Hudson  
12 School Street  
Hudson, New Hampshire 03051

**Re: Application for Conditional Use Permit and Site Plan Approval  
143 Dracut Road, Hudson, NH**

Dear Mr. Groth:

Enclosed please two (2) full size revised plan sets designated as Rev. 5 with a last revision date of 03/24/21. The enclosed plans address the discussed comments in the Fuss & O'Neill March 3, 2021 correspondence. To assist in the review, I have provided responses below that correspond to the item references in the Fuss & O'Neill March 3, 2021 correspondence.

**Site Plan Review Codes (HR275) & Administrative Review Codes (HR276)**

- Item 1.j.: The noted typographical error in the approval block has been corrected.
- Item 1.k.: The approval block has been added to all plan sheets.
- Item 1.l.: The expiration of approval has been sized and added to each plan sheet.
- Item 1.y.: The snow storage area was added to Plan Sheet C-102.

**Drainage Design/Stormwater Management (HR 275-9.A/Chapter 290)**

- Item 4.b.: The sizing calculations for the rip-rap stone was added with new Plan Sheets R-602 and R-603.

**Erosion Control/Wetland Impacts**

- Item 5.a.: The staging and stockpiling area has been added to Plan Sheet C-102.

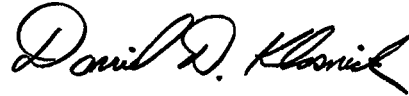
**Zoning (ZO 334)**

Item 6.j.: The Tower Design, Structure Properties has been added as new Plan Sheet R-604.

A full size set of the revised plans was also submitted to the Town consultant: Steve Reichert, PE, Senior Project Manager, Fuss & O'Neill, Inc., The Gateway Bldg., 50 Commonwealth Street, Unit 2S, Manchester, NH 03101.

Should you require any additional information, please don't hesitate to contact me. Thank you very much for your cooperation.

Very truly yours,  
DUVAL & KLASNICK LLC



By: 

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Daniel D. Klasnick  
Attorney at Law

cc: Steve Reichert, PE, Senior Project Manager, Fuss & O'Neill, Inc., (w/enclosure)

**DONALD L. HAES, JR., CHP, CLSO***Radiation Safety Specialist*

PO Box 198, Hampstead, NH 03841

617-680-6262

Email: donald\_haes\_chp@comcast.net

October 2, 2020

**RE: Installation of radio base station antennas and associated equipment for the proposed American Tower “Monopine” at 143 Dracut Road Hudson, NH.**

**PURPOSE**

I have reviewed the information pertinent to the proposed installation at the above location. To determine regulatory compliance, theoretical calculations of maximal radio-frequency (RF) fields have been prepared. The physical conditions are that T-Mobile proposes to install personal wireless services (PWS) directional panel antennas (three antennas each in “arrays” aimed along the 30°, 150°, and 270° azimuths) on a proposed 155’ American Tower “monopine” (monopole designed to look like a pine tree). For proposed location, see Figure 2. The mounting centerline of the antennas is proposed to be 150 feet above ground level (AGL). The proposed installation will allow T-Mobile to continue deployment of their long-term evolution (“LTE” a.k.a. “4G”) and Advanced Wireless Services (AWS) systems. The monopine is designed to host up to three (3) additional PWS provider’s antennas (See Figure 3). This report includes not only the T-Mobile, but the hypothetical condition of being “fully loaded” to capacity.

This report considers the contributions of all the proposed and hypothetical PWS transmitters operating at their typical FCC licensed capacities. The calculated values of RF fields are presented as a percent of current Maximum Permissible Exposures (%MPE) as adopted by the Federal Communications Commission (FCC).<sup>i,ii</sup>

**SUMMARY**

Theoretical RF field calculations data indicate the summation of the proposed T-Mobile maximum PWS RF contributions would be within the established RF exposure guidelines; see Figure 4. The additional calculations also suggest that even if the monopine had up to three (3) additional PWS provider’s antennas attached, the site would comply with all established RF exposure guidelines; see Figure 5.

This includes all publicly accessible areas, and the surrounding neighborhood in general. The results support compliance with the pertinent sections of the FCC’s guidelines for RF exposure.

Based on the results of the additional theoretical RF fields I have calculated, it is my expert opinion that this facility would comply with all regulatory guidelines for RF exposure.

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**Note:** The analyses, conclusions and professional opinions are based upon the precise parameters and conditions of this particular site; **Monopine at 143 Dracut Road Hudson, NH.** Utilization of these analyses, conclusions and professional opinions for any personal wireless services installation, existing or proposed, other than the aforementioned has not been sanctioned by the author, and therefore should not be accepted as evidence of regulatory compliance.

## EXPOSURE LIMITS AND GUIDELINES

RF exposure guidelines enforced by the FCC were established by the Institute of Electrical and Electronics Engineers (IEEE)<sup>iii</sup> and the National Council on Radiation Protection and Measurement (NCRP).<sup>iv</sup> The RF exposure guidelines are listed for RF workers and members of the public. The applicable FCC RF exposure guidelines for the public are listed in Table 1 and depicted in Figure 1. All listed values are intended to be averaged over any contiguous 30-minute period.

Table 1: Maximum Permissible Exposure (MPE) Values in Public Areas			
Frequency Bands	Electric Fields	Magnetic Fields	Equivalent Power Density
0.3 – 1.34 MHz	614 (V/m)	1.63 (A/m)	(100) mW/cm <sup>2</sup>
1.34 - 30 MHz	824/f (V/m)	2.19/f (A/m)	(100) mW/cm <sup>2</sup>
30 - 300 MHz	27.5 (V/m)	0.073 (A/m)	0.2 mW/cm <sup>2</sup>
300 - 1500 MHz	--	--	f / 1500 mW/cm <sup>2</sup>
1500 - 100,000	--	--	1.0 mW/cm <sup>2</sup>

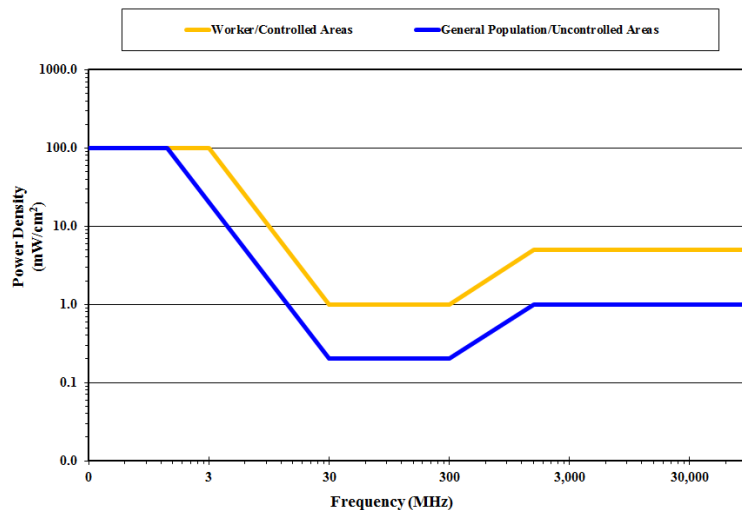
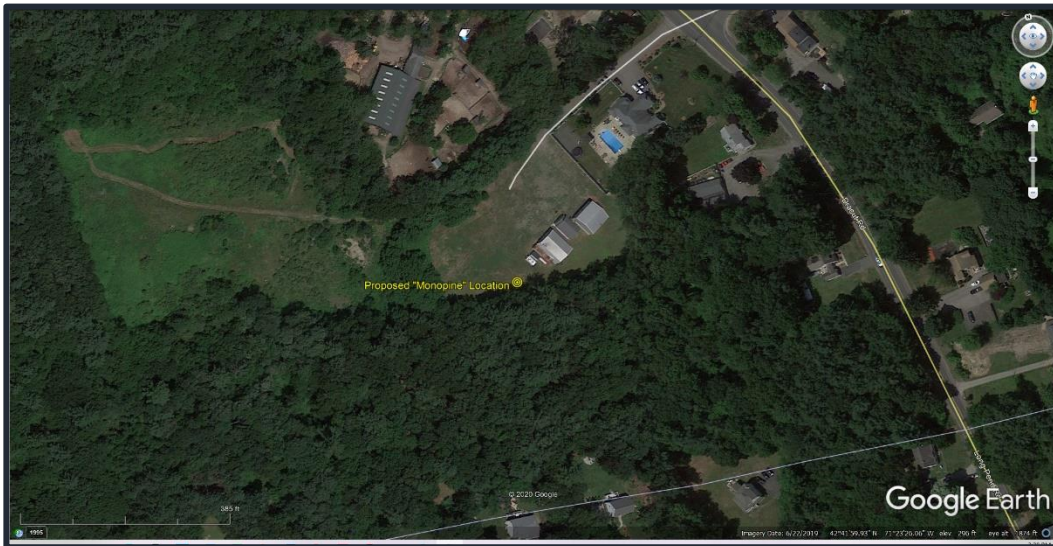


Figure 1: FCC Limits for Maximum Permissible Exposure (MPE)

**NOTE: FCC “5% Rule”** – When the exposure limits are exceeded in an accessible area due to the emissions from multiple fixed RF sources, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose RF sources produce, at the area in question, levels that exceed 5% of the applicable exposure limit proportional to power. <sup>v</sup>

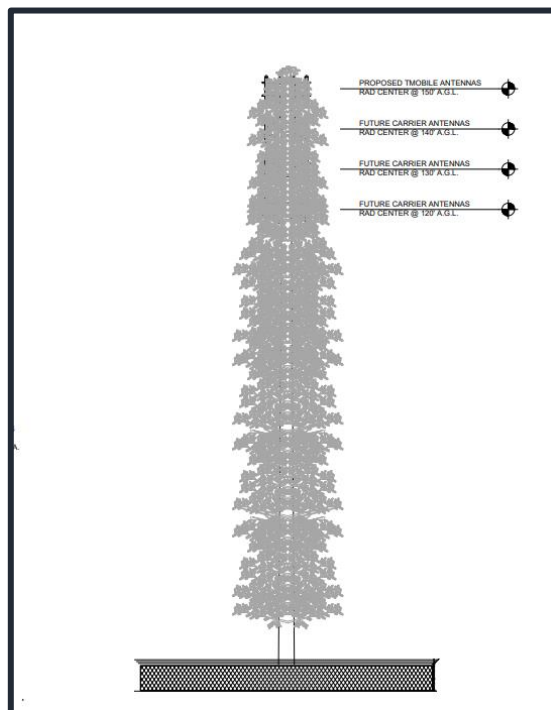


## FACILITY LOCATION AND BUILD-OUT



**Figure 2: Proposed Monopine Location  
143 Dracut Road Hudson, NH**

*(Picture courtesy Google Earth Pro® and may not represent current conditions.)*



**Figure 3: Hypothetical Loading of Monopine (T-Mobile Antennas at the Top)  
143 Dracut Road Hudson, NH**

*(Picture courtesy American Tower.)*

## INTRODUCTORY INFORMATION: MAKING SENSE OF THE “G”S

There are many references to the so-called “generation” of wireless technologies in use. Each new “generation” of wireless technologies has colloquially been designated a numbered “G”.<sup>1</sup> The latest “G” to come out, the fifth generation of wireless technologies or so called “5G”, has attracted extensive research interest, both inside and outside the scientific community. According to the 3<sup>rd</sup> generation partnership project,<sup>2</sup> 5G networks should support three major families of applications: (1) Enhanced mobile broadband; (2) Machine type communications, and (3) Ultra-reliable and low-latency communications. There are also enhanced “vehicle-to-everything” communications which are expected to be supported by 5G networks. These situations require much more “connectivity” than the latest fourth generation (aka “4G” or “Long Term Evolution (LTE)”) networks can handle.

Thus, new networks must be able to handle this high system throughput, in addition to supporting existing older technologies still in use. This is being accomplished through additional spectrum assignments both higher and lower than currently assigned frequencies used by PWS facilities. In fact, currently deployed 5G networks are operating at frequencies once used by television stations.

Nonetheless, frequencies assigned by the FCC for 5G use are all within the bands currently under regulatory oversight, including setting safe limits of exposure to RF energy for both workers, and members of the public. Just recently (4/2020) the FCC has reaffirmed the efficacy of their regulatory exposure limits to RF energy, including those for 5G. From an RF safety standpoint, there is nothing peculiar about the fifth generation of wireless technologies that would set it apart from any of the other advancements of technologies; including the first two generations (first analog then digital communications), the third generation (the first to be referred to a numbered-series as “3G”), and the currently deployed fourth generations (LTE). Recently published studies in peer-reviewed journals<sup>vi</sup> have shown typical exposures to RF energy from operating 5G systems to be well-within the exposure limits.

The FCC currently has categories for Citizens Broadband Radio Service (CBRS): Category “A” refers to a lower power base station, Category “B” must be deployed outdoors and has higher maximum power limits compared with Category “A” devices, and Category “C”. The maximum allowable Equivalent Isotropically Radiated Power (EIRP; the total RF power radiated by the antenna.) is 30 dBm (1 watt), 47 dBm (50 watts), and 62 dBm (1585 watts) for the listed categories “A”, “B”, and “C”, per 10 MHz of bandwidth, respectively.

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<sup>1</sup> PWS “Generations”: **1G**: Analog voice; **2G**: Digital voice; **3G**: Mobile data; **4G**: LTE and mobile Internet; **5G**: Mobile networks interconnect people, control machines, objects, and devices with multi-Gbps peak rates and ultra-low latency.

<sup>2</sup> SOURCE: (<https://www.3gpp.org/about-3gpp>) The 3<sup>rd</sup> Generation Partnership Project (3GPP) unites [Seven] telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC), known as “Organizational Partners” and provides their members with a stable environment to produce the Reports and Specifications that define 3GPP technologies.

## THEORETICAL RF FIELD CALCULATIONS - GROUND LEVELS

### METHODOLOGY

These calculations are based on what are called "worst-case" estimates. That is, the estimates assume 100% use of all transmitters simultaneously. Additionally, the calculations make the assumption that the surrounding area is a flat plane, and there is no degradation of signal strength due to the presence of foliage, building materials, atmospheric conditions, etc. The resultant values are thus conservative in that they over predict actual resultant power densities.

The calculations are based on the following information (See Table 2 data for T-Mobile calculations, and Table 3 for hypothetical data representing a "fully loaded" monopine):

1. Effective Radiated Power (ERP).
2. Antenna height (centerline, above ground level (AGL)).
3. Antenna vertical energy patterns (See Appendix A); the source of the negative gain (G) values. "Directional" antennas are designed to focus the RF signal, resulting in "patterns" of signal loss and gain. Antenna energy patterns display the loss of signal strength relative to the direction of propagation due to elevation angle changes. The gain is expressed as " $G^E$ ".

**Note:** "G" is a unitless factor usually expressed in decibels (dB); where  $G = 10^{(dB/10)}$   
 For example: for an antenna *gain* of 3 dB, the net factor (G) =  $10^{(3/10)} = 2$   
 For an antenna *loss* of -3 dB, the net factor (G) =  $10^{(-3/10)} = 0.5$

To determine the magnitude of the RF field, the power density (S) from an isotropic RF source is calculated, making use of the power density formula as outlined in FCC's OET Bulletin 65, Edition 97-01:<sup>vii</sup>

$$S = \frac{P \cdot G}{4 \cdot \pi \cdot R^2}$$

Where:

P → Power to antenna (watts)

G → Gain of antenna

R → Distance (range) from antenna source to point of intersection with the ground (feet)

$R^2 = (\text{Height})^2 + (\text{Horizontal distance})^2$

Since:  $P \cdot G = \text{EIRP}$  (Effective Isotropic Radiated Power) for broadcast antennas, the equation can be presented in the following form:

$$S = \frac{\text{EIRP}}{4 \cdot \pi \cdot R^2}$$

In the situation of off-axis power density calculations, apply the negative elevation gain ( $G^E$ ) value from the vertical energy patterns with the following formula:

$$S = \frac{\text{EIRP} \cdot G^E}{4 \cdot \pi \cdot R^2}$$

Ground reflections may add in-phase with the direct wave, and essentially double the electric field intensity. Because power density is proportional to the *square* of the electric field, the power density may quadruple, that is, increase by a factor of four (4). Since ERP is routinely used, it is necessary to convert ERP into EIRP by multiplying by the factor of 1.64 (the gain of a half-wave dipole relative to an isotropic radiator). Therefore, downrange power density estimates can be calculated by using the formula:

$$S = \frac{4 \cdot (\text{ERP} \cdot 1.64) \cdot G^E}{4 \cdot \pi \cdot R^2} = \frac{\text{ERP} \cdot 1.64 \cdot G^E}{\pi \cdot R^2} = \frac{0.522 \cdot \text{ERP} \cdot G^E}{R^2}$$

To calculate the % MPE, use the formula:

$$\% \text{ MPE} = \frac{S}{\text{MPE}} \cdot 100$$

The results of the calculations for the potential maximum RF emissions resulting from the summation of the *proposed* T-Mobile PWS system (See Table 2 inventory) are depicted in Figure 4 as plotted against linear distance from the base of the monopine in any direction. The results of the calculations for the potential maximum RF emissions resulting from the summation of the *proposed* T-Mobile PWS plus *future hypothetical additional PWS carrier's* transmitter and antenna installation (See Table 3 inventory) are similarly depicted in Figure 5. Note that the values have been calculated for a height of 6' AGL in accordance with regulatory rationale, and assumes all antennas are directed along the same azimuths.

Also depicted on the graphs are values for a height of 16' AGL (height of a typical 2<sup>nd</sup> story). A logarithmic scale was used to plot the calculated theoretical %MPE values in order to compare with the MPE limit values of 100% (Public) and 500% (note that 100% Worker limit = 500% Public limit), which are so much larger that they would be off the page in a linear plot. The curves are variable due to the application of the vertical energy patterns (See Appendix A).

## **OBSERVATIONS IN CONSIDERATION WITH FCC RULES §1.1307(B) & §1.1310**

*Will it be physically possible to stand next to or touch any omnidirectional antenna and/or stand in front of a directional antenna?*

**NO**; access to the monopine will be restricted, and the site will adhere to RF safety guidelines regarding the transmitting antennas, including appropriate signage.

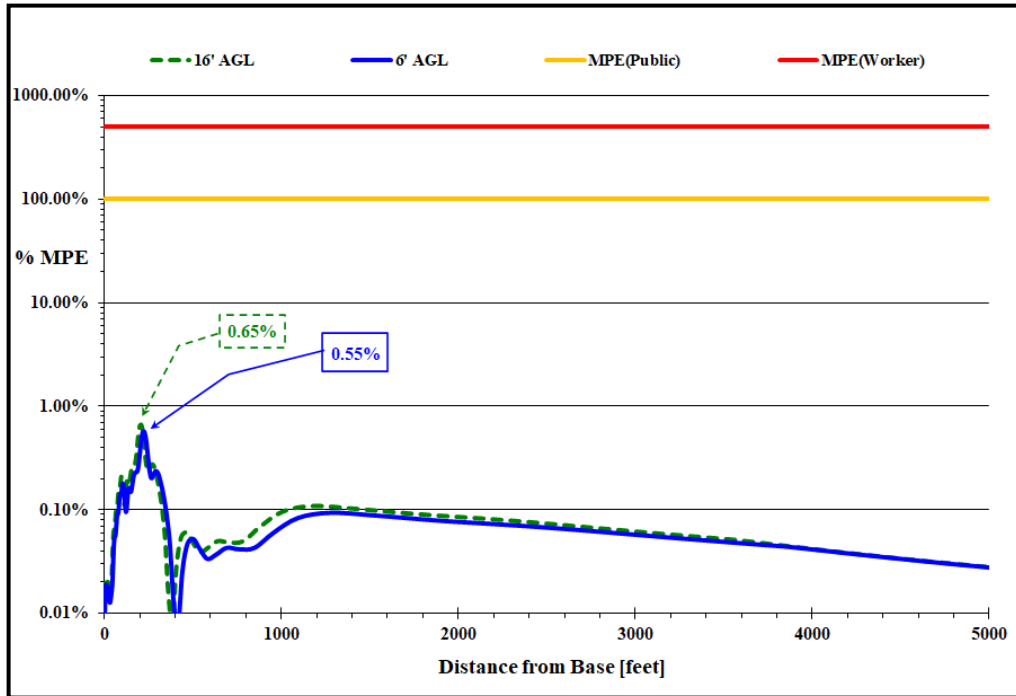
**ANTENNA INVENTORY**

<b>Table 2: Proposed Antenna &amp; Transmitter Inventory                      155' Monopine at 143 Dracut Road Hudson, NH</b>			
Antenna Centerline (AGL)	Typical Antenna Configuration	Typical Parameters: ERP & Transmit Frequencies	Typical Use
<b>Proposed by T-Mobile</b>			
150'	APXVAARR24	5014 watts ERP; $\approx$ 750 MHz	"700" (LTE)
150'	APXVAARR24	6313 watts ERP; $\approx$ 1900 MHz	PCS-LTE
150'	APXVAARR24	8714 watts ERP; $\approx$ 1700 MHz 7417 watts ERP; $\approx$ 2100 MHz	AWS-1700 AWS-2100
150'	25.7" "Microwave Dish" (30° azimuth only)	5660 watts ERP; $\approx$ 5-10 GHz	Back Haul (Point-to-Point Radio)
<b>Table Notes:</b> AWS: Advanced Wireless Services LTE: Long Term Evolution ("4G") PCS: Personal Communication System			

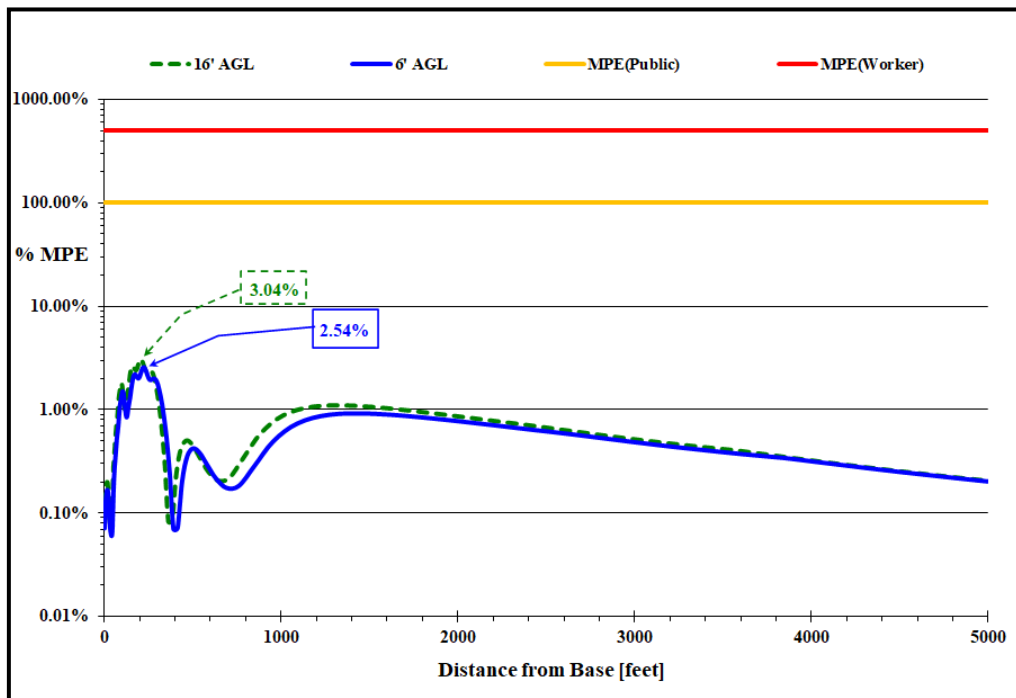
**Table 3: Hypothetical Antenna & Transmitter Inventory  
155' Monopine at 143 Dracut Road Hudson, NH**

Antenna Centerline (AGL)	Typical Antenna Configuration	Typical Parameters: ERP & Transmit Frequencies	Typical Use
<b>Hypothetical PWS Carrier #1</b>			
140'	CCI/ HPA-65R-BUU-H6	5677 watts ERP; ≈ 777 MHz 8516 watts ERP; ≈ 777 MHz 9777 watts ERP; ≈ 850 MHz 15,496 watts ERP; ≈ 2170 MHz 1930 watts ERP; ≈ 1950 MHz	LTE-700 LTE-700 UMTS-850 AWS-2100 PCS/LTE-1900
<b>Hypothetical PWS Carrier #2</b>			
130'	SBNHH-1D45	8322 watts ERP; ≈ 750 MHz 2807 watts ERP; ≈ 850 MHz 10,452 watts ERP; ≈ 2170 MHz 9083 watts ERP; ≈ 1950 MHz	LTE-700 CDMA-850 AWS-2100 PCS/LTE-1900
<b>Hypothetical PWS Carrier #3</b>			
120'	KMW EPBQ- 654L8H8-L2	8322 watts ERP; ≈ 750 MHz 10,452 watts ERP; ≈ 2150 MHz	LTE-700 AWS-2100
<p><b>Table Notes:</b>  <b>AWS:</b> Advanced Wireless Services  <b>CDMA:</b> Code Division Multiple Access (“cellular”)  <b>LTE:</b> Long Term Evolution (a.k.a. “4G”)  <b>PCS:</b> Personal Communication System  <b>UMTS:</b> Universal Mobile Telecommunications Services</p>			

### RESULTS OF THEORETICAL RF FIELD CALCULATIONS



**Figure 4: Theoretical Cumulative Maximum Percent MPE - vs. – Distance (Combined T-Mobile RF Contributions)**



**Figure 5: Theoretical Cumulative Maximum Percent MPE - vs. – Distance (Combined RF Contributions Representing a “Fully Loaded” Monopole)**

## CONCLUSION

Theoretical RF field calculations data indicate the summation of the proposed T-Mobile maximum PWS RF contributions would be within the established RF exposure guidelines; see Figure 4. The additional calculations also suggest that even if the monopine had up to three (3) additional PWS provider's antennas attached, the site would comply with all established RF exposure guidelines; see Figure 5.

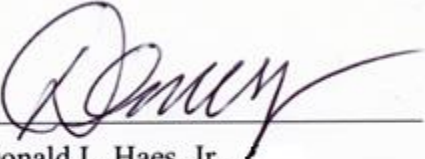
This includes all publicly accessible areas, and the surrounding neighborhood in general. The results support compliance with the pertinent sections of the FCC's guidelines for RF exposure.

The number and duration of calls passing through PWS facilities cannot be accurately predicted. Thus, in order to estimate the highest RF fields possible from operation of these installations, the maximal amount of usage was considered. Even in this so-called "worst-case", the resultant increase in RF field levels are far below established levels considered safe.

Based on the results of the additional theoretical RF fields I have calculated, it is my expert opinion that this facility would comply with all regulatory guidelines for RF exposure.

Feel free to contact me if you have any questions.

Sincerely,



Donald L. Haes, Jr.  
*Certified Health Physicist*



***DONALD L. HAES, JR., CHP, CLSO***

*Radiation Safety Specialist*

PO Box 198, Hampstead, NH 03841

617-680-6262

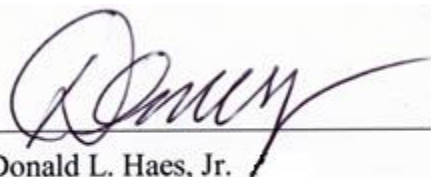
Email: donald\_haes\_chp@comcast.net

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**STATEMENT OF CERTIFICATION**

1. I certify to the best of my knowledge and belief, the statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are personal, unbiased professional analyses, opinions and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report and I have no personal interest or bias with respect to the parties involved.
4. My compensation is not contingent upon the reporting of a predetermined energy level or direction in energy level that favors the cause of the client, the amount of energy level estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
5. This assignment was not based on a requested minimum environmental energy level or specific power density.
6. My compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in, or the use of, this report.
7. The consultant has accepted this assessment assignment having the knowledge and experience necessary to complete the assignment competently.
8. My analyses, opinions, and conclusions were developed and this report has been prepared, in conformity with the *American Board of Health Physics* (ABHP) statements of standards of professional responsibility for Certified Health Physicists.

Date: October 2, 2020

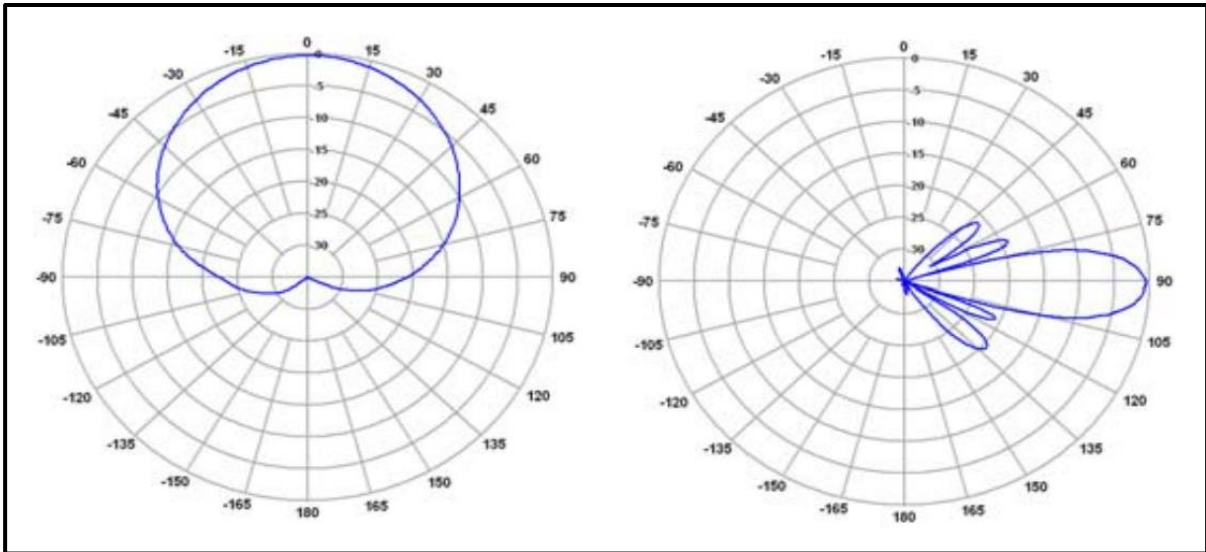
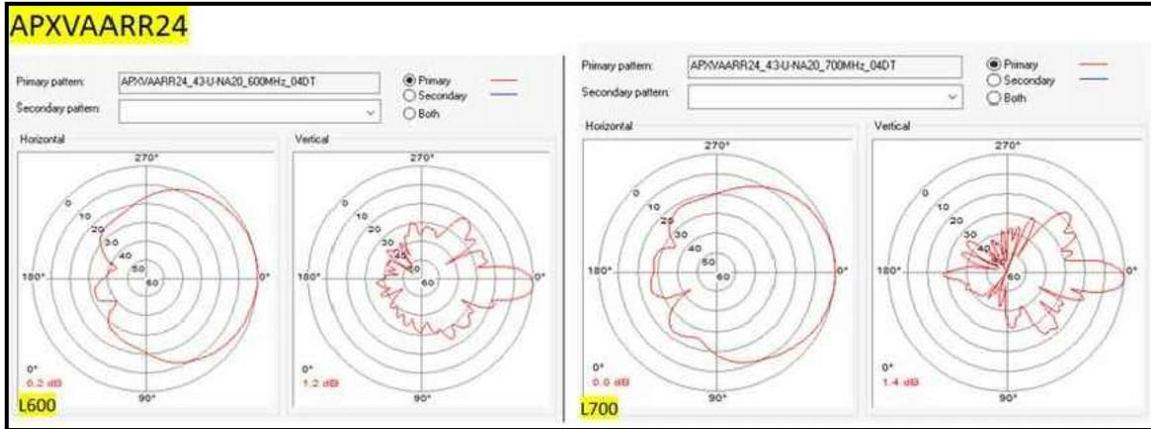
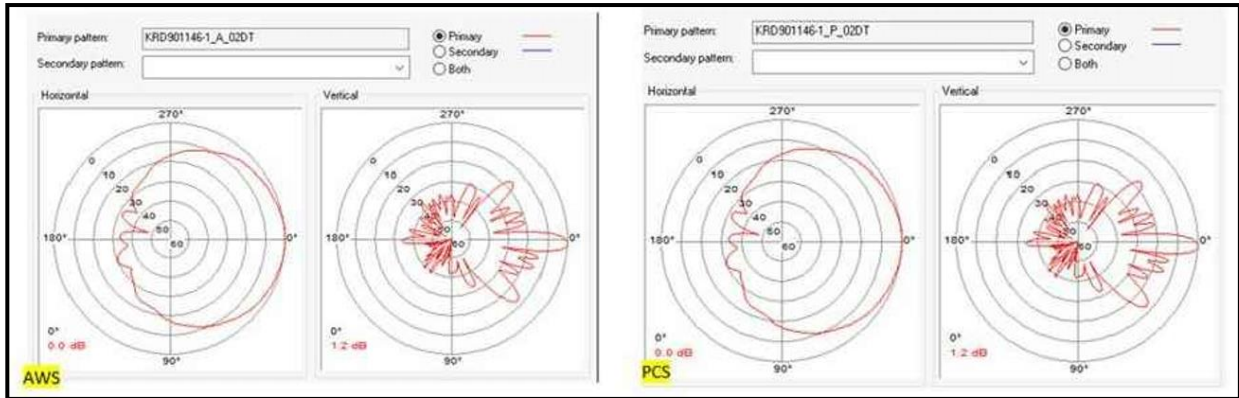


Donald L. Haes, Jr.

*Certified Health Physicist*

## APPENDIX A

### Vertical & Horizontal Energy Patterns



## ***DONALD L. HAES, JR., CHP, CLSO***

*Radiation Safety Specialist*

PO Box 198, Hampstead, NH 03841

617-680-6262

Email: donald\_haes\_chp@comcast.net

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### **SUMMARY OF QUALIFICATIONS**

- **Academic Training -**

- Graduated from Chelmsford High School, Chelmsford, MA; June 1973.
- Completed Naval Nuclear Naval Nuclear Power School, 6-12/1976.
- Completed Naval Nuclear Reactor Plant Mechanical Operator and Engineering Laboratory Technician (ELT) schools and qualifications, Prototype Training Unit, Knolls Atomic Power Laboratory, Windsor, Connecticut, 1-9/1977.
- Graduated Magna Cum Laude from University of Lowell with a Bachelor of Science Degree in *Radiological Health Physics*; 5/1987.
- Graduated from University of Lowell with a Master of Science Degree in *Radiological Sciences and Protection*; 5/1988.

- **Certification -**

- Board Certified by the American Board of Health Physics 1994; renewed 1998, 2002, 2006, 2010, 2014, and 2018. Expiration 12/31/2022.
- Board Certified by the Board of Laser Safety 2008; renewed 2011, 2014, 2017. Expiration 12/31/2020.

- **Employment History -**

- Consulting Health Physicist; Ionizing/Nonionizing Radiation, 1988 - present.
- Radiation, RF and Laser Safety Officer; BAE Systems, 2005–2018 (retired).
- Assistant Radiation Safety Officer; MIT, 1988 – 2005 (retired).
- Radiopharmaceutical Production Supervisor - DuPont/NEN, 1981 – 1988 (retired).
- United States Navy; Nuclear Power Qualifications, 1975 – 1981 (Honorably Discharged).

- **Professional Societies -**

- Health Physics Society [HPS].
- American Academy of Health Physics [AAHP]
- Institute of Electrical and Electronics Engineers [IEEE];
- International Committee on Electromagnetic Safety [ICES] (ANSI C95 series).
- Laser Institute of America [LIA].
- Board of Laser Safety [BLS].
- American National Standards Institute Accredited Standards Committee [ASC Z136].
- Committee on Man and Radiation [COMAR].

## ENDNOTES

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- i. Federal Register, Federal Communications Commission Rules; *Radiofrequency radiation; environmental effects evaluation guidelines* Volume 1, No. 153, 41006-41199, August 7, 1996. (47 CFR Part 1; Federal Communications Commission).
- ii. Telecommunications Act of 1996, 47 USC; Second Session of the 104<sup>th</sup> Congress of the United States of America, January 3, 1996.
- iii. IEEE C95.1-1999: American National Standard, *Safety levels with respect to human exposure to radio frequency electromagnetic fields, from 3 kHz to 300 GHz (Updated in 2019)*.
- iv. National Council on Radiation Protection and Measurements (NCRP); *Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields*, NCRP Report 86, 1986.
- v. Federal Register, Federal Communications Commission Rules; Vol. 85, No. 63 / Wednesday, April 1, 2020 / Rules and Regulations 18145.
- vi. Jamshed, Muhammad Ali (Institute of Communication Systems (ICS), Home of 5G Innovation entre (5GIC), University of Surrey, Guildford GU2 7XH, U.K). *Electro-magnetic field exposure reduction/avoidance for the next generations of wireless communication systems*. IEEE Journal of Electromagnetics, RF, And Microwaves in Medicine and Biology, Vol. 4, No. 1, March 2020.
- vii. OET Bulletin 65: Federal Communications Commission Office of Engineering and Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*; Edition 97-01, August 1999.

**APPLICATION FOR COMMERCIAL WIRELESS  
TELECOMMUNICATIONS FACILITY**

**REQUEST FOR WAIVERS STATEMENT**

**APPLICANT:** American Towers LLC  
**CO-APPLICANT:** T-Mobile Northeast LLC  
**SITE ADDRESS:** 143 Dracut Road  
**PARCEL NO:** 259-011  
**ZONING DISTRICT:** General 1 (G-1) and Residential 2 (R-2)

**I. OVERVIEW**

The applicants, American Towers LLC and T-Mobile Northeast, LLC, requests that the Planning Board of the Town of Hudson approve the application for a Conditional Use Permit and Site Plan Review for the proposed commercial wireless telecommunications facility.

The Applicant requests waivers pursuant Zoning Ordinance, Land Use Regulations, Site Plan Review Regulations and RSA 674:44 III(e) because of the proposed commercial wireless telecommunications facility and the existing site conditions at the property satisfies the standards for the Planning Board to review and approve the application for a wireless installation pursuant to the Ordinance and Regulations of the Town of Hudson.

The zoning drawing which are titled, "SITE NAME: HUDSON 3 NH, SITE NUMBER: 202096, SITE ADDRESS: 143 DRACUT ROAD, HUDSON, NH 33011" prepared by ATC Tower Services, Project Brief and Exhibits provides sufficient project details to allow the Planning Board to review and approve the applications for conditional use permit and site plan review.

**II. WAIVERS REQUESTED AND BRIEF EXPLANATION**

As pertains to the application for the Commercial Wireless Telecommunication Facility, the regulations and RSA 674:44 III(e) states that the Planning Board may as appropriate, waive any of the submission requirements based upon a written request of the applicant submitted at the time of application. A waiver of any submission requirement may be granted only if the Planning Board determines that due to special circumstances of the application, the information is unnecessary, would not violate the purpose of the requirement, granting the waiver would be beneficial and the requirement poses an unnecessary hardship to the Applicants.

In accordance with the Town of Hudson regulations, the Applicants have included a Subdivision/Site Plan Waiver Request Form that due to special circumstances of the application, the information is unnecessary, would not violate the purpose of the requirement, granting the waiver would be beneficial and the requirement poses an unnecessary hardship to the Applicants for the following provisions:

**Site Plan Review Codes and Administrative Requirements and Definitions**

- HR 275-9.A Stormwater Management Plan. Applicant requests a waiver of the requirement to complete a Stormwater Management Plan. The plans contain considerable detail regarding grading, erosion control and stormwater infrastructure to allow for review and comments, based upon the relatively limited ground disturbance and impervious surface associated with the Project.
- HR 275-9.B. Traffic Study. Applicants request a waiver of the requirement to complete a traffic study. The Facility will be unmanned and will generate no increase in traffic resulting from the approximate 1 or 2 month construction period. Once constructed, the Facility will generate on average 1 to 2 maintenance visits per month.
- HR 275-9.C. Noise Study. The Facility will generate negligible levels of noise that are consistent with typical residential use. No generator is proposed for the Facility.
- HR 275-9.D. Fiscal Impact Study. The Applicants request a waiver of the requirement to complete a fiscal impact study. The Project will not significantly affect the public infrastructure or municipal services, since no potable water supply or wastewater disposal are proposed as part of the Project. Moreover, the Facility will be unmanned. Maintenance will generate an average of one to two trips per month.
- HR 275-9.G. Copy of all applicable Town, state, county or federal approvals or permits. Applicants request that the Planning Board waive the requirement to provide copies of applicable permits. With respect to the Facility, Applicants have filed for a special exception with the Zoning Board of Adjustment and concurrent site plan/conditional use approval. The Project is undergoing review in accordance with the requirements of Section 106 of the Federal National Environmental Policy Act (“NEPA”).
- HR 275-9.I. Environmental Impact Study. Applicants request a waiver of the requirement to complete a separate environmental impact study because the project will have minimal impact and, in any event, the requirements are consistent with the NEPA requirements for new communication towers.

- HR 276-11.1.B.(12). Location of Building Setback Lines. Applicants request a waiver of the requirement to show building setback lines because the Facility does not involve the construction of buildings, parking or display areas within the minimum 100' building setbacks for the G-1 Zoning District.
- HR 276-11.1.B.(17). Permanent Monuments. Applicants request a waiver of this requirement because a survey of American Tower's leased area and access utility easements with bearings was included as part of the site plans. The Site Plan does include a legal description of the parent parcel and shows the parent parcel boundaries. Given that the Facility will only occupy a small portion (50' x 50' lease area) of the Property, a survey of the parent parcel is unduly burdensome.
- HR 276-11.1.B.(20). Location of all Existing Buildings (including size and height). Applicant requests a waiver of the requirement to include the size and height of all existing buildings. The plans show the relative location and square footage of the existing buildings on the Property. The inclusion of further detail would not tend to assist the Board in its review of the proposed installation of the Facility.
- HR 276-11.1.B.(25). Access Road within side yard setbacks. Applicants request a waiver. To access the Facility, the Applicants will be utilizing the existing driveway without alteration and then installing a driveway extension to the fenced area.
- HR 290-7. Stormwater Management Plan. Applicant requests a waiver of the requirement to complete a Stormwater Management Plan. The plans contain considerable detail regarding grading, erosion control and stormwater infrastructure to allow for review and comments, based upon the relatively limited ground disturbance and impervious surface associated with the Project.

Pursuant to the regulations and RSA 674:44 III(e), the Planning Board may waive any of the foregoing provisions when in the opinion of the Planning Board due to special circumstances of the application, the information is not required to determine compliance with the standards of the Ordinance and would result in unnecessary hardship to the applicant.

American Tower is committed to working with local communities in siting and construction of its antenna facilities. Because of American Tower's desire to be a good neighbor and establish long-term relationships, American Tower makes every effort to identify potential community concerns and incorporate all appropriate mitigation measures in the site selection process.

The location of the camouflaged monopole pine tree tower installation is an integral part of T-Mobile's network of telecommunications facilities necessary to provide adequate coverage to those persons living in Hudson, as well as those persons commuting

through the Hudson area on the various roadways. If T-Mobile is permitted to install the equipment detailed herein, this will aid in reaching T-Mobile's goal to provide enhanced service and communications in the Town of Hudson, the State of New Hampshire and the United States as a whole.

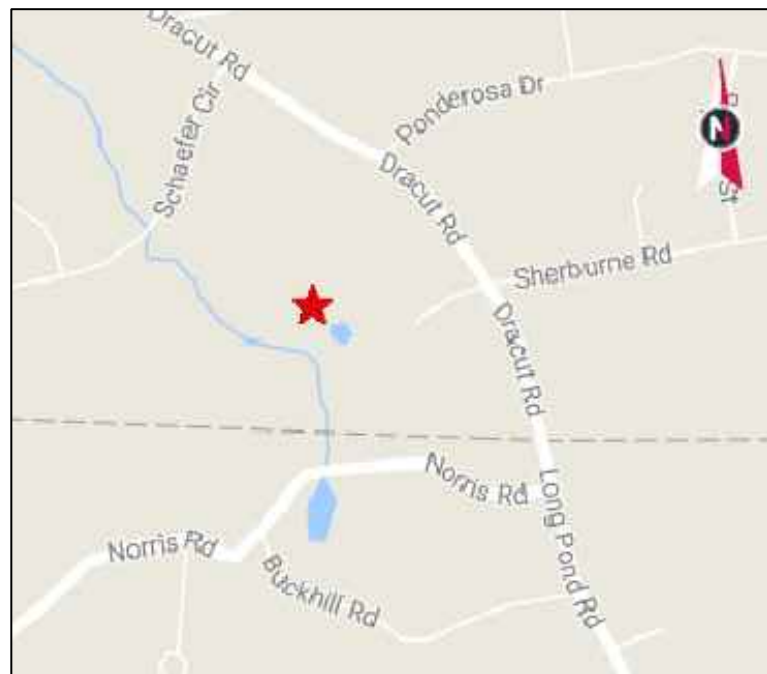
Based on the analysis of the application, project brief, exhibits and materials, Applicants' requested waivers should also be allowed based upon the considerations of the Telecommunications Act of 1996, ("TCA") codified at 47 USC§332(c)(7), which requires that zoning decisions do not prohibit the provision of wireless services.

American Tower has prepared plans, photo simulations and supporting materials which accurately depict the property and location of the camouflaged commercial wireless telecommunication tower on property. Due to the size and scope of the proposed camouflaged commercial wireless telecommunications tower, American Tower believes that the Plans, Project Brief, and other documents submitted meet the requirements to the extent applicable to this proposal. To the extent the Board believes that the provided Plans, photo simulations and supporting materials do not comply with the requirements, the additional detail will not tend to provide substantive assistance to the Board and therefore the Applicant requests a waiver from any such requirements.

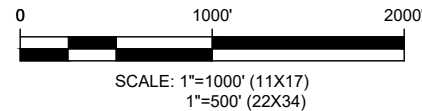
### **III. SUMMARY**

The Applicants' plans and supporting documentation, as submitted, are sufficient for review by the Planning Board to determine whether to grant the conditional use permit and site plan approval with all waivers requested.





VICINITY MAP



**AMERICAN TOWER®**

SITE NAME: HUDSON 3 NH  
 SITE NUMBER: 202096  
 SITE ADDRESS: 143 DRACUT ROAD  
 HUDSON, NH 33011

RAWLAND  
 707B V2 TOWER  
 CONSTRUCTION DRAWINGS



LOCATION MAP

**AMERICAN TOWER®**  
 dba SPECIALTY TOWER SERVICES  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: 1571

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NW	11/09/20
1	UPDT SURVEY SEAL	NW	11/16/20
2	ADDED SPECIAL INSPECTION	NW	11/17/20
3	UPDT APPROVAL BLOCK	NW	03/15/21
4	UPDT. SURVEY SEAL	NW	03/17/21
5	UPDT. SURVEY LEGAL DESC.	NW	03/24/21

ATC SITE NUMBER:

**202096**

ATC SITE NAME:

**HUDSON 3 NH**

SITE ADDRESS:

143 DRACUT ROAD  
 HUDSON, NH 33011

SEAL:



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**TITLE SHEET**

SHEET NUMBER: **G-001** REVISION: **5**

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 143 DRACUT ROAD HUDSON, NH 33011 COUNTY: HILLSBOROUGH <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: N42° 41' 59.86" LONGITUDE: W71° 23' 26.47" GROUND ELEVATION: 294.39' AMSL <u>ZONING INFORMATION:</u> JURISDICTION: TOWN OF HUDSON PARCEL NUMBER: 259-011 ZONING: PARCEL SPANS TWO DISTRICTS: G-1 (GENERAL 1) - TOWER LOCATION R-2 (RESIDENTIAL 2) <u>PROPERTY OWNER:</u> ROSA C. CHAN AND TOM W. CHAN AND JOSHUA M. WILLET AND KRISTINE C. WILLET 143 DRACUT RD HUDSON, NH 03051 <u>TOWER OWNER:</u> AMERICAN TOWERS LLC 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES 3500 REGENCY PARKWAY SUITE 100 CARY, NC 27518	THIS PROJECT INVOLVES ERECTING A NEW 155' MONOPINE WITH ASSOCIATIVE FACILITIES IN A 50' X 50' COMPOUND.  THIS PLAN WILL BE VALID FOR ONE YEAR AFTER APPROVAL.	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
		<u>PROJECT NOTES</u> 1. THE FACILITY WILL BE UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. PROPOSED FACILITY WILL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-001	TITLE SHEET	5	03/24/21	NW
		<u>PROJECT LOCATION DIRECTIONS</u> FROM BOSTON, MA: TAKE I-93 N TO NH-3A S IN HUDSON. TAKE THE NH-3A S EXIT FROM CIRCUMFERENTIAL HWY. DRIVE TO DRACUT RD.	G-002	GENERAL NOTES	3	03/15/21	NW
			G-003	GENERAL NOTES	3	03/15/21	NW
			V-101	COMPOUND DETAIL & DESCRIPTIONS			
			V-102	EXISTING CONDITIONS			
			C-101	OVERALL SITE PLAN	3	03/15/21	NW
			C-102	GRADING PLAN & PROFILE	3	03/15/21	NW
			C-103	EROSION & SEDIMENT CONTROL PLAN	3	03/15/21	NW
			C-104	PLANTING PLAN	3	03/15/21	NW
			C-401	COMPOUND PLAN	3	03/15/21	NW
			C-402	TOWER ELEVATION	3	03/15/21	NW
			C-501	CONSTRUCTION DETAILS	3	03/15/21	NW
			C-502	CONSTRUCTION DETAILS	3	03/15/21	NW
			C-503	CONSTRUCTION DETAILS	3	03/15/21	NW
			C-504	SIGNAGE	3	03/15/21	NW
			E-401	GROUNDING LAYOUT	3	03/15/21	NW
			E-501	ELECTRICAL DETAILS	3	03/15/21	NW
			E-601	ELECTRICAL ONE LINE DIAGRAM	3	03/15/21	NW
			R-601	SPECIAL INSPECTIONS WORKSHEET	3	03/15/21	NW
			R-602	SUPPLEMENTAL	3	03/15/21	NW
			R-603	SUPPLEMENTAL	3	03/15/21	NW
			R-604	TOWER DRAWINGS	3	03/15/21	NW

APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.  
 PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRACUT ROAD  
 HUDSON, NH 03051  
 LANDLORD SIGNATURE: \_\_\_\_\_



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**GENERAL CONSTRUCTION NOTES:**

- ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS FOR WIRELESS TOWER SITES.
- CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
- ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
- DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
- CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ATC CM PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE ATC CM PRIOR TO PROCEEDING.
- EACH CONTRACTOR SHALL COOPERATE WITH THE ATC CM, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE ATC CONSTRUCTION MANAGER.
- ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
- WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY THE ATC CONSTRUCTION MANAGER IMMEDIATELY.
- CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
- ALL ROOF WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
- CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
- CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
- CONTRACTOR SHALL FURNISH ATC WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
- PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH ATC CM TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
- PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH ATC CONSTRUCTION MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY ATC. ALL REQUIRED PERMITS NOT OBTAINED BY ATC MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
- CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ATC FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO ATC SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- CONTRACTOR SHALL NOTIFY ATC CM A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.

**EROSION AND SEDIMENTATION CONTROL PLAN NOTES:**

THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR CONTROLLING SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROPOSED FACILITY. THE EQUIPMENT ANTICIPATED TO BE USED FOR THE CONSTRUCTION INCLUDES THE FOLLOWING: BACKHOES, BULLDOZERS, LOADERS, TRUCKS, CRANES, COMPACTORS, AND GRADERS. THE FOLLOWING MEASURES WILL BE UNDERTAKEN TO PROVIDE MAXIMUM PROTECTION TO THE SOIL, WATER, AND ABUTTING LANDS:

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM AMERICAN TOWER PRIOR TO IMPLEMENTATION.
- THE LIMITS OF DISTURBANCE (LOD) SHOULD BE MARKED PRIOR TO DISTURBANCE ACTIVITIES (I.E. SURVEY STAKES, POSTS & ROPE, CONSTRUCTION FENCE, ETC.).
- A COPY OF THE SEDIMENT AND EROSION CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE DURING CONSTRUCTION UNTIL THE SITE IS STABILIZED. (AS APPLICABLE)
- PRIOR TO GRUBBING OR ANY EARTHMOVING OPERATION, SILTATION FENCE WILL BE INSTALLED ACROSS THE SLOPE ON THE CONTOUR AT THE DOWNHILL LIMIT OF THE WORK AS PROTECTION AGAINST CONSTRUCTION RELATED EROSION. (CONSULT ATC CM AS REQUIRED)
- STONE CHECK DAMS WILL BE INSTALLED IN THE DRAINAGE DITCHES TO PREVENT EROSION PRIOR TO THE STABILIZATION OF THE CHANNELS. EROSION CONTROL BLANKETS WILL ALSO BE INSTALLED IN ALL DITCHES TO BE REVEGETATED.
- PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY UNDISTURBED LAND AREA WILL BE COMPLETED WITHIN FIFTEEN CALENDAR DAYS AFTER FINAL GRADING HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE OR PRACTICAL TO PERMANENTLY STABILIZE DISTURBED LAND, TEMPORARY EROSION CONTROL MEASURES WILL BE IMPLEMENTED WITHIN THIRTY CALENDAR DAYS OF EXPOSURE OF SOIL. ALL DISTURBED AREAS WILL BE MULCHED FOR EROSION CONTROL UPON COMPLETION OF ROUGH GRADING. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.
- ANY EXPOSED SLOPES GREATER THAN 2:1 AND NEWLY CONSTRUCTED DRAINAGE DITCHES WILL BE STABILIZED WITH EROSION CONTROL BLANKET TO PREVENT EROSION DURING CONSTRUCTION AND TO FACILITATE REVEGETATION AFTER LOAMING AND SEEDING.
- TO PROVIDE PROTECTION AGAINST EROSION, RIPRAP WILL BE PLACED AT ALL CULVERT INLETS AND OUTLETS AS SHOWN ON THE ATTACHED DRAWINGS.
- IN AREAS OF CONSTRUCTION DEWATERING, ISOLATED SETTLEMENT TRAPS WILL BE CONSTRUCTED ADJACENT TO THE ACTIVITY. WATER WILL BE PUMPED FROM THE EXCAVATIONS TO THESE DEPRESSION AREAS FOR SEDIMENT REMOVAL. ADDITIONAL SEDIMENTATION PROTECTION WILL BE PROVIDED BY THE INSTALLATION OF HAYBALE BARRIERS BETWEEN THE BASINS AND THE RECEIVING DRAINAGE COARSE.
- NATIVE TOPSOIL SHALL BE SAVED, STOCKPILED, MULCHED, AND REUSED AS MUCH AS POSSIBLE ON THE SITE. SILTATION FENCE SHALL BE INSTALLED AT THE BASE OF STOCKPILES AT THE DOWNHILL LIMIT TO PROTECT AGAINST EROSION. STOCKPILES WILL BE STABILIZED BY SEEDING AND MULCHING UPON FORMATION OF THE PILES. UPHILL OF THE STOCKPILES, STABILIZED DITCHES AND/OR BERMS WILL BE CONSTRUCTED TO DIVERT STORMWATER RUNOFF AWAY FROM THE PILES.
- FINAL SEEDING WILL BE APPLIED IN ACCORDANCE WITH THE AMERICAN TOWER CORPORATION CONSTRUCTION SPECIFICATION.
- SHOULD CONSTRUCTION OCCUR AFTER NOVEMBER 15, ADDITIONAL EROSION CONTROL METHODS WILL BE IMPLEMENTED. ALL DISTURBED AREAS WILL BE MINIMIZED AS MUCH AS POSSIBLE. PRIOR TO FREEZING, ADDITIONAL EROSION CONTROL DEVICES WILL BE INSTALLED AS APPROPRIATE INSPECTION OF THESE EROSION CONTROL ITEMS WILL BE CONSTANT, WITH PARTICULAR ATTENTION PAID TO WEATHER PREDICTIONS TO ENSURE THAT THESE MEASURES ARE PROPERLY IN PLACE TO HANDLE LARGE AMOUNTS OF RUNOFF FROM HEAVY RAINS OR THAWS.
- FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREAS SHALL BE COVERED BY A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
- THE CONTRACTOR WILL REGULARLY INSPECT THE PROJECT'S EROSION AND SEDIMENTATION CONTROLS DURING THE ENTIRE ACTIVE CONSTRUCTION STAGES. THE INSPECTIONS WILL BE PERFORMED WEEKLY AND AFTER ALL RUNOFF EVENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE INSTALLATION, OPERATION, MAINTENANCE, AND REMOVAL OF ALL EROSION AND SEDIMENTATION CONTROLS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENETTING MUST BE PERFORMED IMMEDIATELY. SEDIMENT THAT HAS BEEN TRAPPED BY THE SILT BARRIER WILL BE REMOVED AS REQUIRED, AND IN ALL CASES, BEFORE THE ACCUMULATION HAS

REACHED HALF THE HEIGHT OF THE FENCE. THE SILT BARRIER WILL BE RE-ANCHORED, REPAIRED, OR REPLACED AS NECESSARY. ALL OTHER CONTROLS WILL BE INSPECTED ON THE SAME SCHEDULE. IF EROSION AND SEDIMENT CONTROL BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S, OR MODIFICATION OF THOSE INSTALLED WILL BE REQUIRED.

- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE AMERICAN TOWER CORPORATION CONSTRUCTION SPECIFICATION AND/OR THE CONTRACTOR SHALL NOTIFY THE ATC CONSTRUCTION MANAGER.
- SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

**CONSTRUCTION SEQUENCE:**

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM AMERICAN TOWER PRIOR TO IMPLEMENTATION.
- BEGIN ROAD REPAIR AND BULK GRADING.
  - STRIP TOPSOIL AND STORE AT DESIGNATED LOCATIONS AS SHOWN ON THE PLANS OR LOCATION AS AGREED UPON WITH THE ATC CONSTRUCTION MANAGER.
  - NATIVE TOPSOIL SHALL BE SAVED, STOCKPILED, MULCHED, AND REUSED AS MUCH AS POSSIBLE ON THE SITE. SILT FENCE SHALL BE INSTALLED AT THE BASE OF STOCKPILES AT THE DOWNHILL LIMIT TO PROTECT AGAINST EROSION.
  - ROUGH GRADE WATERBAR LOCATIONS. OVER-EXCAVATE TO ALLOW FOR PROPER STONE DEPTHS. WATER BARS SHOULD NOT BE 'SPEED BUMPS' AND SHALL BE INSTALLED PER THE DIMENSIONS INDICATED ON PLANS AND DETAIL.
- CONSTRUCT DITCH WORKING DOWNSTREAM TO UPSTREAM.
  - IMMEDIATELY STABILIZE DITCH, FILL AND CUT SLOPES WITH EROSION CONTROL MATTING. SEE PLANS AND DETAILS FOR LOCATIONS.
- INSTALL CULVERT.
  - INSTALL RIP-RAP OUTLET PROTECTION.
- CONSTRUCT ACCESS ROAD
  - INSTALL GEOTEXTILE ON BASE COURSE
  - INSTALL SURFACE COARSE TO MATCH DEPTH AND CROSS SLOPES AS INDICATED ON THE DETAIL
  - COMPACTION SHALL BE WITH SHEEPSFOOT ROLLER OR RUBBER TIED ROLLERS WEIGHING AT LEAST EIGHT TONS FOR BASE COURSE AND SMOOTH DRUM VIBRATOR ROLLERS FOR SURFACE COURSE/FINISH GRADE PER ATC SPECIFICATIONS.
- INSTALL TOWER PER MANUFACTURERS SPECIFICATIONS.
- INSTALL COMPOUND SURFACE COURSE PER DETAIL.
- INSTALL FENCE PER DETAIL.
- INSTALL UTILITIES COORDINATING WITH LOCAL UTILITY COMPANY.
- PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS.
  - FINAL SEEDING WILL BE APPLIED IN ACCORDANCE WITH THE AMERICAN TOWER CORPORATION CONSTRUCTION SPECIFICATION.



THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

REV.	DESCRIPTION	BY	DATE
①	FOR CONSTRUCTION	NW	11/09/20
③	UPTD APPROVAL BLOCK	NW	03/15/21
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ATC SITE NUMBER:

**202096**

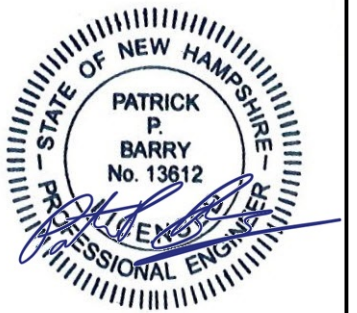
ATC SITE NAME:

**HUDSON 3 NH**

SITE ADDRESS:

143 DRACUT ROAD  
HUDSON, NH 33011

SEAL:



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**GENERAL NOTES**

SHEET NUMBER:

**G-002**

REVISION:

**3**

APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_  
PLANNING BOARD:  
CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
TOM W. & ROSA C. CHAN  
143 DRAUT ROAD  
HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

**CONCRETE AND REINFORCING STEEL NOTES:**

- DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE AND SUBMITTED TO ENGINEER PRIOR TO PLACING CONCRETE.
- CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A MAXIMUM 4" SLUMP AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
- THE FOLLOWING MATERIALS SHALL BE USED:
  - PORTLAND CEMENT: ASTM C-150, TYPE 1 OR 2
  - REINFORCEMENT: ASTM A-185, PLAIN STEEL WELDED WIRE FABRIC
  - REINFORCEMENT BARS: ASTM A615, GRADE 60, DEFORMED
  - NORMAL WEIGHT AGGREGATE: ASTM C-33
  - WATER: DRINKABLE
  - ADMIXTURES: NON-CHLORIDE CONTAINING
- MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):
  - A. CONCRETE CAST AGAINST EARTH: 3"
  - B. ALL OTHER CONCRETE: 2"
- A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ATC CM APPROVAL WHEN DRILLING HOLES IN CONCRETE.
- ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI 301.
- DO NOT WELD OR TACK WELD REINFORCING STEEL.
- ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
- REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
- DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
- DO NOT ALLOW REINFORCEMENT, CONCRETE OR SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 3 DAYS AFTER PLACEMENT.
- FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
- CONCRETE SHALL BE RUBBED TO A ROUGH GROUT FINISH. PADS SHALL BE SEALED BY STEEL TROWEL.
- UNLESS OTHERWISE NOTED:
  - A. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.
  - B. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
- REINFORCING BAR DEVELOPMENT LENGTHS, AS COMPUTED IN ACCORDANCE WITH ACI 318, FORM THE BASIS FOR BAR EMBEDMENT LENGTHS AND BAR SPLICED LENGTHS SHOWN IN THE DRAWINGS. APPLY APPROPRIATE MODIFICATION FACTORS FOR TOP STEEL, BAR SPACING, COVER AND THE LIKE.
- DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
- ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
- LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND

- ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS
- SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 8".
  - BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
  - ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE 16 GAUGE CONFORMING TO ASTM A82
  - SLAB ON GROUND
    - A. COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.
    - B. PROVIDE VAPOR BARRIER BENEATH SLAB ON GROUND.

**GENERAL FOUNDATION NOTES:**

(APPLICABLE FOR EQUIPMENT SHELTER ONLY)

- THOROUGHLY COMPACT BOTTOM OF EXCAVATIONS PRIOR TO PLACING RIGID INSULATION BARRIER. BACKFILL AND COMPACTION PROCEDURES SHALL BE DONE PER INDUSTRY STANDARDS.
- ALL REINFORCING STEEL SHALL BE ASTM A615 - GRADE 60. SECURE REINFORCING IN PLACE TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
- VERIFY DETAILS AND DIMENSIONS WITH SHELTER DRAWINGS. NOTIFY ATC CM OF ANY DISCREPANCIES.
- INSULATION BARRIER PROVIDED IS FOR FROST PROTECTION IN LIEU OF STANDARD FOUNDATIONS WITH BEARING AT CODE REQUIRED FROST DEPTH.
- SHELTER MUST BE ANCHORED TO ITS FOUNDATION. ANCHOR IN ACCORDANCE WITH SHELTER MANUFACTURER SPECIFICATIONS.



**AMERICAN TOWER®**  
 dba SPECIALTY TOWER SERVICES  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: 1571

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NW	11/09/20
3	UPTD APPROVAL BLOCK	NW	03/15/21
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ATC SITE NUMBER:

**202096**

ATC SITE NAME:

**HUDSON 3 NH**

SITE ADDRESS:

143 DRACUT ROAD  
 HUDSON, NH 33011

SEAL:



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**GENERAL NOTES**

SHEET NUMBER:	REVISION:
<b>G-003</b>	<b>3</b>

APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRAUT ROAD  
 HUDSON, NH 03051  
 LANDLORD SIGNATURE: \_\_\_\_\_

PROJECT SUMMARY

FIELD SURVEY DATE: 12/13/2016
SITE ADDRESS: 143 DRACUT ROAD HUDSON, NEW HAMPSHIRE 03051
PARCEL INFORMATION
OWNER: TOM W. & ROSA C. CHAN, JOSHUA M. & KRISTINE C. WILLETT
OWNER ADDRESS: 143 DRACUT ROAD, HUDSON, NH 03051
APN: BLOCK 259, LOT 11
TOTAL AREAS:
PARENT PARCEL: 11.816± ACRES ATC LEASE AREA: 10,000 SQ. FT.
GEOGRAPHIC COORDINATES OF TOWER:
LATITUDE: 42°42'00.15" N LONGITUDE: 71°23'27.40" W
VERTICAL DATUM: NAVD 1988 HORIZONTAL DATUM: NAD83
GROUND ELEVATION: 289'
THIS IS TO CERTIFY THAT THE ABOVE INFORMATION IS PROVIDED TO THE FOLLOWING ORIGINATOR(S):
± TWENTY (20) FEET IN THE HORIZONTAL
± THREE (3) FEET IN THE VERTICAL
\*BEARINGS ARE THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM AND ARE BASED ON GPS OBSERVATIONS.
FLOODPLAIN:
PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X.
COMMUNITY PANEL NO. : 330092
EFFECTIVE DATE: SEPTEMBER 25, 2009
BOUNDARY NOTE
THIS SURVEY IS THE RESULT OF AN ACTUAL FIELD SURVEY BASED UPON SUFFICIENT RESEARCH AND FIELD EVIDENCE TO VERIFY THE PARENT PARCEL OF THE SUBJECT PROPERTY. HOWEVER, THIS SURVEYOR HAS RELIED UPON THE DEEDS OF RECORD, AS PROVIDED. THIS SURVEYOR MAKES NO GUARANTEE, EITHER EXPRESSED OR IMPLIED AS TO THE QUALITY OF THE DEED REPORT AND REFERENCE DOCUMENTS PROVIDED AND THE DOCUMENTS PROVED AFFECTING THE LEASE AND IMMEDIATE AREA HAVE BEEN PLOTTED. THE BOUNDARY SHOWN HEREON IS PLOTTED FROM THE RECORD INFORMATION PROVIDED AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.
ENCROACHMENT NOTE
PROPOSED SITE: AT THE TIME OF THE SURVEY, NO VISIBLE ENCROACHMENTS WERE EVIDENT ONTO OR BEYOND THE LEASE OR EASEMENT AREA, PARENT PARCEL, OR THE ACCESS AND UTILITY EASEMENT(S).

SURVEYOR'S NOTES

- 1. THERE IS ACCESS TO THE SUBJECT PROPERTY VIA DRACUT ROAD, A PUBLIC RIGHT OF WAY.
2. THE LOCATIONS OF ALL UTILITIES SHOWN ON THE SURVEY ARE FROM VISIBLE SURFACE EVIDENCE ONLY.
3. AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVABLE SURFACE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.
4. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SUBJECT PROPERTY BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
5. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF ANY RECENT CHANGES IN STREET RIGHT-OF-WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION.
6. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF ANY RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
7. ANGLES OR BEARINGS SHOWN HEREON ARE FORMATTED IN DEGREES, MINUTES, AND SECONDS. DISTANCES OR ELEVATIONS SHOWN HEREON ARE IN U.S. SURVEY FEET, UNLESS NOTED OTHERWISE.
8. UNDERGROUND IMPROVEMENTS IF ANY AND NOT VISIBLE AT THE TIME OF THE SURVEY, HAVE NOT BEEN LOCATED IN THE FIELD OR SHOWN HEREON.
9. NOT ALL IMPROVEMENTS ON THE PARENT PARCEL BEING SURVEYED ARE SHOWN HEREON.
10. WETLAND FLAGS SHOWN AS DELINEATED BY ILEX WETLAND CONSULTANTS ON 05/10/16, AND FIELD SURVEYED ON 05/28/17.

REFERENCES

- A. DEED: BOOK 8643, PAGE 2424
B. MAP ENTITLED: "SITE PLAN" PREPARED BY MAYNARD & PAQUETTE ENGINEERING ASSOCIATES, LLC ON 01/20/04.
C. TITLE COMMITMENT PREPARED BY STEWART TITLE GUARANTY COMPANY AS TITLE NUMBER 153946NH, EFFECTIVE DATE 06/17/16 REVISED 08/01/16.

NOTES CORRESPONDING TO TITLE COMMITMENT

THE TITLE COMMITMENT PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY AS COMMITMENT NUMBER 29893496, COMMITMENT DATE 07/15/2020 CONTAINS THE FOLLOWING SURVEY RELATED ITEMS. NUMBERS 1-8, 11, 13-14 ARE NOT SURVEY RELATED
9. EASEMENT IN FAVOR OF NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY, A NEW YORK CORPORATION AND PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, A CORPORATION, THEIR SUCCESSORS AND ASSIGNS SET FORTH IN INSTRUMENT RECORDED ON MARCH 3, 1980 IN DEED BOOK 2754, PAGE 660. NOT PLOTTABLE. NO METES AND BOUNDS.
10. NOTICE OF CONDEMNATION IN FAVOR OF THE STATE OF NEW HAMPSHIRE SET FORTH IN INSTRUMENT RECORDED ON MAY 4, 1981 IN DEED BOOK 2838, PAGE 607.
12. SITE PLAN DEVELOPMENT AGREEMENT DATED AUGUST 31, 2004, BY AND BETWEEN MICHAEL KAZANJIAN AND TOWN OF HUDSON RECORDED ON SEPTEMBER 2, 2004 IN DEED BOOK 7312, PAGE 253. NOT PLOTTABLE. NOT SURVEY RELATED.
15. MORTGAGE FROM TOM W. CHAN, ROSA C. CHAN AND JOHN M. WILLETT AND KRISTINE C. WILLETT, GRANTOR(S), IN FAVOR OF MERRIMACK COUNTY SAVINGS BANK, DATED FEBRUARY 27, 2014, AND RECORDED MARCH 3, 2014 IN DEED BOOK 8643, PAGE 2427, IN THE ORIGINAL AMOUNT OF \$480,000.00. NOT PLOTTABLE. NOT SURVEY RELATED.
16. TERMS AND CONDITIONS OF MEMORANDUM OF LEASE AGREEMENT DATED MARCH 15, 2018, BY AND BETWEEN TOM W. CHAN AND ROSA C. CHAN AND JOSHUA M. WILLETT AND KRISTINE C. WILLETT AND AMERICAN TOWERS LLC, A DELAWARE LIMITED LIABILITY COMPANY, D/B/A AMERICAN NEW HAMPSHIRE TOWERS RECORDED ON MARCH 19, 2018 IN DEED BOOK 9056, PAGE 2930. NOT PLOTTABLE. NOT SURVEY RELATED.
AMENDMENT TO MEMORANDUM OF LEASE AGREEMENT RECORDED ON MARCH 22, 2019 IN DEED BOOK 9154, PAGE 1028. NOT PLOTTABLE. NOT SURVEY RELATED.
17. SUBORDINATION AND NON-DISTURBANCE AGREEMENT DATED MARCH 1, 2018, BY AND BETWEEN MERRIMACK COUNTY SAVINGS BANK AND AMERICAN TOWERS LLC, A DELAWARE LIMITED LIABILITY COMPANY, D/B/A AMERICAN NEW HAMPSHIRE TOWERS RECORDED ON MARCH 19, 2018 IN DEED BOOK 9057, PAGE 0137. NOT PLOTTABLE. NOT SURVEY RELATED.
18. EASEMENT DEED IN FAVOR OF PUBLIC SERVICE OF NEW HAMPSHIRE (PSNH), D/B/A EVERSOURCE ENERGY, A CORPORATION AND ITS SUCCESSORS SET FORTH IN INSTRUMENT RECORDED ON APRIL 19, 2018 IN DEED BOOK 9065, PAGE 322. NOT PLOTTABLE. NO METES AND BOUNDS.

CERTIFICATION

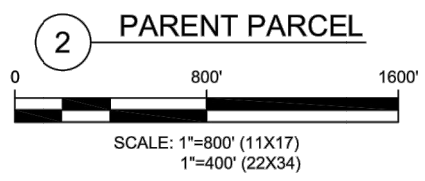
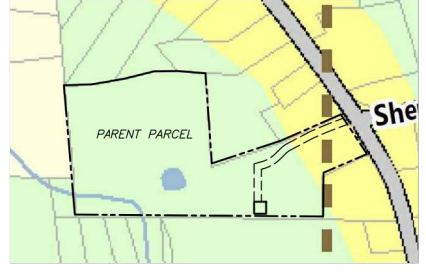
I HEREBY CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND, PERFORMED WITH AN ELECTRONIC TOTAL STATION, AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN 15,000 ON SUBJECT PARCEL AND ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.
FRANK H. WENZ IV, L.L.S.
03/11/2021
DATE

PLANNING BOARD

APPROVED BY THE HUDSON PLANNING BOARD
DATE OF MEETING:
PLANNING BOARD:
CHAIRMAN: SIGNATURE DATE:
SECRETARY: SIGNATURE DATE:
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVED FINAL APPROVAL.

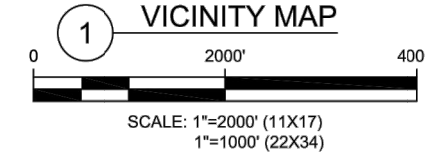
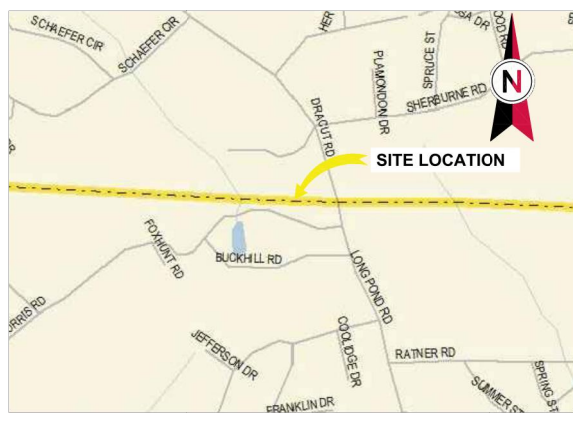
LANDLORD APPROVAL

PURSUANT TO THE SITE REVIEW REGULATIONS OF HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.
PROPERTY OWNER:
TOM W. & ROSA C. CHAN, JOSHUA M. & KRISTINE C. WILLETT
143 DRACUT ROAD
HUDSON, NH 03051
LANDLORD SIGNATURE:



SURVEY LEGEND

- EXISTING PROPERTY
--- EXISTING ADJ. PROPERTY
--- EXISTING LEASE
--- EXISTING EASEMENT
--- 290 EXISTING CONTOUR (MAJOR)
--- 285 EXISTING CONTOUR (MINOR)
--- EXISTING TREELINE
--- EXISTING CHAINLINK FENCE
--- EXISTING STONE WALL
--- UNDERGROUND ELECTRIC UNDERGROUND CABLE
--- EXISTING BUILDING
--- EXISTING CONCRETE
--- EXISTING ROAD (PAVED)
--- EXISTING ROAD (DIRT)
--- EXISTING WETLAND
--- EXISTING UTILITY POLE
--- EXISTING WELL
--- TPB EXISTING TELEPHONE PULLBOX
--- UPB EXISTING UTILITY PULLBOX
--- SURVEY BENCHMARK
--- PROPERTY CORNER
--- EXISTING STONE BOUND
--- EXISTING DRILL HOLE
--- WETLAND FLAG
--- TITLE REFERENCE #

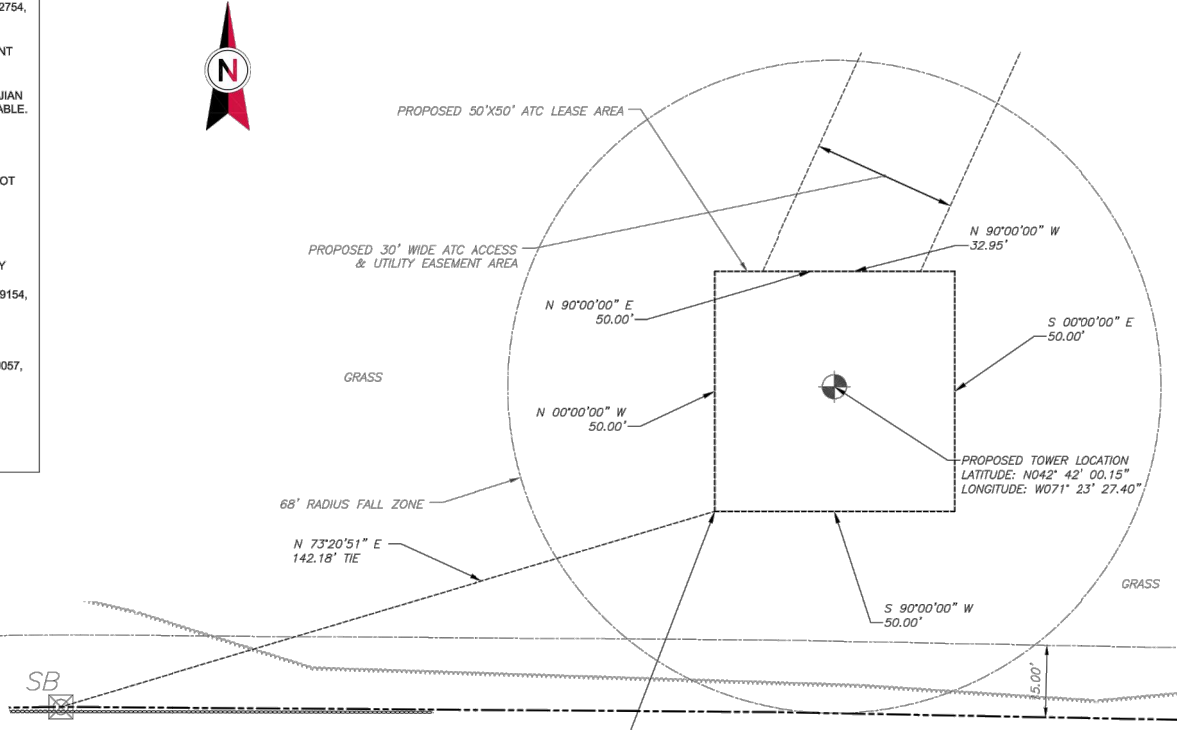
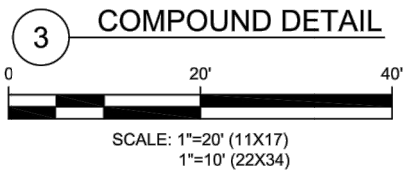


ZONING SETBACK REQUIREMENTS

Table with 3 columns: Zone District, R-2, G-1. Rows include Minimum Lot Area (Sq. Ft.), Minimum Lot Frontage (Linear Ft.), Local Roadways with Town Water and Sewer, Arterial and Collector, Building Setback Requirements (Ft.), and Local Roadways.

LEGAL DESCRIPTION

PARENT PARCEL - AS PROVIDED:
AN INTEREST IN LAND, SAID INTEREST BEING OVER A PORTING OF THE FOLLOWING DESCRIBED PARENT PARCEL:
A CERTAIN TRACT OF LAND WITH THE BUILDINGS THEREON, ON THE WEST SIDE OF THE ROAD FROM NASHUA TO LOWELL WHICH IS PART OF THE FORD FARM SITUATED IN HUDSON, HILLSBOROUGH COUNTY, AND STATE OF NEW HAMPSHIRE, BOUNDED AND DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON A STONE WALL AT THE SOUTHEASTERLY MOST CORNER OF THE PREMISES A DISTANCE OF 327.74 FEET WEST OF THE WEST SIDE OF DRACUT ROAD; THENCE NORTH 78-25-56 WEST A DISTANCE OF 86.24 FEET TO A HUB SET IN THE GROUND; THENCE NORTH 76-17-18 WEST A DISTANCE OF 252.32 FEET TO A POINT; THENCE NORTH 76-57-58 WEST A DISTANCE OF 147.87 FEET TO A STONE BOUND; THENCE NORTH 78-10-29 WEST A DISTANCE OF 115.43 FEET TO A HUB SET IN THE GROUND; THENCE 76-48-41 WEST A DISTANCE OF 426.15 FEET TO A HUB SET IN THE GROUND; THENCE TURNING AND RUNNING NORTH 08-13-30 EAST A DISTANCE OF 160.05 FEET TO A DRILL HOLE; THENCE NORTH 07-23-28 EAST A DISTANCE OF 99.73 FEET TO A DRILL HOLE; THENCE NORTH 07-34-33 EAST A DISTANCE OF 289.93 FEET TO A DRILL HOLE; THENCE TURNING AND RUNNING SOUTH 81-15-45 EAST A DISTANCE OF 118.84 FEET TO A DRILL HOLE; THENCE SOUTH 87-09-15 EAST A DISTANCE OF 137.96 FEET TO A POINT; THENCE NORTH 89-21-19 EAST A DISTANCE OF 127.02 FEET TO A POINT; THENCE SOUTH 78-30-00 EAST A DISTANCE OF 94.27 FEET TO A POINT; THENCE SOUTH 72-17-17 EAST A DISTANCE OF 118.73 FEET TO AN IRON PIPE SET IN THE GROUND; THENCE TURNING AND RUNNING SOUTH 09-21-56 WEST A DISTANCE OF 386.78 FEET TO A STONE BOUND; THENCE TURNING AND RUNNING NORTH 83-41-23 EAST A DISTANCE OF 304.05 FEET TO A STONE BOUND; THENCE NORTH 78-50-30 EAST A DISTANCE OF 301.68 FEET TO A STONE POST AT THE NORTHEASTERLY MOST CORNER OF THE PREMISES ON THE WEST SIDE OF DRACUT ROAD; THEN SOUTH 17-35-40 EAST A DISTANCE OF 220.65 FEET TO A POINT; THENCE A DISTANCE OF 36.56 FEET ALONG A CURVE HAVING A RADIUS OF 25 FEET TO A POINT; THENCE SOUTHWESTERLY A DISTANCE OF 193.153 FEET ALONG A LOT DESIGNATED AS LOT 2292-01 IN A PLAN HERINAFTER MENTIONED TO A POINT; THENCE TURNING AND RUNNING SOUTHERLY A DISTANCE OF 184.76 FEET ALONG SAID LOT 2292-01 IN A PLAN HERINAFTER MENTIONED TO THE POINT OF BEGINNING. THESE BOUNDARIES ENCLOSE AN AREA OF 11.816 ACRES.
LESS AND EXCEPT THAT PORTION OF PROPERTY CONVEYED TO THE STATE OF NEW HAMPSHIRE BY NOTICE OF CONDEMNATION DATED APRIL 30, 1981 AND RECORDED MAY 4, 1981 IN DEED BOOK 2838, PAGE 607
AND BEING THE SAME PROPERTY CONVEYED TO ROSA C. CHAN AND TOW W. CHAN AND JOSHUA M. WILLETT AND KRISTINE C. WILLETT FROM 143 DRACUT ROAD, LLC, A NEW HAMPSHIRE LIMITED LIABILITY COMPANY BY WARRANTY DEED DATED FEBRUARY 27, 2014 AND RECORDED MARCH 3, 2014 IN DEED BOOK 8643, PAGE 2424.
TAX PARCEL NO. 259-011-000
ATC LEASE AREA - AS SURVEYED (PROPOSED):
ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND SITUATE, LYING AND BEING IN THE TOWN OF HUDSON, COUNTY OF HILLSBOROUGH, STATE OF NEW HAMPSHIRE, SAID BEING A PORTION OF PARCEL ID 259-011-000 AS DESIGNATED ON THE HILLSBOROUGH COUNTY TAX MAPS, BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHWESTERLY CORNER OF THE HEREIN DESCRIBED ATC LEASE AREA SAID POINT BEING NORTH 73°20'51" EAST FOR A DISTANCE OF 142.18 FEET TO A POINT WHOSE STATE PLANE COORDINATE IS 72997.80 NORTH AND 1058342.53 EAST; RUNNING THENCE
NORTH 00°00'00" WEST FOR A DISTANCE OF 50.00 FEET TO A POINT; THENCE
NORTH 90°00'00" EAST FOR A DISTANCE OF 50.00 FEET TO A POINT; THENCE
SOUTH 00°00'00" EAST FOR A DISTANCE OF 50.00 FEET TO A POINT; THENCE
SOUTH 90°00'00" WEST FOR A DISTANCE OF 50.00 FEET TO THE POINT OF BEGINNING.
CONTAINING 2,500 SQUARE FEET
ATC ACCESS & UTILITY EASEMENT - AS SURVEYED (PROPOSED):
ALL THAT CERTAIN PLOT, PIECE OR PARCEL OF LAND SITUATE, LYING AND BEING IN THE TOWN OF HUDSON, COUNTY OF HILLSBOROUGH, STATE OF NEW HAMPSHIRE, SAID BEING A PORTION OF PARCEL ID 259-011-000 AS DESIGNATED ON THE HILLSBOROUGH COUNTY TAX MAPS, BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT WHOSE STATE PLANE COORDINATE IS 73367.69 NORTH AND 1058781.80 EAST SAID POINT BEING ON THE WESTERLY SIDELINE OF DRACUT ROAD, SAID POINT BEING NORTH 69°58'47" EAST FOR A DISTANCE OF 280.70 FEET FROM A STONE BOUND ALONG THE NORTHERN PROPERTY BOUNDARY HEREIN; RUNNING THENCE
ALONG THE SOUTHWESTERLY SIDELINE OF DRACUT ROAD, SOUTH 33°36'09" EAST FOR A DISTANCE OF 30.73 FEET TO A POINT; THENCE
LEAVING SAID SIDELINE, SOUTH 88°56'29" WEST FOR A DISTANCE OF 91.88 FEET TO A POINT; THENCE
SOUTH 68°40'58" WEST FOR A DISTANCE OF 60.76 FEET TO A POINT; THENCE
SOUTH 62°27'01" WEST FOR A DISTANCE OF 86.80 FEET TO A POINT; THENCE
SOUTH 61°15'39" WEST FOR A DISTANCE OF 21.56 FEET TO A POINT; THENCE
ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 70.00 FEET WITH AN ARC LENGTH OF 19.51 FEET AND WHOSE LONG CHORD BEARS S 53°16'30" W FOR A DISTANCE OF 18.45 FEET TO A POINT; THENCE
SOUTH 45°17'20" WEST FOR A DISTANCE OF 35.42 FEET TO A POINT; THENCE
ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 160.00 FEET WITH AN ARC LENGTH OF 82.19 FEET AND WHOSE LONG CHORD BEARS S 60°00'18" W FOR A DISTANCE OF 81.29 FEET TO A POINT; THENCE
SOUTH 74°43'15" WEST FOR A DISTANCE OF 17.74 FEET TO A POINT; THENCE
SOUTH 24°28'15" WEST FOR A DISTANCE OF 115.36 FEET TO A POINT ALONG THE NORTHERLY SIDELINE OF THE ABOVE DESCRIBED LEASE AREA; THENCE
ALONG SAID SIDELINE, NORTH 90°00'00" WEST FOR A DISTANCE OF 32.95 FEET TO A POINT; THENCE
LEAVING SAID SIDELINE, NORTH 24°28'15" EAST FOR A DISTANCE OF 143.07 FEET TO A POINT; THENCE
NORTH 74°43'15" EAST FOR A DISTANCE OF 31.82 FEET TO A POINT; THENCE
ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 130.00 FEET WITH AN ARC LENGTH OF 66.78 FEET AND WHOSE LONG CHORD BEARS N 60°00'18" E FOR A DISTANCE OF 66.05 FEET TO A POINT; THENCE
NORTH 45°17'20" EAST FOR A DISTANCE OF 35.42 FEET TO A POINT; THENCE
ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 100.00 FEET WITH AN ARC LENGTH OF 27.88 FEET AND WHOSE LONG CHORD BEARS N 53°16'30" E FOR A DISTANCE OF 27.79 FEET TO A POINT; THENCE
NORTH 61°15'39" EAST FOR A DISTANCE OF 21.87 FEET TO A POINT; THENCE
NORTH 62°27'01" EAST FOR A DISTANCE OF 86.21 FEET TO A POINT; THENCE
NORTH 68°40'58" EAST FOR A DISTANCE OF 62.46 FEET TO A POINT; THENCE
NORTH 68°55'29" EAST FOR A DISTANCE OF 85.80 FEET TO THE POINT OF BEGINNING.
CONTAINING 16,418 SQUARE FEET



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AMERICAN TOWER®
ATC TOWER SERVICES, INC
3533 REGENCY PARKWAY
SUITE 133
CARY, NC 27551
PHONE: (919) 468-0145
COA: D-0204

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Table with 4 columns: REV., DESCRIPTION, BY, DATE. Rows 12, 13, 14.

ATC SITE NUMBER: 202096
ATC SITE NAME: HUDSON NH
SITE ADDRESS: 143 DRACUT ROAD HUDSON, NEW HAMPSHIRE 03051

SURVEY CERTIFICATE:
TO AMERICAN TOWER CORPORATION:
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 6(B), 7(A), 7(B)(1), 7(C), 8, 9, 11, AND 13 TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 08/03/2020.

DATE OF PLAT OR MAP: 03/11/2021
(SIGNED) NAME: FRANK H. WENZ IV, L.L.S. 970

Tectonic Engineering & Surveying Consultants P.C.
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
70 Pleasant Hill Road
P.O. Box 37
Mountaintop, NY 10953
Phone: (845) 534-5959
(800) 929-5531
www.tectonicengineering.com

Table with 2 columns: DRAWN BY, APPROVED BY, DATE DRAWN, ATC JOB NO. Values: SA, FHW, 12/16/16, 202096.

COMPOUND DETAIL & DESCRIPTIONS
SHEET NUMBER: V-101
REVISION: 14

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REV.	DESCRIPTION	BY	DATE
12	PER COMMENTS	FW	02/11/20
13	PER COMMENTS	SW	08/05/20
14	PER COMMENTS	FW	03/11/21

ATC SITE NUMBER:

**202096**

ATC SITE NAME:

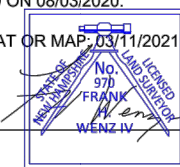
**HUDSON  
NH**

SITE ADDRESS:  
 143 DRACUT ROAD  
 HUDSON, NEW HAMPSHIRE 03051

**SURVEY CERTIFICATE:**  
 TO AMERICAN TOWER CORPORATION:  
 THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 6(B) (TO THE EXTENT, GRAPHICALLY DEPICT ON SURVEY DRAWING THE ZONING SETBACK LINES), 7(A), 7(B)(1), 7(C), 8, 9, 11, AND 13 TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 08/03/2020.

DATE OF PLAT OR MAP: 03/11/2021

(SIGNED)  
NAME:



FRANK H. WENZ IV, L.L.S. 970

SURVEY LOGO:



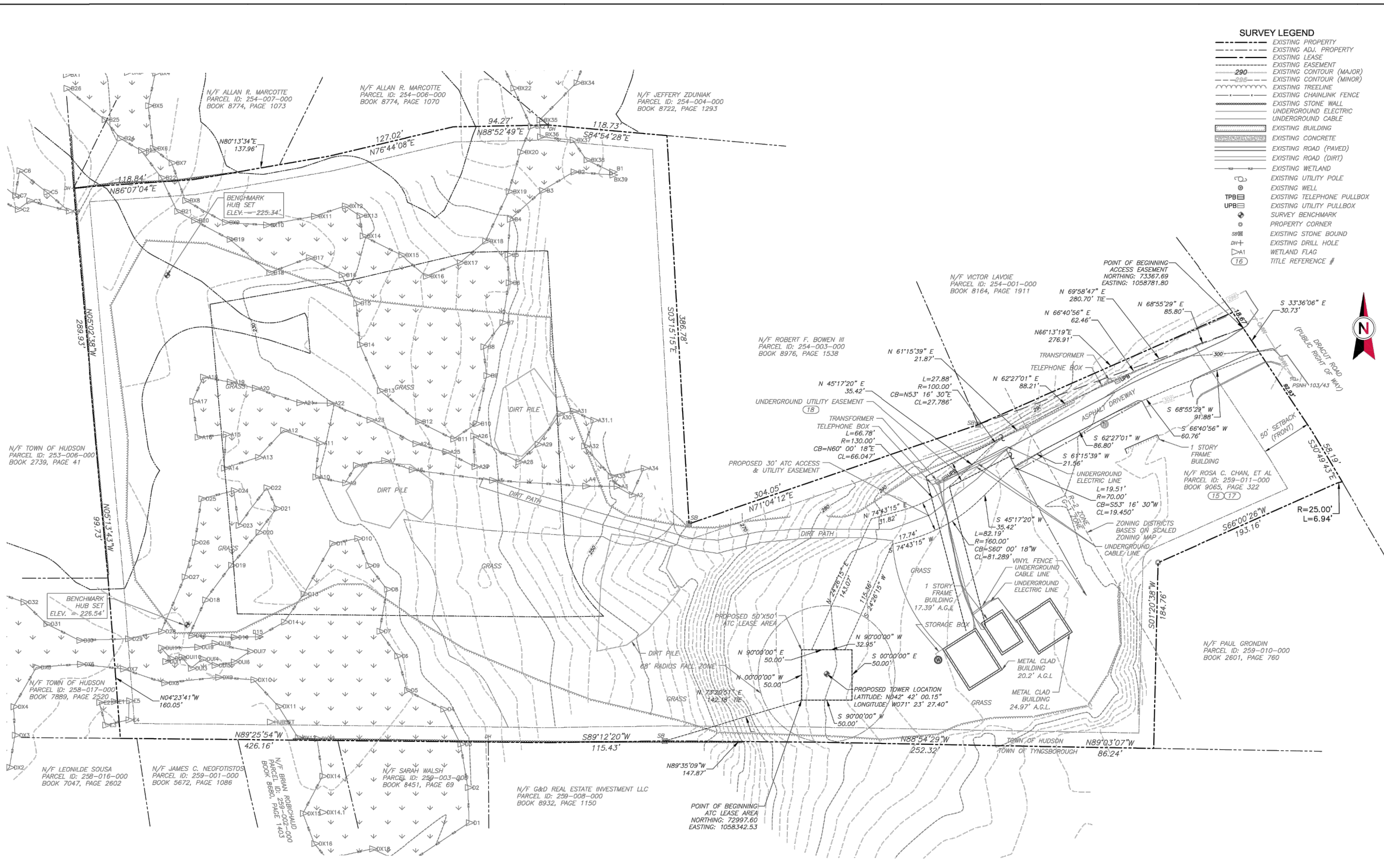
**Tectonic<sup>7</sup>**  
 PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.  
 Tectonic Engineering & Surveying Consultants P.C.  
 70 Pleasant Hill Road Phone: (845) 534-5959  
 P.O. Box 37 Mountville, NY 10953 (800) 829-6531  
 www.tectonicengineering.com

DRAWN BY:	SA
APPROVED BY:	FHW
DATE DRAWN:	12/16/16
ATC JOB NO:	202096

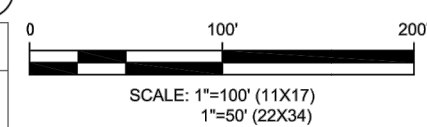
**EXISTING CONDITIONS**

SHEET NUMBER:  
**V-102**

REVISION:  
**14**



**4 EXISTING CONDITIONS PLAN**



**PLANNING BOARD**

APPROVED BY THE HUDSON PLANNING BOARD

DATE OF MEETING: \_\_\_\_\_  
 PLANNING BOARD: \_\_\_\_\_

CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVED FINAL APPROVAL.

**LANDLORD APPROVAL**

PURSUANT TO THE SITE REVIEW REGULATIONS OF HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN; JOSHUA M. & KRISTINE C. WILLETT  
 143 DRACUT ROAD  
 HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

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ZONING INFORMATION

PARCEL SPANS TWO DISTRICTS:  
G-1 (GENERAL 1) - TOWER LOCATION  
R-2 (RESIDENTIAL 2)

	REQUIRED:	TOWER:	TMOBILE:	FENCE:
MIN AREA:	2 ACRES	11.81 ACRES	N/A	N/A
MAX HEIGHT:	N/A	155' A.G.L.	N/A	N/A
MIN FRONTAGE:	N/A	N/A	N/A	N/A
MIN DEPTH:	NONE	N/A	N/A	N/A
MIN FRONT YARD SETBACK:	50'	756'-11"	235'-9"	233'-6"
MIN SIDE YARD SETBACK:	15'	40'-6"	19'-11"	16'-0"
MIN REAR YARD SETBACK:	15'	772'-9"	783'-1"	748'-2"

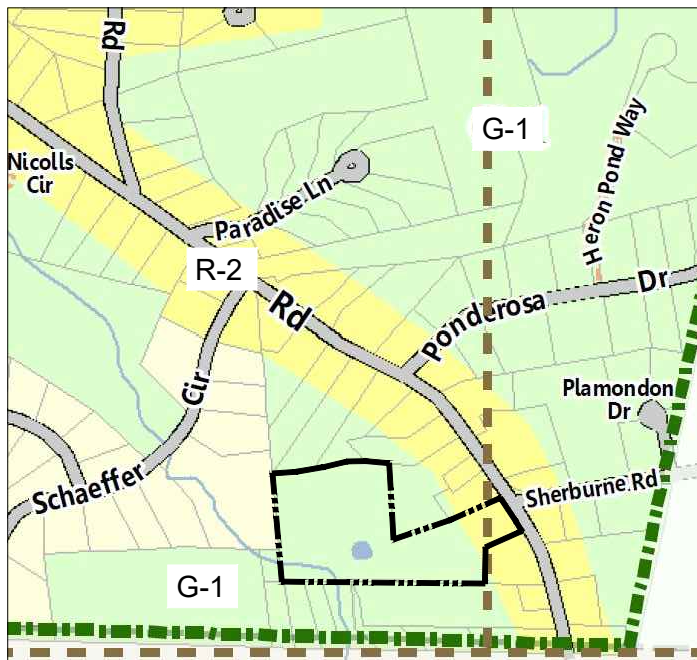
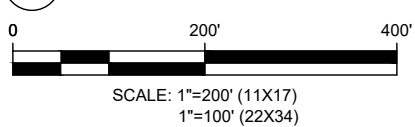
PARCEL NOTES:

1. PARENT PARCEL BOUNDARY WAS OBTAINED FROM SURVEY PLAN DATED 08/05/20 BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C.
2. ABUTTING PARCEL BOUNDARIES WERE OBTAINED FROM TOWN OF HUDSON ONLINE GIS.



PARENT PARCEL  
TOM W. CHAN  
PARCEL #:  
259-011  
11.81 ACRES  
(514444 SF)

1 GIS PARCEL IMAGE



2 ZONING BOUNDARY

SCALE: NOT TO SCALE

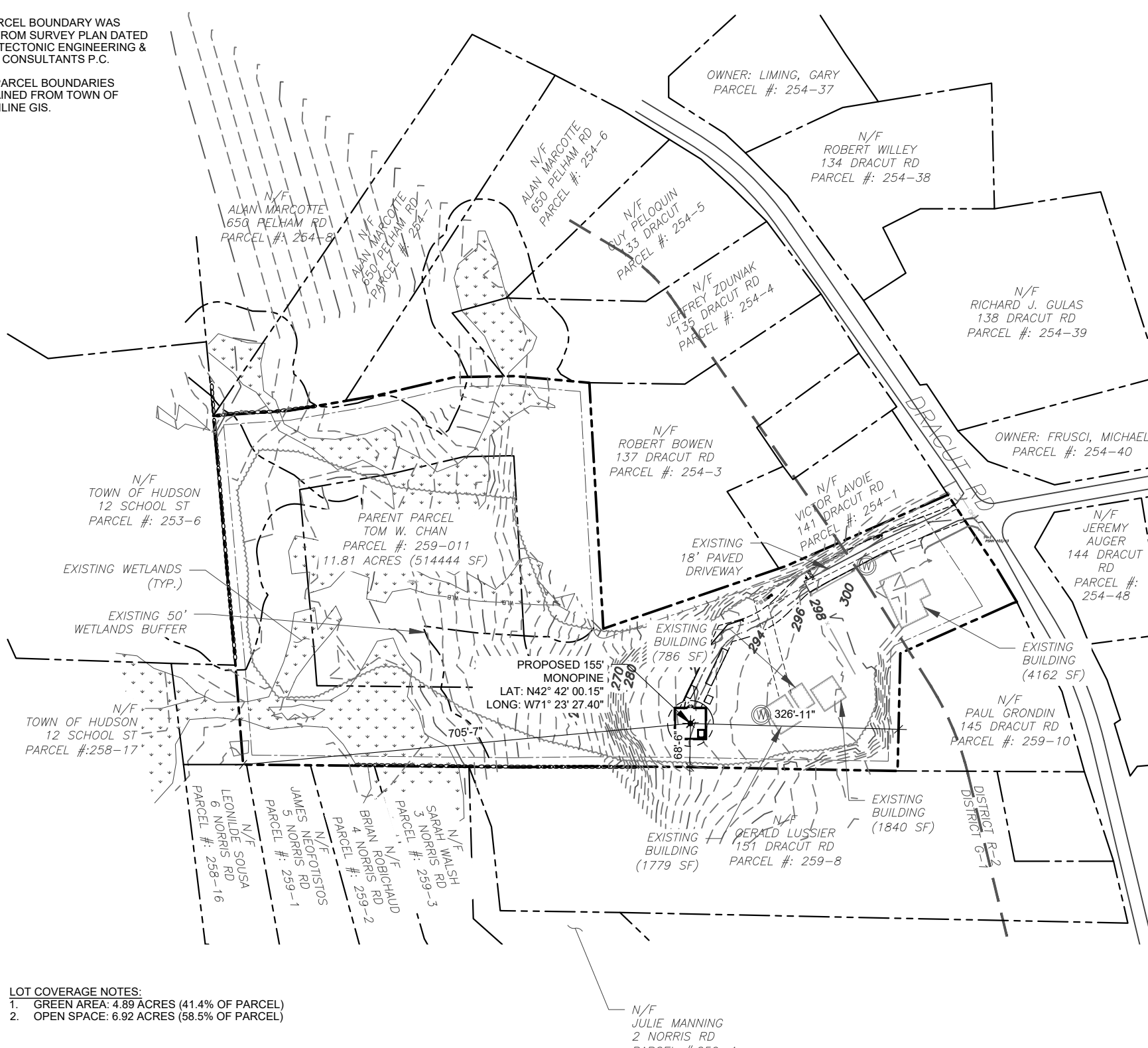
APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_  
PLANNING BOARD:  
CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

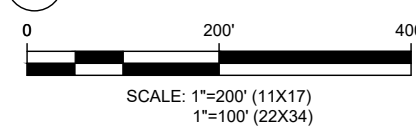
PROPERTY OWNER:  
TOM W. & ROSA C. CHAN  
143 DRAUT ROAD  
HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_



- LOT COVERAGE NOTES:
1. GREEN AREA: 4.89 ACRES (41.4% OF PARCEL)
  2. OPEN SPACE: 6.92 ACRES (58.5% OF PARCEL)

3 OVERALL SITE PLAN



LEGEND

	EXISTING PROPERTY
	EXISTING ADJ. PROPERTY
	EXISTING EASEMENT
	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	EXISTING TREELINE
	EXISTING CHAINLINK FENCE
	EXISTING BUILDING
	EXISTING LEASE AREA
	EXISTING ROAD (PAVED)

**AMERICAN TOWER®**  
dba SPECIALTY TOWER SERVICES  
3500 REGENCY PARKWAY  
SUITE 100  
CARY, NC 27518  
PHONE: (919) 468-0112  
COA: 1571

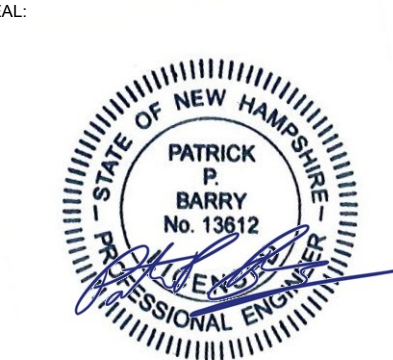
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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NW	11/09/20
3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:  
**202096**

ATC SITE NAME:  
**HUDSON 3 NH**

SITE ADDRESS:  
143 DRACUT ROAD  
HUDSON, NH 33011



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

OVERALL SITE PLAN

SHEET NUMBER:  
**C-101**

REVISION:  
**3**

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**SOIL CLASSIFICATIONS:**

CaD-CANTON FINE SANDY LOAM (15-25% SLOPES)

CaB-CANTON FINE SANDY LOAM (0-8% SLOPES)

CmD-CANTON FINE SANDY LOAM, VERY STONY (15-25% SLOPES)

CUT/FILL VOLUMES	CUT (yd <sup>3</sup> )	FILL (yd <sup>3</sup> )	NET (yd <sup>3</sup> )	
ACCESS ROAD	7.64	41.02	33.38	FILL
COMPOUND	29.16	19.96	-9.2	FILL
		TOTAL	24.18	FILL

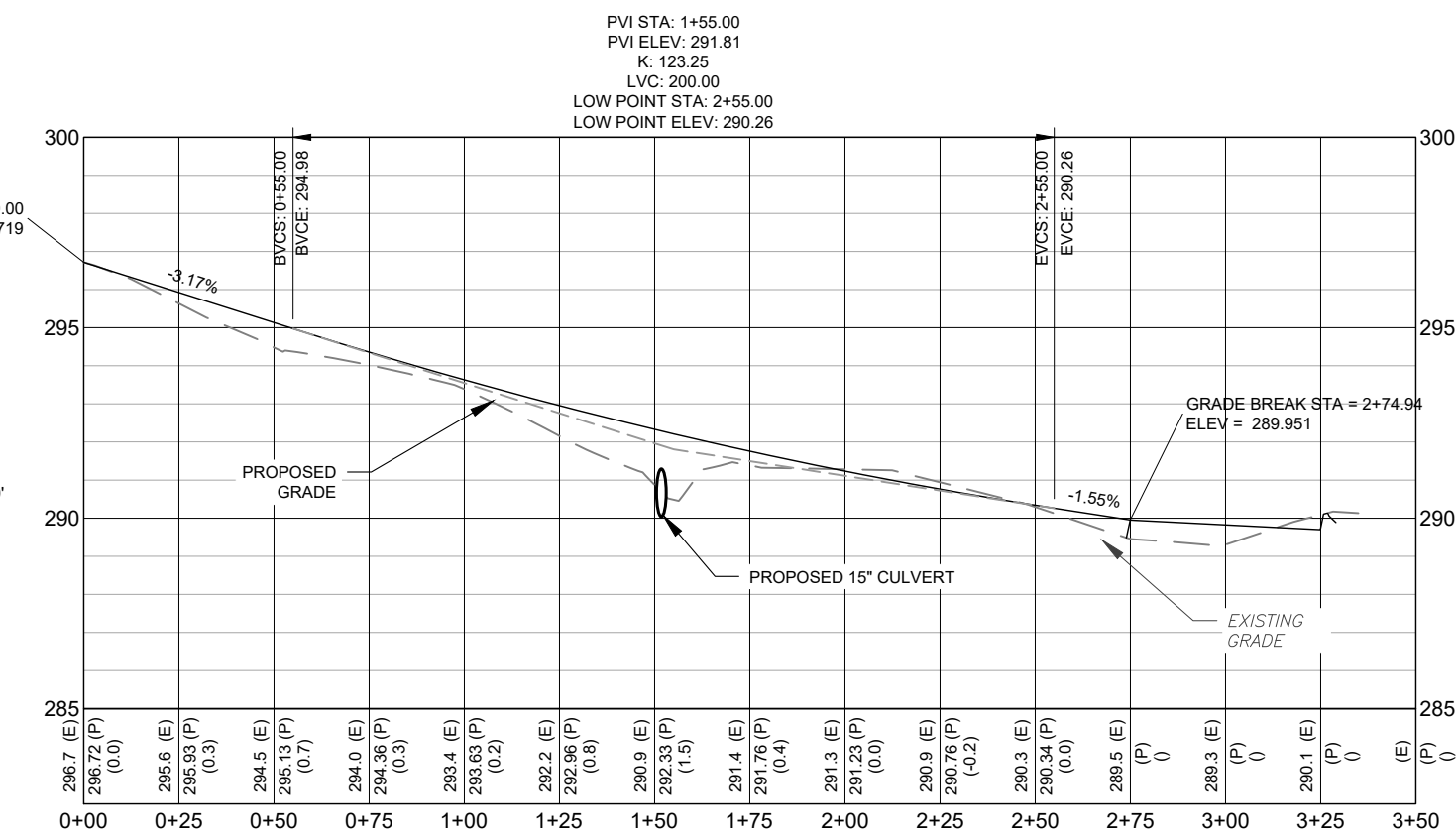
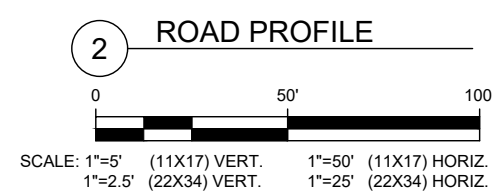
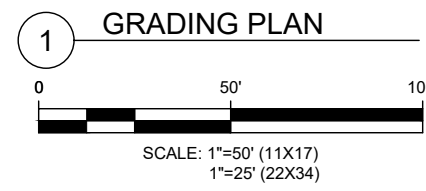
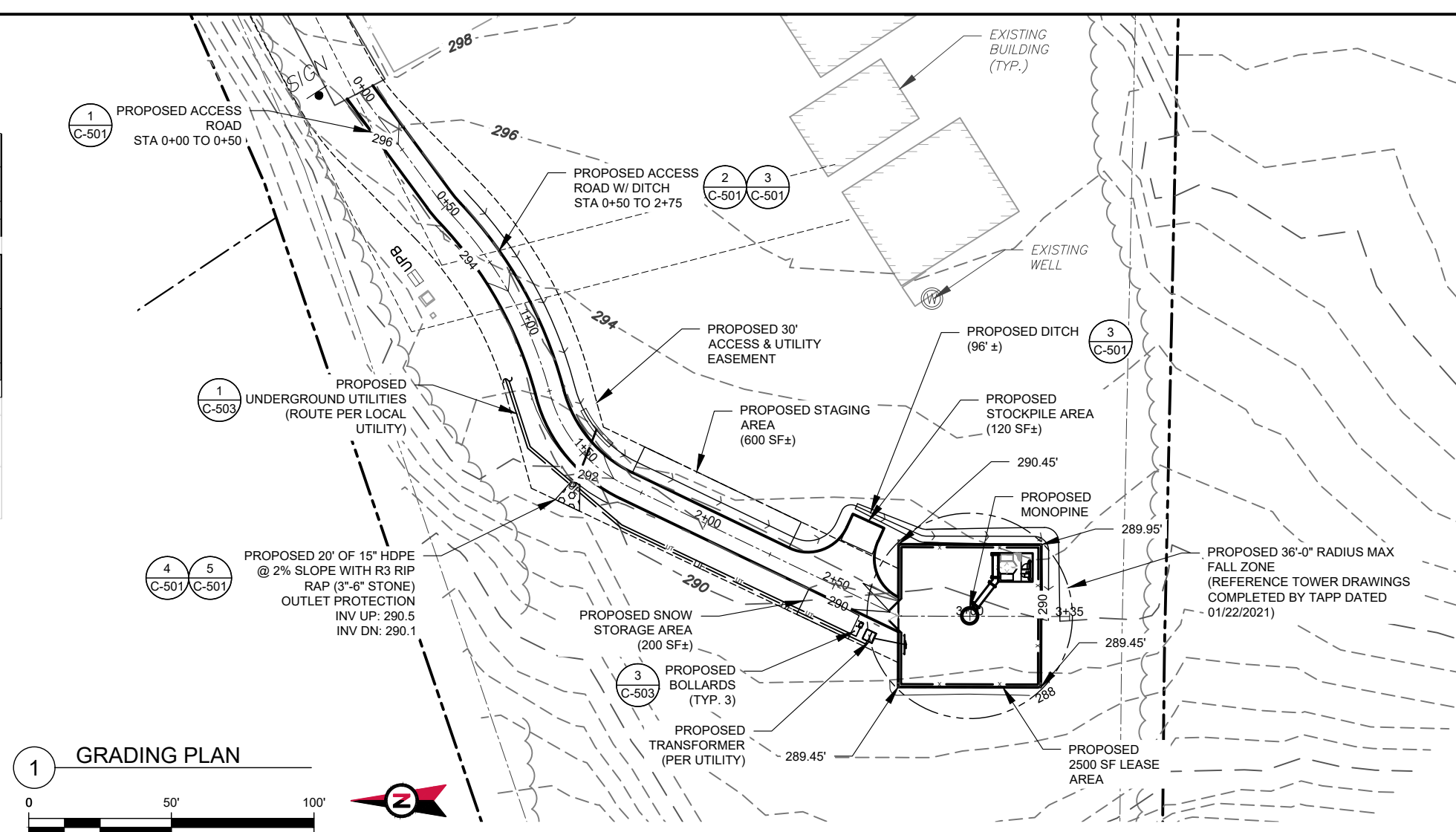
STONE REQUIRED FOR ROAD	AVE STONE DEPTH (in)	WIDTH (feet)	LENGTH (feet)	STONE IMPORT (yd <sup>3</sup> )	STONE IMPORT (TONS)
COMPOUND	6	50	50	46.3	63.0
ROAD COARSE	6	12	282	62.7	85.3
			TOTAL	109.0	148.3

\* CUT / FILL CALCULATIONS ARE APPROXIMATE. THE AMOUNT OF TOPSOIL THAT WILL NEED TO BE REMOVED AND THE COMPACTION AND SHRINKAGE FACTORS WILL VARY BASED ON SITE CONDITIONS.

\* AMOUNT OF STONE TO IMPORT IS APPROXIMATE. THE CONTRACTOR SHALL FOLLOW THE DETAILS ON THE PLANS TO THE APPROPRIATE STONE DEPTHS

\*ENVIRONMENTAL ASSESSMENT REPORT COMPLETED BY AQUAETER, INC. DATED SEPTEMBER 22, 2020.

- LEGEND**
- EXISTING PROPERTY
  - - - EXISTING ADJ. PROPERTY
  - - - EXISTING EASEMENT
  - XXX--- EXISTING CONTOUR (MAJOR)
  - XXX--- EXISTING CONTOUR (MINOR)
  - ~ ~ ~ EXISTING TREELINE
  - x x x EXISTING CHAINLINK FENCE
  - ▨ EXISTING BUILDING
  - - - EXISTING LEASE AREA
  - == EXISTING ROAD (PAVED)
  - PROPOSED DITCH
  - SD---SD--- PROPOSED CULVERT
  - ▨ PROPOSED WATERBAR
  - ▲ PROPOSED OUTLET PROTECTION
  - == PROPOSED ACCESS ROAD
  - XXX--- PROPOSED CONTOUR (MINOR)
  - XXX--- PROPOSED CONTOUR (MAJOR)
  - x x x PROPOSED FENCE
  - LOD---LOD--- PROPOSED LOD
  - SF---SF--- PROPOSED SILT FENCE
  - UE--- PROPOSED UNDERGROUND POWER
  - UT--- PROPOSED UNDERGROUND TELCO



APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRAUT ROAD  
 HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

**AMERICAN TOWER®**  
 dba SPECIALTY TOWER SERVICES  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: 1571

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NW	11/09/20
3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:  
**202096**

ATC SITE NAME:  
**HUDSON 3 NH**

SITE ADDRESS:  
 143 DRACUT ROAD  
 HUDSON, NH 33011

SEAL:

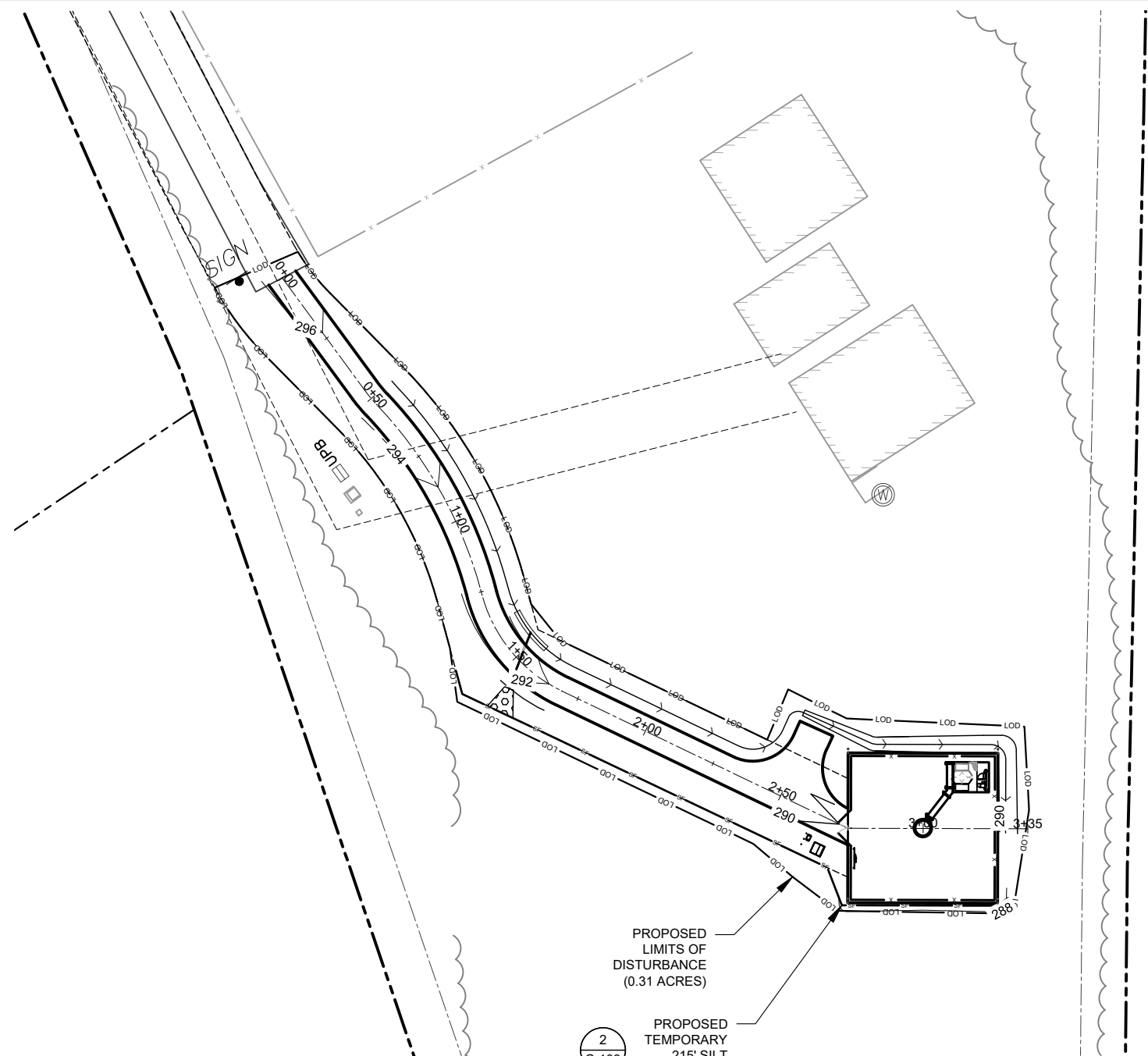
DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**GRADING PLAN & PROFILE**

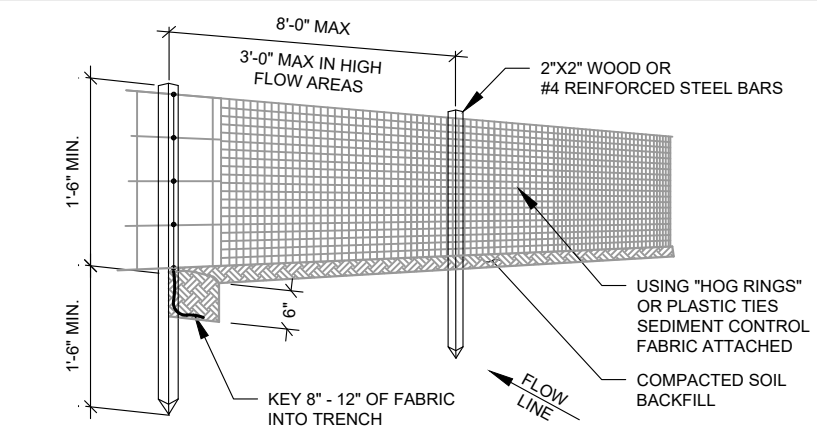
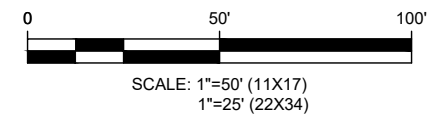
SHEET NUMBER:  
**C-102**

REVISION:  
**3**

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**1 EROSION & SEDIMENT CONTROL PLAN**



**NOTES:**

- FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL STAKES.
- SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
- SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
- ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED.
- FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

**AMERICAN TOWER MASTER SPECIFICATION:**

- DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

**2 SILT FENCE DETAIL**  
SCALE: NOT TO SCALE

**LEGEND**

	EXISTING PROPERTY
	EXISTING ADJ. PROPERTY
	EXISTING EASEMENT
	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
	EXISTING TREELINE
	EXISTING CHAINLINK FENCE
	EXISTING BUILDING
	EXISTING LEASE AREA
	EXISTING ROAD (PAVED)
	PROPOSED DITCH
	PROPOSED CULVERT
	PROPOSED WATERBAR
	PROPOSED OUTLET PROTECTION
	PROPOSED ACCESS ROAD
	PROPOSED CONTOUR (MINOR)
	PROPOSED CONTOUR (MAJOR)
	PROPOSED FENCE
	PROPOSED LOD
	PROPOSED SILT FENCE
	PROPOSED UNDERGROUND POWER
	PROPOSED UNDERGROUND TELCO

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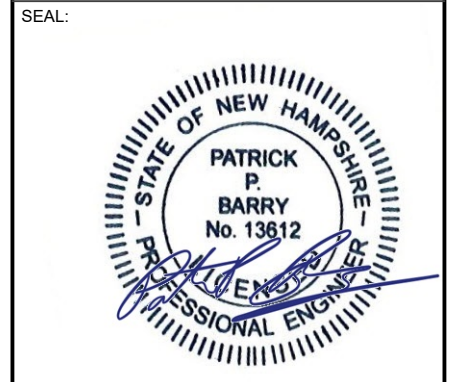
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ATC SITE NUMBER:  
**202096**

ATC SITE NAME:  
**HUDSON 3 NH**

SITE ADDRESS:  
143 DRACUT ROAD  
HUDSON, NH 33011



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**EROSION & SEDIMENT CONTROL PLAN**

SHEET NUMBER: **C-103**      REVISION: **3**

APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_  
PLANNING BOARD:  
CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
TOM W. & ROSA C. CHAN  
143 DRAUT ROAD  
HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

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ATC SITE NAME:

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SITE ADDRESS:

143 DRACUT ROAD  
 HUDSON, NH 33011

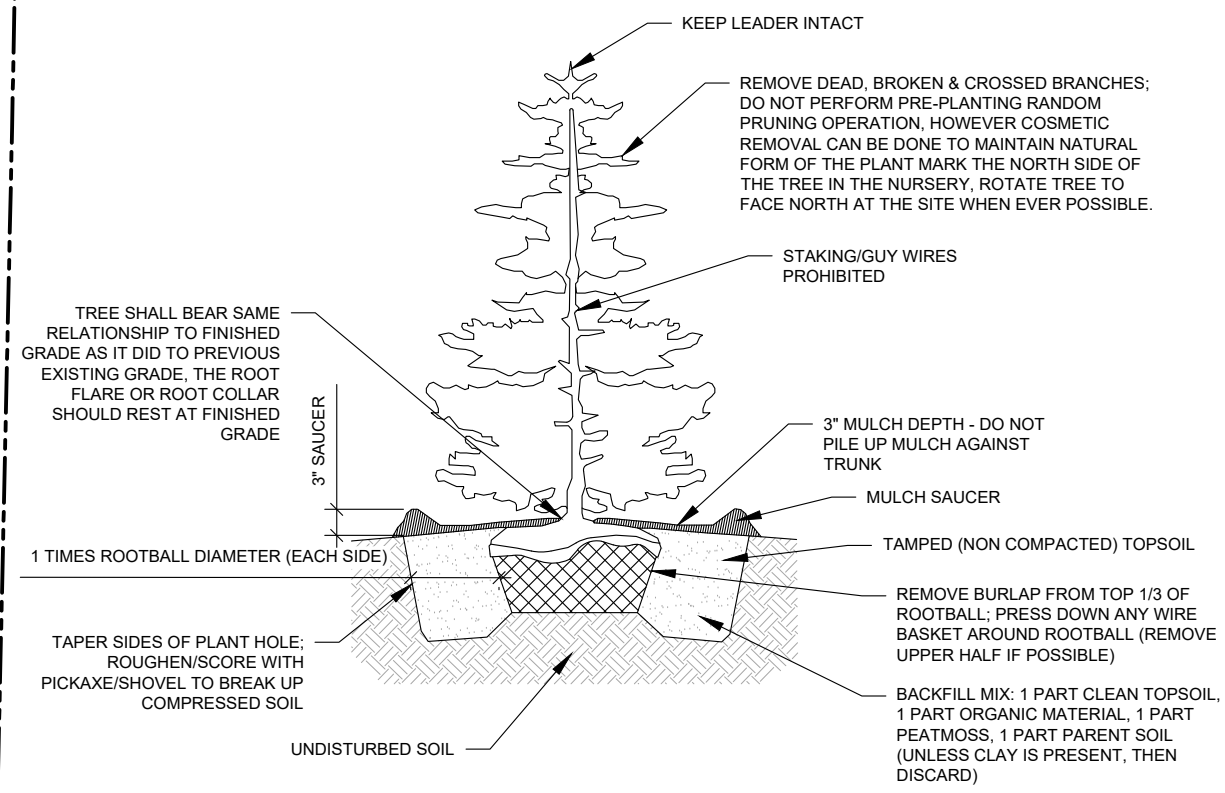
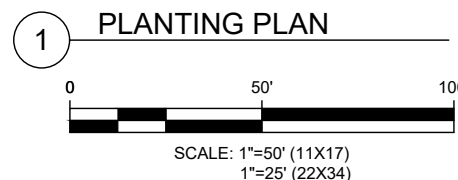
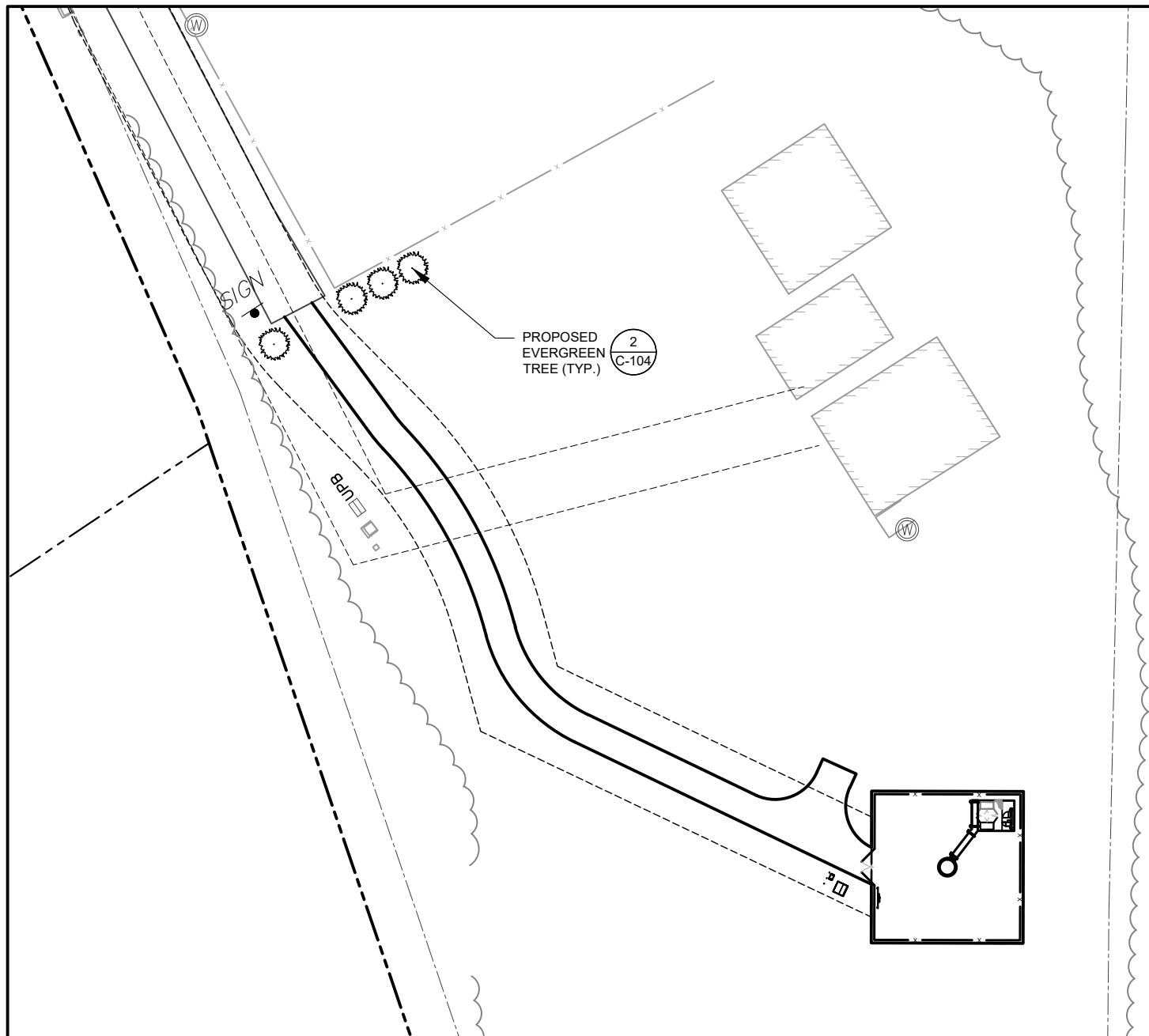
SEAL:



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**PLANTING PLAN**

SHEET NUMBER: **C-104** REVISION: **3**



**2 TYPICAL EVERGREEN TREE PLANTING DETAIL**  
 SCALE: NOT TO SCALE

**NOTES:**

- CONTRACTOR TO VERIFY THAT ADEQUATE DRAINAGE EXISTS PRIOR TO PLANTING.
- DO NOT WRAP TRUNK OF TREE.
- STAKING OF TREES IS NOT RECOMMENDED, EXCEPT ON WINDY SITE OR FOR LARGE EVERGREEN TREES. IF STAKING IS DONE, FLEXIBLE STRAPS - NOT HOSE AND WIRE - SHOULD BE USED AND MUST BE REMOVED AT APPROPRIATE TIME. ATC IS RESPONSIBLE FOR THE REPLACEMENT OF DESTROYED OR DAMAGED TREES.
- ALL TREES SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.).
- TREE WITH ROOT FLARE COVERED BY MORE THAN 1.5" OF SOIL WILL BE REJECTED PRIOR TO INSTALLATION.

**LEGEND**

- EXISTING PROPERTY
- - - EXISTING ADJ. PROPERTY
- - - EXISTING EASEMENT
- - XXX - - EXISTING CONTOUR (MAJOR)
- - XXX - - EXISTING CONTOUR (MINOR)
- - - - - EXISTING TREELINE
- x - x - EXISTING CHAINLINK FENCE
- [Hatched Box] EXISTING BUILDING
- - - - - EXISTING LEASE AREA
- ==== EXISTING ROAD (PAVED)
- - - - - PROPOSED DITCH
- SD - SD - PROPOSED CULVERT
- [Hatched Box] PROPOSED WATERBAR
- [Triangle Symbol] PROPOSED OUTLET PROTECTION
- ==== PROPOSED ACCESS ROAD
- - - - - XXX - - - PROPOSED CONTOUR (MINOR)
- - - - - XXX - - - PROPOSED CONTOUR (MAJOR)
- x - x - PROPOSED FENCE
- LOD - LOD - PROPOSED LOD
- SF - SF - PROPOSED SILT FENCE
- - - - - UE - - - PROPOSED UNDERGROUND POWER
- - - - - UT - - - PROPOSED UNDERGROUND TELCO

PROPOSED PLANTING TABLE					
SPECIES:	QTY:	MIN. CALIPER SIZE	MAX HEIGHT	SPACING	MAX WIDTH
ARBORVITAE (GREEN GIANT)	4	3" CALIPER	50-60'	12' O/C	10-12'

APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRAUT ROAD  
 HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

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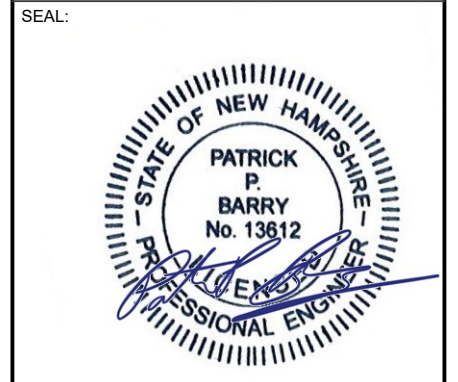
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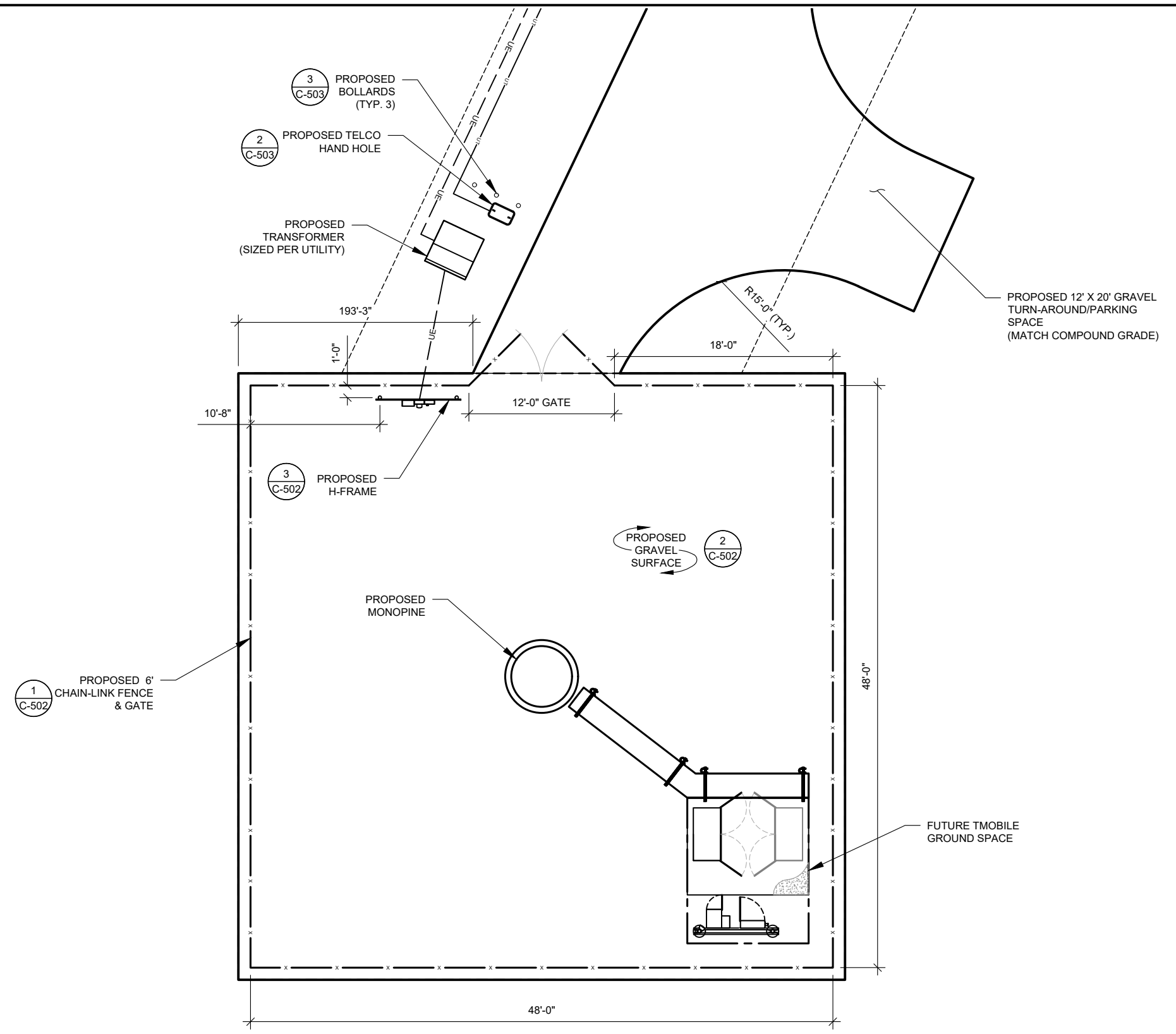
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DATE DRAWN:	11/09/20
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ATC LEGACY #:	----

**COMPOUND PLAN**

SHEET NUMBER: <b>C-401</b>	REVISION: <b>3</b>
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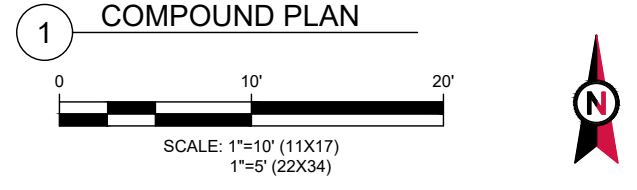
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 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

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SEAL:



DATE DRAWN:	11/09/20
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ATC LEGACY #:	----

**TOWER ELEVATION**

SHEET NUMBER:  
**C-402**

REVISION:  
**3**

PROPOSED TOP OF TOWER  
 ELEV 155' A.G.L.  
 ELEV 450.09' AMSL

- PROPOSED TMOBILE ANTENNAS  
RAD CENTER @ 150' A.G.L.
- FUTURE CARRIER ANTENNAS  
RAD CENTER @ 140' A.G.L.
- FUTURE CARRIER ANTENNAS  
RAD CENTER @ 130' A.G.L.
- FUTURE CARRIER ANTENNAS  
RAD CENTER @ 120' A.G.L.

PROPOSED MONOPINE  
 (SEE TOWER NOTES)

TOWER NOTES:

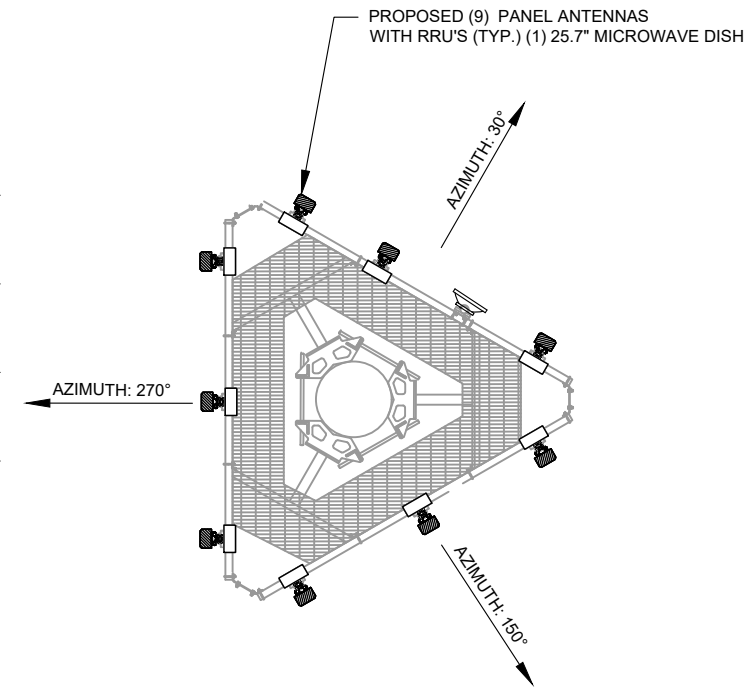
1. INSTALL (3) 1-5/8" HYBRID CABLES INSIDE MONOPINE.
2. NO LIGHTING IS REQUIRED BY FAA.
3. BRANCHING SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND DOES NOT REPRESENT THE FINAL DESIGN.

BOTTOM OF BRANCHING  
 ELEV 15' A.G.L.

CHAIN-LINK FENCE  
 ELEV. 6'

FINISHED GRADE

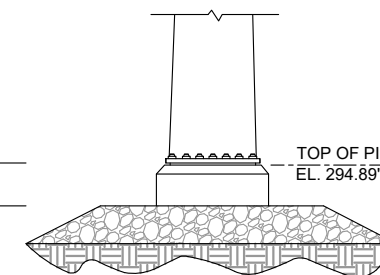
**1** TOWER ELEVATION  
 SCALE: NOT TO SCALE



**2** PROPOSED ANTENNA MOUNTING DETAIL (PLAN VIEW)  
 SCALE: NOT TO SCALE

BOTTOM OF PLATE  
 EL. 295.09' (AMSL)  
 FINISHED GRADE  
 EL. 294.39' (AMSL)

TOP OF PIER  
 EL. 294.89' (AMSL)



**3** TOWER BASE ELEVATION  
 SCALE: NOT TO SCALE

APPROVED BY THE HUDSON, NH PLANNING BOARD

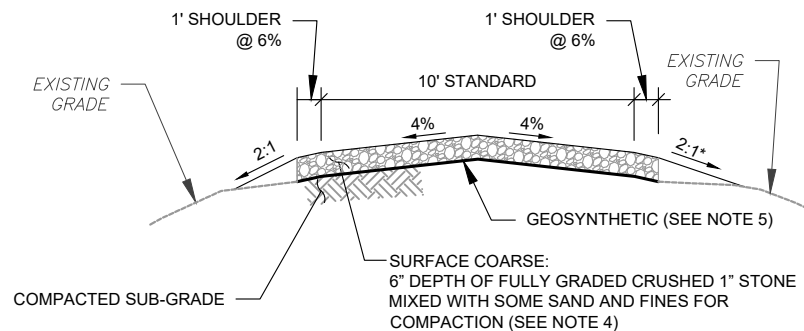
DATE OF MEETING \_\_\_\_\_  
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 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
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PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
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 HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_



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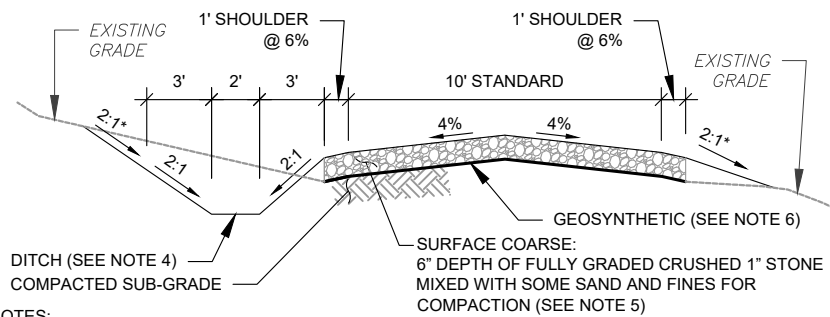
- SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED. REMOVE ALL TOP SOIL AND ORGANICS BEFORE COMMENCING ACCESS ROAD OR A MIN. DEPTH OF 6".
- TYPICAL ACCESS ROAD COMPACTION SHALL BE WITH SHEEPSFOOT ROLLER OR RUBBER TIERED ROLLERS WEIGHING AT LEAST EIGHT TONS FOR BASE COURSE AND SMOOTH DRUM VIBRATOR ROLLERS FOR SURFACE COURSE/FINISH GRADE.
- THE PREFERRED CUT AND FILL SLOPE IS 2:1. HOWEVER THE ENGINEER OF RECORD MAY REVISE THE CUT SLOPE TO 1:1 OR 1.5:1 IF CUT SLOPE IS ROCK OR WELL CEMENTED SOIL AND THE FILL SLOPE TO 3:1 OR GREATER IF THE FILL SLOPE IS POOR SOILS AND PRONE TO LANDSLIDES OR SEVERE EROSION
- REFER TO SIEVE ANALYSIS IN ATC SPECIFICATIONS SECTION 312000 PART 2.1 SOIL MATERIALS FOR APPROVED GRADATION. COMMON REFERENCED NAMES ARE CRUSHER RUN, ABC, 2A, 2RC.
- GEOSYNTHETIC: APPROVED PRODUCTS ARE US FABRICS: US 315 AND TENCATE: 160N. CONTRACTOR MAY SUBMIT DESIGN ALTERNATIVE AS OUTLINED IN THE AMERICAN TOWER MASTER SPECS.
- GOOD SOIL CONDITIONS ARE FOR ROADS OVER SANDS, SILTY SANDS, GRAVEL, AND GLACIAL TILL OR DIRECTLY ON ROCK. VERY STIFF TO HARD SOIL FEEL CONDITIONS. CBR BETWEEN 4.0 TO 6.0.

**AMERICAN TOWER MASTER SPECIFICATION:**

- DIVISION 31 EARTHWORK SECTION 0312000 FOR ACCESS ROADS AND EARTH WORK
- DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

**1 STA 0+00 - 0+50 CROWNED ROAD**

SCALE: NOT TO SCALE



**NOTES:**

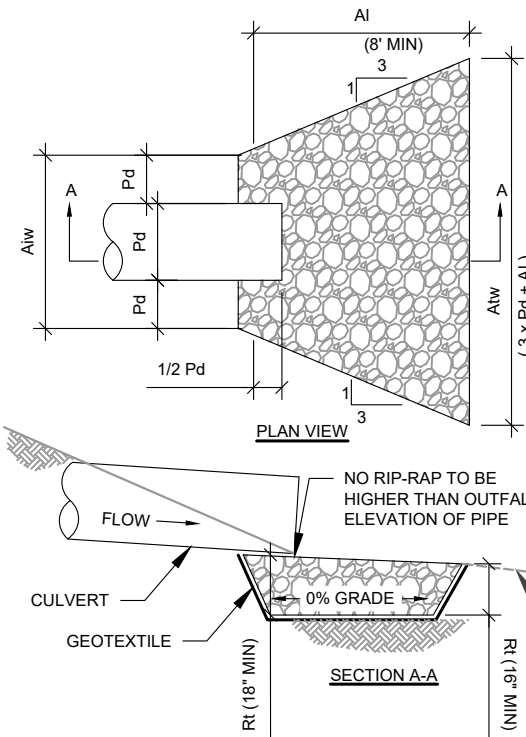
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- DITCH
  - DITCHES LEADING TO CULVERTS SHALL BE LINED WITH EROSION CONTROL BLANKET. SEE DITCH DETAIL.
  - THE DITCH SHALL BE INITIALLY OVER-EXCAVATED TO ALLOW FOR THE PLACEMENT OF TOPSOIL.
  - DITCH SHALL BE CONSTRUCTED FREE OF SEDIMENT, TREE ROOTS, STUMPS OR OTHER PROJECTIONS THAT WILL IMPEDE NORMAL CHANNEL FLOW AND/OR PREVENT GOOD LINING TO SOIL CONTACT.
- REFER TO SIEVE ANALYSIS IN ATC SPECIFICATIONS SECTION 312000 PART 2.1 SOIL MATERIALS FOR APPROVED GRADATION. COMMON REFERENCED NAMES ARE CRUSHER RUN, ABC, 2A, 2RC.
- GEOSYNTHETIC: APPROVED PRODUCTS ARE US FABRICS: US 2600 AND TENCATE: HP270. CONTRACTOR MAY SUBMIT DESIGN ALTERNATIVE AS OUTLINED IN THE AMERICAN TOWER MASTER SPECS.
- MARGINAL SOIL CONDITIONS ARE FOR ROADS OVER SANDS, SILTY SANDS, GRAVEL, AND GLACIAL TILL OR DIRECTLY ON ROCK. VERY STIFF TO HARD SOIL FEEL CONDITIONS. CBR BETWEEN 1.0 TO 4.0

**AMERICAN TOWER MASTER SPECIFICATION:**

- DIVISION 31 EARTHWORK SECTION 0312000 FOR ACCESS ROADS AND EARTH WORK
- DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

**2 STA 0+50 - STA 2+75 CROWNED ROAD WITH DITCH**

SCALE: NOT TO SCALE



**NOTES:**

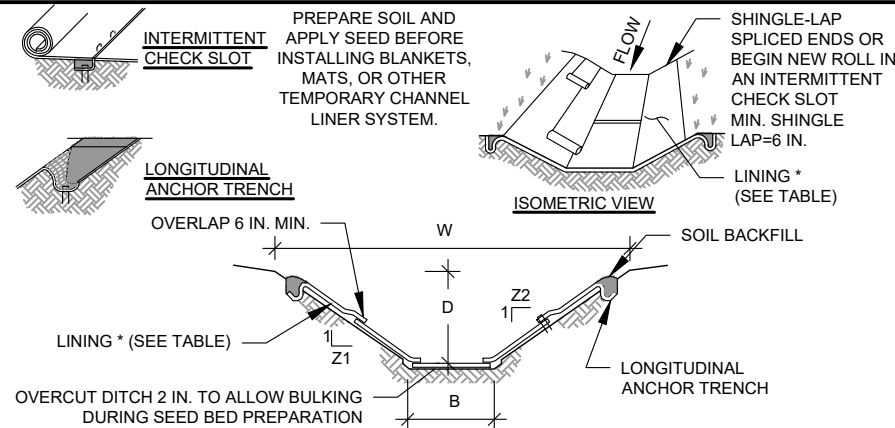
- REMOVE TOPSOIL AND PLACE GEOTEXTILE FABRIC PRIOR TO PLACING STONE.
  - GEOTEXTILE: APPROVED PRODUCTS ARE US FABRICS: US 160N AND TENCATE: MIRAFI 160N. CONTRACTOR MAY SUBMIT DESIGN ALTERNATIVE AS OUTLINED IN THE AMERICAN TOWER MASTER SPECIFICATIONS.
  - ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
  - EXTEND RIP-RAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

**AMERICAN TOWER MASTER SPECS:**

- DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

**4 RIP RAP OUTLET PROTECTION**

SCALE: NOT TO SCALE



**NOTES:**

- \* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION
- ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
- CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
- SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 48 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.
- NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

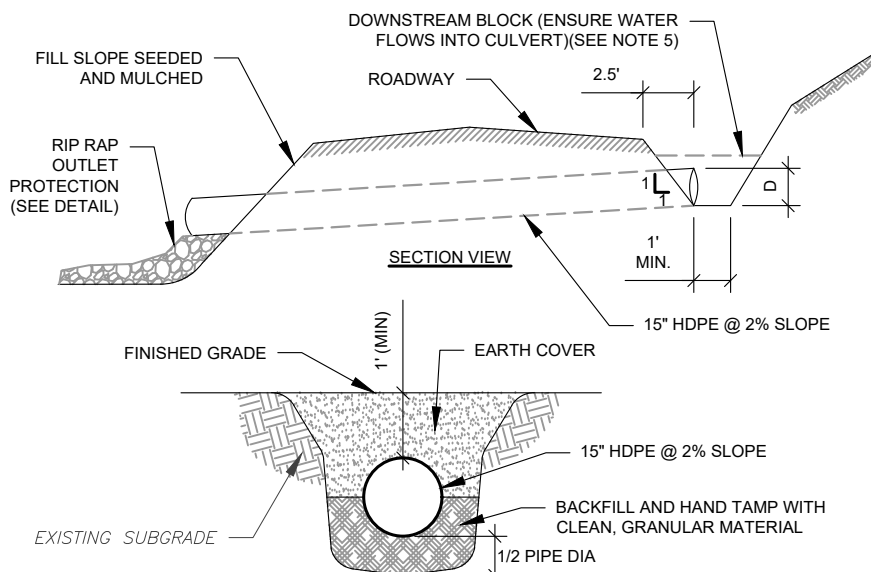
**AMERICAN TOWER MASTER SPECIFICATION:**

- DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
0+50 - 2+75 COMPOUND (96±)	2	1.5	8	2	2	NORTH AMERICAN GREEN S75

**3 ECB DITCH DETAIL**

SCALE: NOT TO SCALE



**NOTES:**

- CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF ROADWAY GRADING. THESE AREAS SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50 FEET OF A SURFACE WATER OR WHERE A SUITABLE VEGETATIVE AREA DOES NOT EXIST.
- A TOP DRESSING COMPOSED OF HARD, DURABLE STONE SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.
- ROADSIDE DITCHES SHALL BE PROVIDED WITH ADEQUATE PROTECTIVE LINING OR RIP-RAP WHEREVER RUNOFF CANNOT SHEET FLOW AWAY FROM THE ROADWAY.
- ADEQUATELY SIZED CULVERTS OR OTHER SUITABLE CROSS DRAINS SHALL BE PROVIDED AT ALL SEEPS, SPRINGS, AND DRAINAGE COURSES. DITCH RELIEF CULVERTS OR TURNOUTS SHALL BE PROVIDED AT THE INTERVALS INDICATED ON PLANS BY ENGINEERS DESIGN. RIPRAP OUTLET PROTECTION TO BE SIZED ACCORDINGLY BY THE ENGINEER OF RECORD.
- TO PREVENT BYPASS FLOW A DOWNSTREAM EARTHEN OR STONE BLOCK SHALL BE INSTALLED AT CULVERT.

**AMERICAN TOWER MASTER SPECIFICATION:**

- DIVISION 31 EARTHWORK SECTION 0312500 FOR EROSION AND SEDIMENT CONTROLS

**5 CULVERT PLACEMENT PROFILE**

SCALE: NOT TO SCALE

**AMERICAN TOWER®**  
 dba SPECIALTY TOWER SERVICES  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: 1571

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REV.	DESCRIPTION	BY	DATE
1	FOR CONSTRUCTION	NW	11/09/20
2	ADDED SPECIAL INSPECTION	NW	11/17/20
3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:

**202096**

ATC SITE NAME:

**HUDSON 3 NH**

SITE ADDRESS:

143 DRAUT ROAD  
 HUDSON, NH 33011

SEAL:



DATE DRAWN: 11/09/20

ATC JOB NO: 13014796

ATC LEGACY #: ----

**CONSTRUCTION DETAILS**

SHEET NUMBER:

**C-501**

REVISION:

**3**

APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRAUT ROAD  
 HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

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3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:

**202096**

ATC SITE NAME:

**HUDSON 3 NH**

SITE ADDRESS:

143 DRACUT ROAD  
 HUDSON, NH 33011

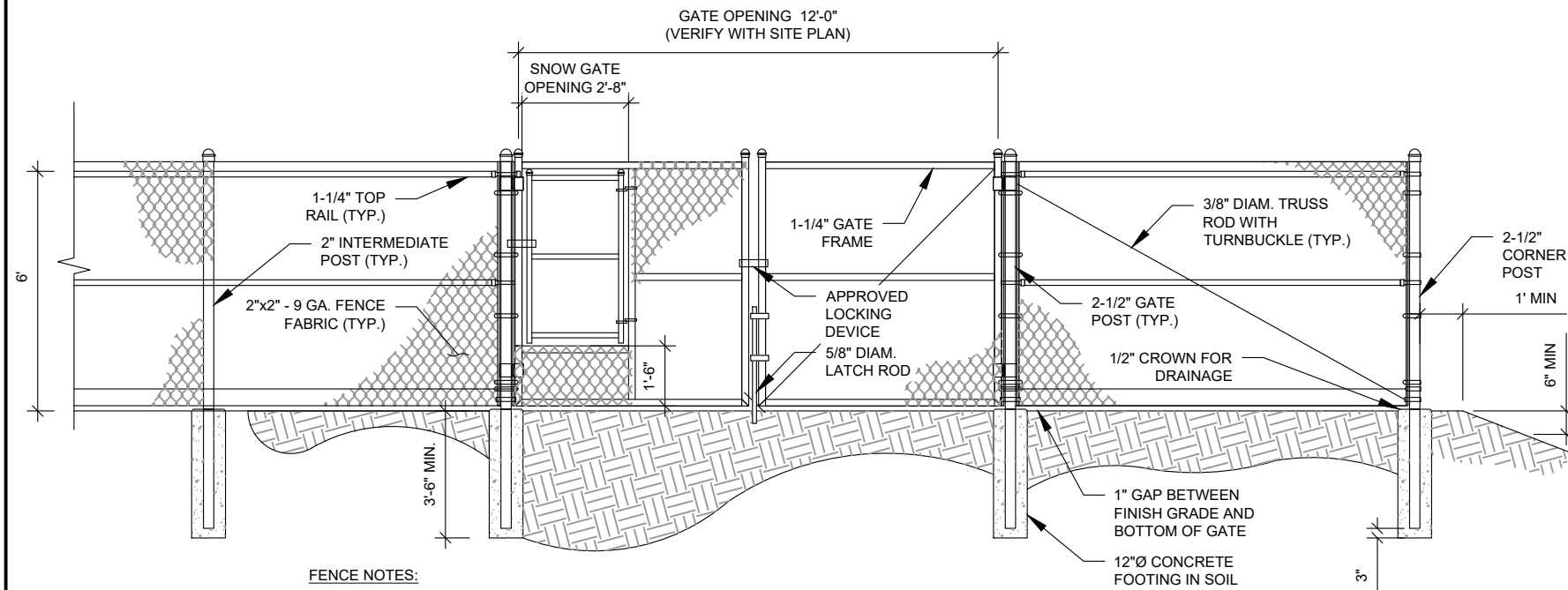
SEAL:



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**CONSTRUCTION DETAILS**

SHEET NUMBER:	REVISION:
<b>C-502</b>	<b>3</b>



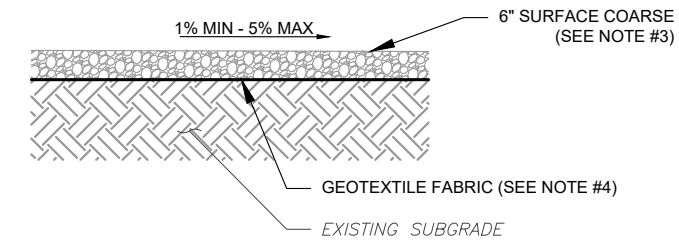
**FENCE NOTES:**

- ATTACH EACH GATE WITH 1-1/2 PAIR OF NON-LIFT-OFF TYPE, MALLEABLE IRON OR FORGING, PIN-TYPE HINGES. ASSEMBLIES SHALL ALLOW FOR 180° OF GATE TRAVEL. TACK WELD GATE HINGE TO POST FOR SECURITY.
- POSTS NOT TO EXCEED A MAXIMUM SEPARATION OF 10 FEET.

**AMERICAN TOWER MASTER SPECIFICATION:**

- DIVISION 32 EXTERIOR IMPROVEMENTS SECTION 0323113 FOR CHAIN LINK FENCE AND GATES

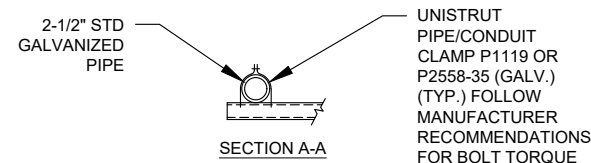
**1 GATE AND FENCE DETAIL (WITH SNOW GATE)**  
 SCALE: NOT TO SCALE



**NOTES:**

- CONTRACTOR TO CONTACT ALL UTILITIES FOR LOCATION OF UNDERGROUND SERVICES. SERVICE LOCATIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
- REMOVE ALL UNSUITABLE OR DELETERIOUS MATERIAL AS REQUIRED. COMPACT UNDERLYING SOIL TO 90% OF MAXIMUM DENSITY. REPLACE REMOVED SOIL WITH 8" LIFTS OF GRANULAR "B" MATERIAL TO A DEPTH OF 4" BELOW PROPOSED GRADE. COMPACT TO MINIMUM 95% OF MAXIMUM DRY DENSITY ALL COMPACTION SHALL BE IN ACCORDANCE WITH THE 2006 IBC. REVIEW WITH PROJECT MANAGER AND GEOTECT PRIOR TO CONSTRUCTION.
- SURFACE COARSE OF GRANULAR "A" MATERIAL SHALL CONSIST OF EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 100% PASSING THROUGH 3/4" SIEVE AND NOT MORE THAN 5% PASSING THROUGH #4 SIEVE.
- PROVIDE GEOTEXTILE FABRIC UNDER WASHED CHIPPED STONE COMPOUND UNLESS NOTED OTHERWISE. WOVEN GEOTEXTILE: APPROVED PRODUCTS ARE US FABRICS: US 200 AND TENCATE: 160N. CONTRACTOR MAY SUBMIT DESIGN ALTERNATIVE AS OUTLINED IN THE AMERICAN TOWER MASTER SPECIFICATIONS.

**2 COMPOUND CROSS SECTION**  
 SCALE: NOT TO SCALE



**H-FRAME NOTES:**

- IF IT IS NECESSARY TO EXTEND THE H-FRAME, AN ADDITIONAL POST WILL ALWAYS BE REQUIRED.
- PROPOSED UNISTRUTS TO BE FIELD CUT AND SHOULD NOT EXTEND MORE THAN 6 INCHES BEYOND THE LAST POST.
- SPRAY ENDS OF UNISTRUT WITH COLD GALVANIZING SPRAY PAINT, ALLOW TO DRY, THEN COVER WITH RUBBER PROTECTIVE CAPS FOR SAFETY.
- UNISTRUT TO BE CUT FLUSH WITH NO SHARP OR JAGGED EDGES.
- ALL PROPOSED HARDWARE TO BE MOUNTED PER MANUFACTURERS SPECS.
- METER CENTER TO FOLLOW HEIGHT REQUIREMENTS PER UTILITY.

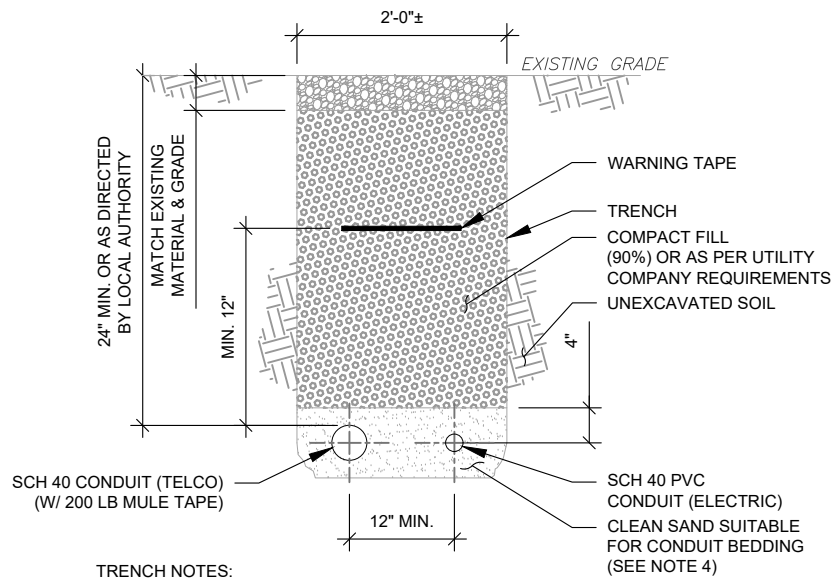
**3 UTILITY H-FRAME**  
 SCALE: N.T.S.

APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRACUT ROAD  
 HUDSON, NH 03051  
 LANDLORD SIGNATURE: \_\_\_\_\_

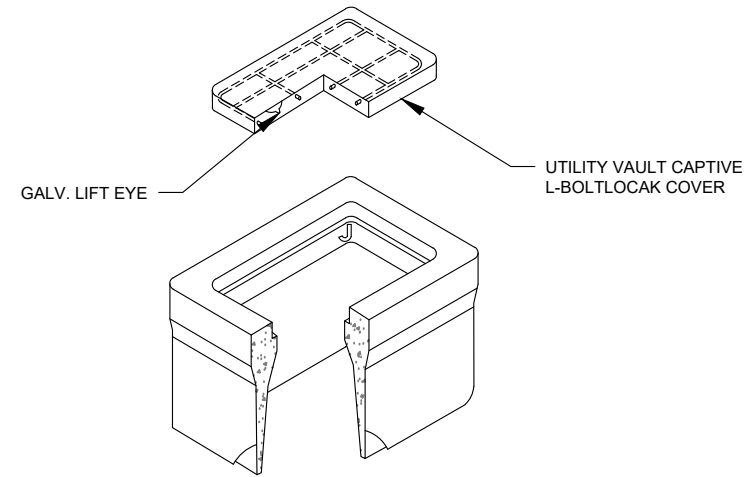
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**TRENCH NOTES:**

- IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
- IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
- CONCRETE ENCASE CONDUIT IN MINIMUM 2" THICK ENVELOPE WHEN INSTALLING UNDER SITE ACCESS ROAD AND EXTEND 6" BEYOND ROAD.
- CONFIRM SPACING AND DEPTH WITH NEC OR LOCAL CODE REQUIREMENTS

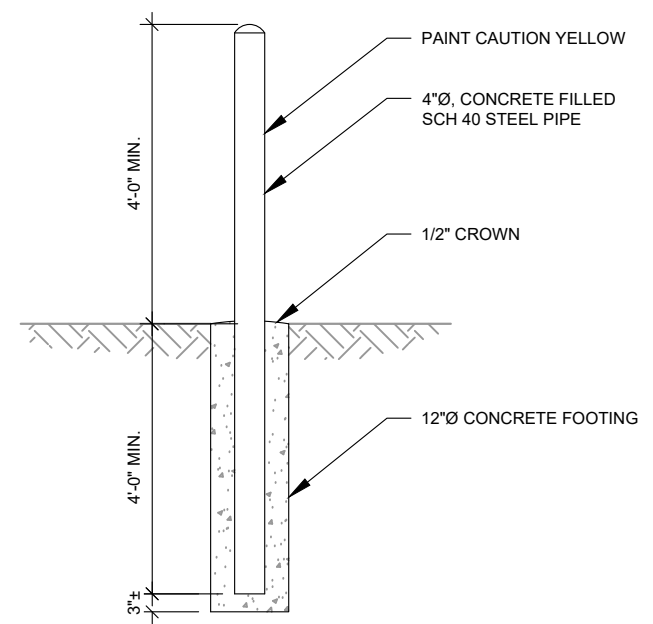
**1 TELCO AND POWER JOINT TRENCH CONDUIT**  
SCALE: N.T.S.



**NOTES:**

- INSTALL ON 3/4" AGGREGATE WHICH SHALL EXTEND A MINIMUM OF 6" BEYOND ALL SIDES OF THE BOX AND BE A MINIMUM OF 4" DEEP, BELOW THE BOX.
- SIZED APPROPRIATELY FOR THE APPLICATION PER NEC.
- CAP TO HAVE POWER/ELEC OR TELCO SHOWN.

**2 TYPICAL PULL BOX**  
SCALE: NOT TO SCALE



**NOTE FOR USE:**

- THIS IS THE TYPICAL BOLLARD USED.

**3 4" BOLLARD DETAIL**  
SCALE: NOT TO SCALE

**AMERICAN TOWER®**  
dba SPECIALTY TOWER SERVICES  
3500 REGENCY PARKWAY  
SUITE 100  
CARY, NC 27518  
PHONE: (919) 468-0112  
COA: 1571

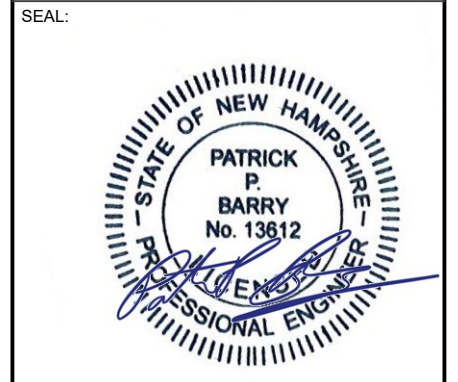
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3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:  
**202096**

ATC SITE NAME:  
**HUDSON 3 NH**

SITE ADDRESS:  
143 DRACUT ROAD  
HUDSON, NH 33011



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**CONSTRUCTION DETAILS**

SHEET NUMBER: <b>C-503</b>	REVISION: <b>3</b>
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APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_  
PLANNING BOARD: \_\_\_\_\_  
CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

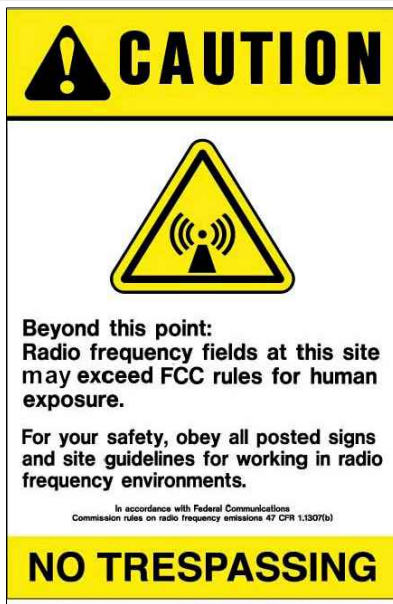
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
TOM W. & ROSA C. CHAN  
143 DRAUT ROAD  
HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

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**CAUTION**

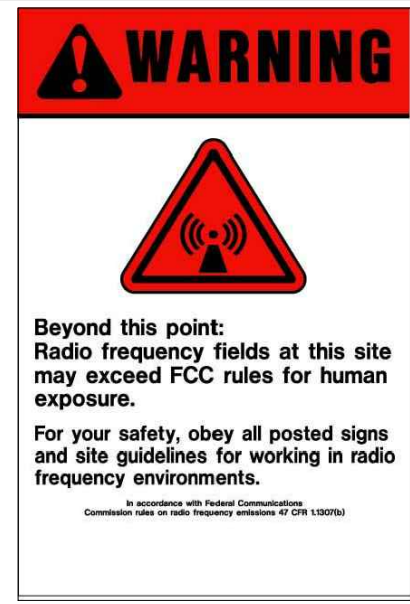
Beyond this point:  
Radio frequency fields at this site may exceed FCC rules for human exposure.

For your safety, obey all posted signs and site guidelines for working in radio frequency environments.

In accordance with Federal Communications Commission rules on radio frequency emissions 47 CFR 1.1307(b)

**NO TRESPASSING**

ATC CAUTION AND NO TRESPASSING SIGN



**WARNING**

Beyond this point:  
Radio frequency fields at this site may exceed FCC rules for human exposure.

For your safety, obey all posted signs and site guidelines for working in radio frequency environments.

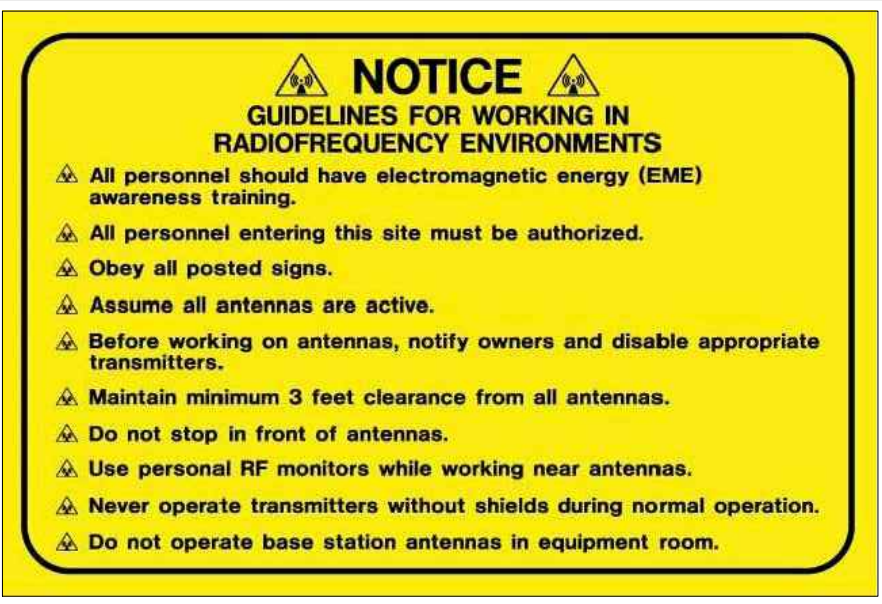
In accordance with Federal Communications Commission rules on radio frequency emissions 47 CFR 1.1307(b)

ATC RF WARNING AND FCC NUMBER SIGN

FCC TOWER REGISTRATION #

Posting of sign required by law

ATC STAND-ALONE FCC TOWER REGISTRATION SIGN



**NOTICE**

**GUIDELINES FOR WORKING IN RADIOFREQUENCY ENVIRONMENTS**

- All personnel should have electromagnetic energy (EME) awareness training.
- All personnel entering this site must be authorized.
- Obey all posted signs.
- Assume all antennas are active.
- Before working on antennas, notify owners and disable appropriate transmitters.
- Maintain minimum 3 feet clearance from all antennas.
- Do not stop in front of antennas.
- Use personal RF monitors while working near antennas.
- Never operate transmitters without shields during normal operation.
- Do not operate base station antennas in equipment room.

ATC RF PROGRAM NOTICE SIGN



**AMERICAN TOWER®**  
dba SPECIALTY TOWER SERVICES

3500 REGENCY PARKWAY  
SUITE 100  
CARY, NC 27518  
PHONE: (919) 468-0112  
COA: 1571

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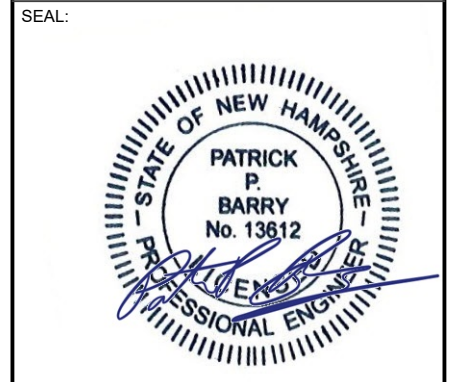
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NW	11/09/20
3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:  
**202096**

ATC SITE NAME:  
**HUDSON 3 NH**

SITE ADDRESS:  
143 DRACUT ROAD  
HUDSON, NH 33011

SEAL:



DATE DRAWN: 11/09/20

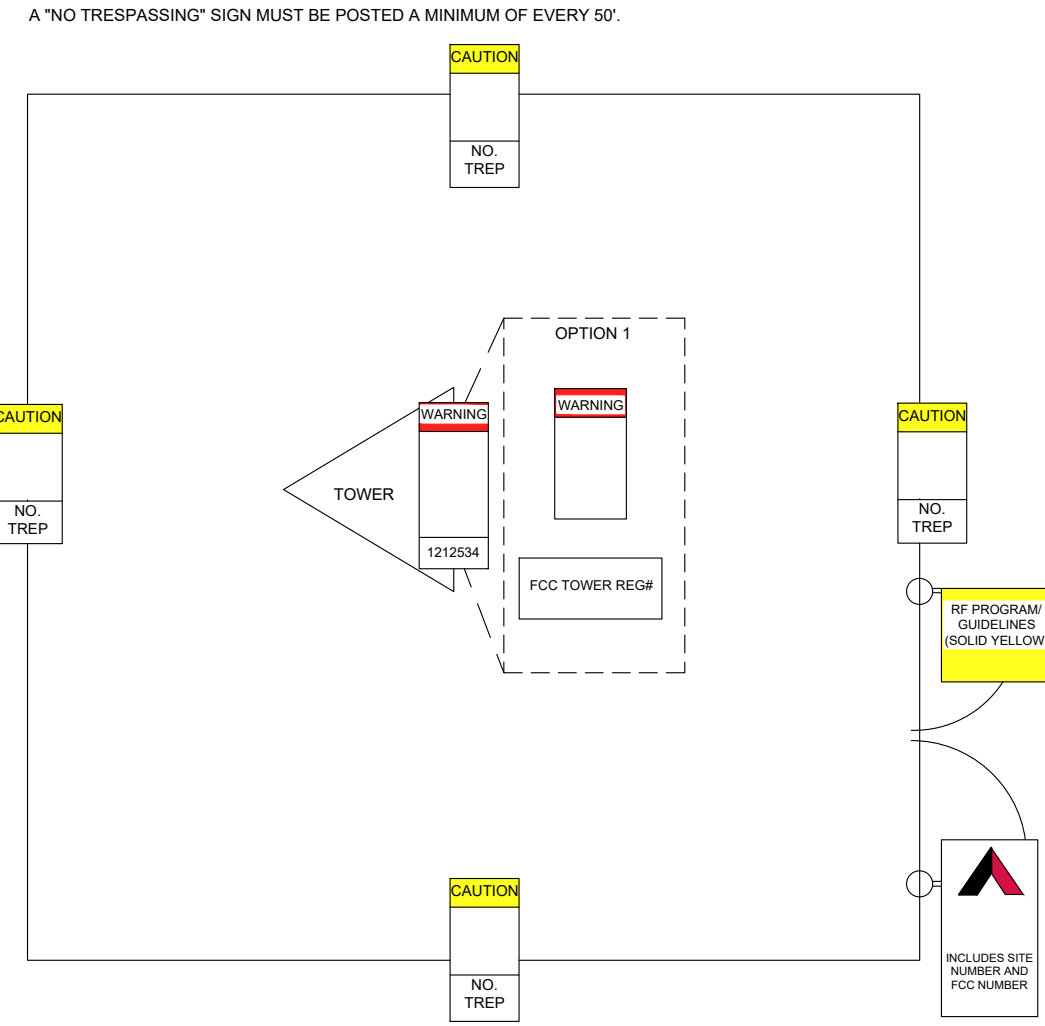
ATC JOB NO: 13014796

ATC LEGACY #: ----

**SIGNAGE**

SHEET NUMBER: **C-504**

REVISION: **3**



THERE MUST BE AN ATC SIGN WITH SITE INFORMATION AND FCC REGISTRATION NUMBER AT BOTH THE ACCESS ROAD GATE (GATE OFF OF MAIN ROAD, IF APPLICABLE) AND COMPOUND FENCE (IF NO COMPOUND FENCE, THEN IN A CONSPICUOUS PLACE UPON DRIVE UP). IN ADDITION, PLEASE LOOK AT DIAGRAM FOR ALL ADDITIONAL SIGNS REQUIRED.

OPTION 1 MAY BE USED TO POST TOWER REGISTRATION NUMBERS AT THE BASE OF THE TOWER IF A WARNING SIGN DOES NOT HAVE SPACE FOR THE TOWER REGISTRATION NUMBER.

IMPORTANT: FOR ANY ATC SIGN THAT DOES NOT MEET THE ATC SPECIFICATION FOR SIGNAGE (I.E., SHARPIE/PAINT PEN, WORN LABELS, ETC.), BRING IT INTO COMPLIANCE (RE-WRITE IF WORN) AND FLAG FOR REPLACEMENT ASAP WITH THE APPROPRIATE PERMANENT SIGN (YOU CAN ORDER THESE THROUGH THE WAREHOUSE).

ONLY LABELS PRINTED BY A ZEBRA LABEL PRINTER WILL BE ACCEPTED.



**AMERICAN TOWER**

**SITE NAME :** HUDSON 3 NH  
**SITE NUMBER :** 202096  
**FCC REGISTRATION # :** NOT REQUIRED

**FOR LEASING INFORMATION: 877-282-7483**  
**877-ATC-SITE**

**FOR EMERGENCIES CALL: 877-518-6937**  
**877-51-TOWER**

**NO TRESPASSING**

**www.americantower.com**

POSTING OF THIS SIGNAGE REQUIRED BY LAW

ATC SITE SIGN

REPLACEMENT OF SIGNAGE:

AS SIGNAGE BECOMES STOLEN, DAMAGED, BRITTLE OR FADED, IT SHOULD BE REPLACED WITH SIGNAGE PER THIS SPECIFICATION. ANY ACQUIRED SITE SHOULD HAVE NEW SIGNS POSTED WITHIN 60 DAYS UNLESS OTHERWISE SPECIFIED. ANY SITE SOLD SHOULD HAVE THE ATC SIGNS REMOVED WITHIN 30 DAYS UNLESS OTHERWISE SPECIFIED. ALL FCC OR REGULATORY SIGNAGE MUST BE INSTALLED OR REPLACED AS REQUIRED TO MEET OUR STANDARD. SIGNS SHOULD BE REPLACED ON NORMAL, QUARTERLY MAINTENANCE VISITS BY CONTRACTORS OR SITE MANAGERS, UNLESS OTHERWISE REQUIRED ON A CASE-BY-CASE BASIS.

NOTE:

EXTERIOR SIGNS ARE NOT PROPOSED EXCEPT AS REQUIRED BY THE FCC. ALL EXISTING SIGNAGE AND ANY FUTURE SIGNAGE WILL BE COMPLIANT WITH STATUTE 164-43.4 NO HIGH-VOLTAGE SIGNAGE IS NECESSARY. NO HIGH-VOLTAGE EQUIPMENT PRESENT.

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING \_\_\_\_\_

PLANNING BOARD:

CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

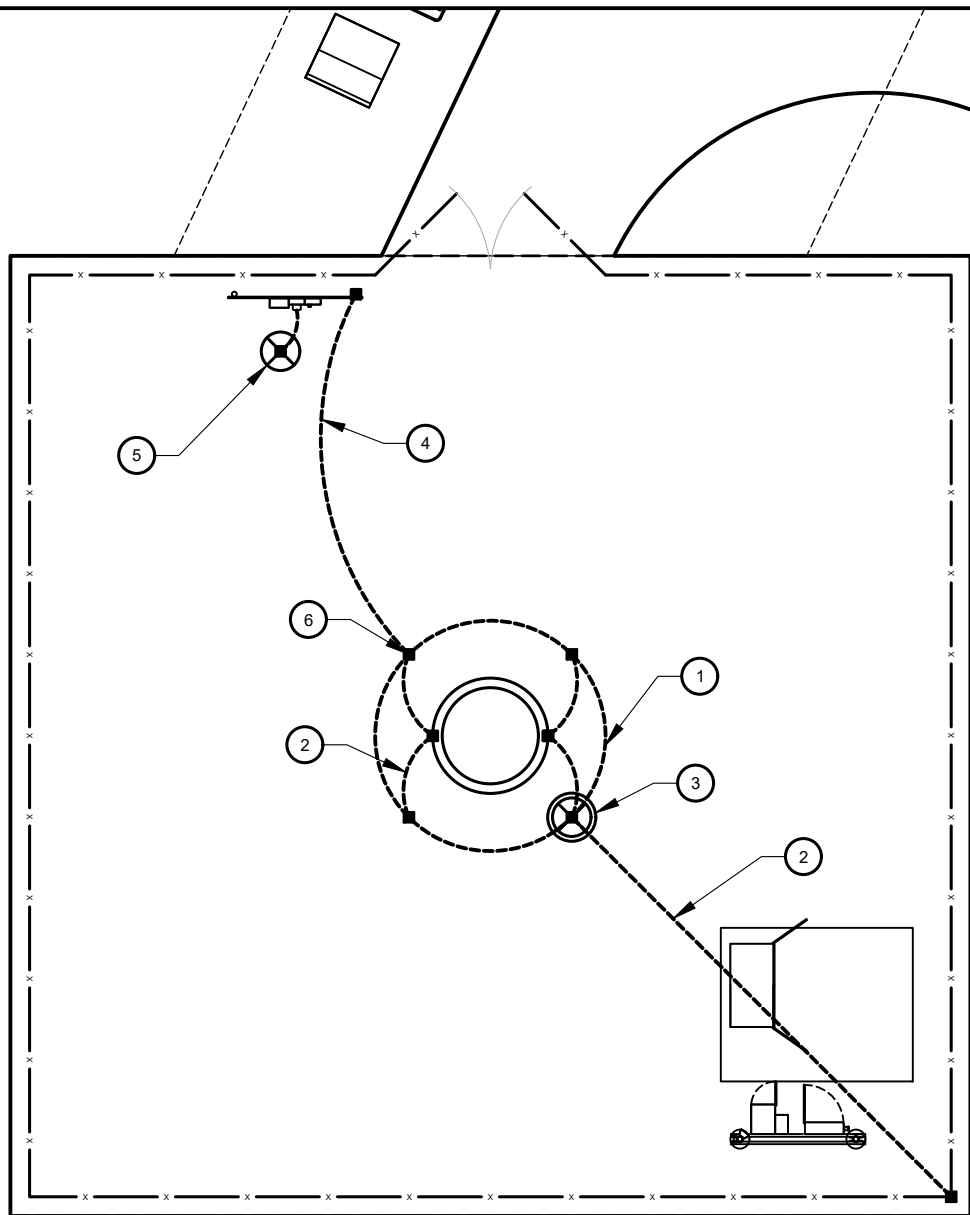
SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
TOM W. & ROSA C. CHAN  
143 DRAUT ROAD  
HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

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**1 GROUNDING PLAN**

0 10' 20'

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



**GROUNDING PLAN NOTES:**

1. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
2. ALL GROUND CONNECTIONS SHALL BE EXOTHERMIC WELDED. ALL WIRES SHALL BE COPPER.
3. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE. GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY OWNER REPRESENTATIVE.
4. REFER TO ATC CONSTRUCTION SPEC AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
5. ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM, AND RECEIVE APPROVAL OF DESIGN BY OWNER REPRESENTATIVE, PRIOR TO INSTALLATION OF GROUNDING SYSTEM. PHOTO DOCUMENT ALL CONNECTIONS AND GROUND RING.
6. NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
7. TO AVOID TOWER FOUNDATION, GROUND RINGS MAY BE INSTALLED AT AN ANGLE OR TOWER GROUND RING MAY BE EXTENDED AS NEEDED.

**KEYED NOTES:**

- ① #2 AWG SBTC TOWER GROUND RING. (MIN 2 FT FROM FOUNDATION)
- ② #2 AWG SBTC TOWER RING RADIALS. GROUNDING RADIAL (TYP.) SEE TRENCH DETAIL 4 ON SHEET E-501. MAINTAIN DEPTH AND MINIMUM 15 FT. SEPARATION FROM OTHER RADIALS AT ENDS AND MINIMUM 5 FT. SEPARATION AT GROUNDING SYSTEMS AND BUILDING FOUNDATIONS.
- ③ 3/4" X 10 FT GROUND ROD WITH TEST WELL (MIN. ONE PER SITE ON TOWER GROUND RING). SEE DETAIL 5 ON SHEET E-501.
- ④ BOND TO ELECTRICAL SERVICE AT MAIN BONDING JUMPER WITH #2 AWG SBTC. PARALLEL CONNECTION AWAY FROM TOWER. SEE DETAIL 1 ON SHEET E-501.
- ⑤ SERVICE GROUND ROD SIZE MINIMUM PER NEC OR AS OTHERWISE INDICATED. PLACE MINIMUM OF 10' FROM ALL OTHER GROUND RODS.
- ⑥ TOWER TO GROUND RING BONDS. SEE DETAIL 3 ON SHEET E-501.
- ⑦ ADDITIONAL RADIAL EXTENSION IN ROAD CENTER (80' MAX. OR TO RIGHT OF WAY, WHICHEVER IS SHORTER) SEE DETAIL 4 ON SHEET E-501.

**INSTALLATION NOTES:**

1. INSTALL STANDARD LEVEL I DESIGN (BASE BID) WHICH INCLUDES:
  - 1.1. TOWER RING, 1 GROUND ROD PER LEG, SERVICE GROUND ROD AT H-FRAME, 4 RADIALS TO CORNERS. ADDITIONAL WORK NECESSARY BELOW SHALL BE CONSIDERED AN ALLOWANCE.
2. MEASURE GROUNDING SYSTEM RESISTANCE WITH A 3-PROBE TEST PRIOR TO BACKFILL/DEMOLITION AND PRIOR TO CONNECTION OF UTILITY POWER NEUTRAL TO THE SYSTEM.
3. IF GROUNDING SYSTEM RESISTANCE (STEP 2) IS GREATER THAN 10 OHMS INSTALL LEVEL III ADDITIONAL RADIAL IN ROAD AND COORDINATE WITH ATC ENGINEER OF RECORD.

**GROUNDING PLAN LEGEND:**

- GROUND WIRE (LEVEL I)
- GROUND WIRE (LEVEL II)
- GROUND WIRE (LEVEL III)
- EXOTHERMIC WELD
- MECHANICAL WELD
- ⊗ COPPER GROUND ROD
- ⊗ TEST WELL



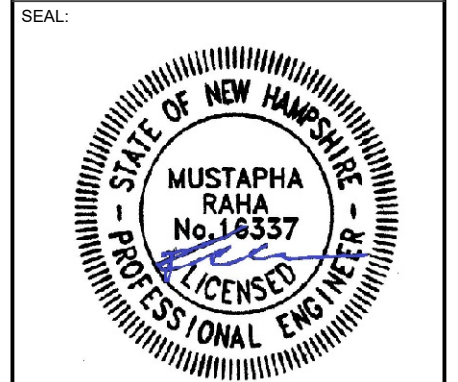
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REV.	DESCRIPTION	BY	DATE
①	FOR CONSTRUCTION	NW	11/09/20
③	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:  
**202096**

ATC SITE NAME:  
**HUDSON 3 NH**

SITE ADDRESS:  
143 DRACUT ROAD  
HUDSON, NH 33011



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**GROUNDING LAYOUT**

SHEET NUMBER:  
**E-401**

REVISION:  
**3**

APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_  
PLANNING BOARD:  
CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

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PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
TOM W. & ROSA C. CHAN  
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HUDSON, NH 03051

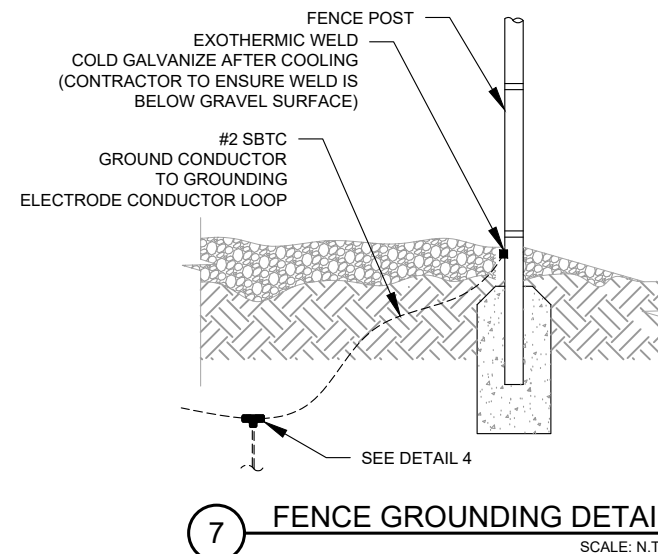
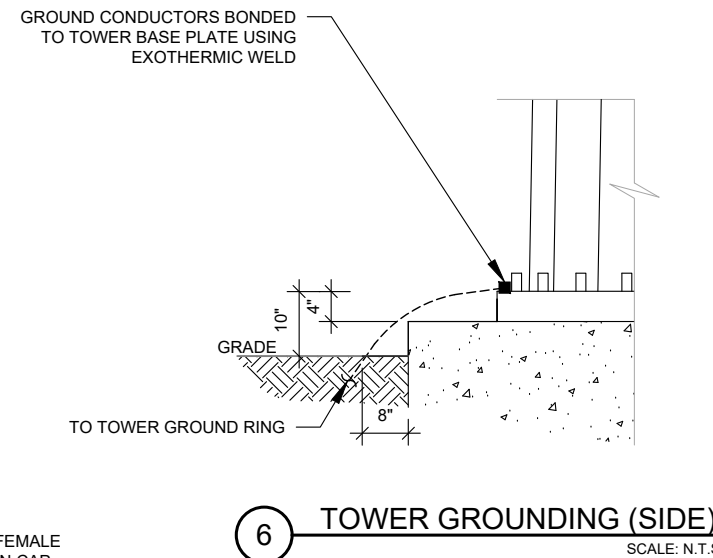
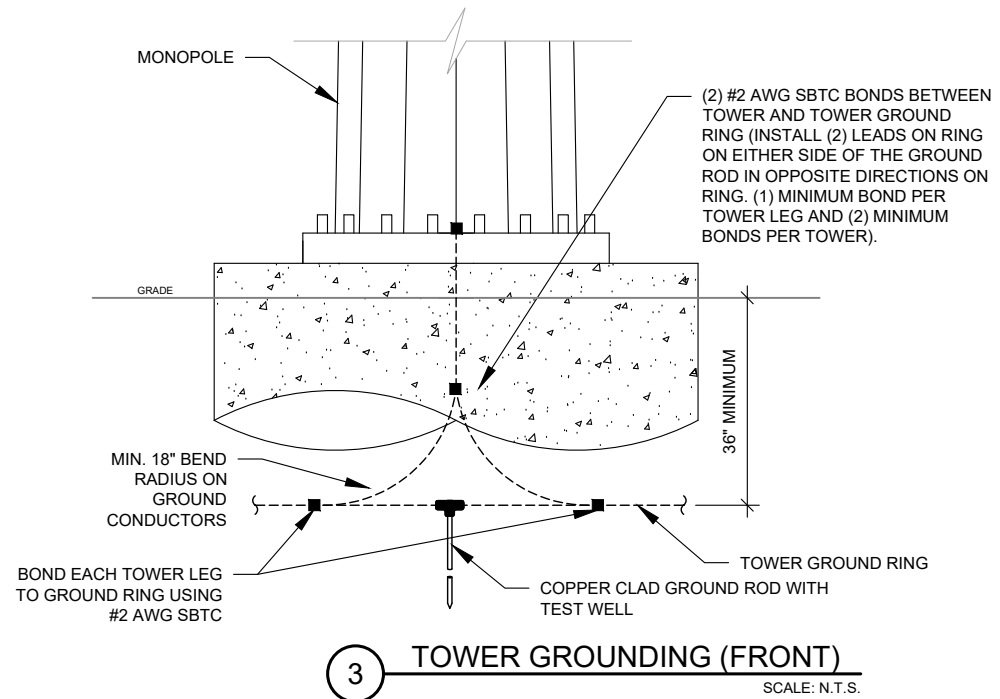
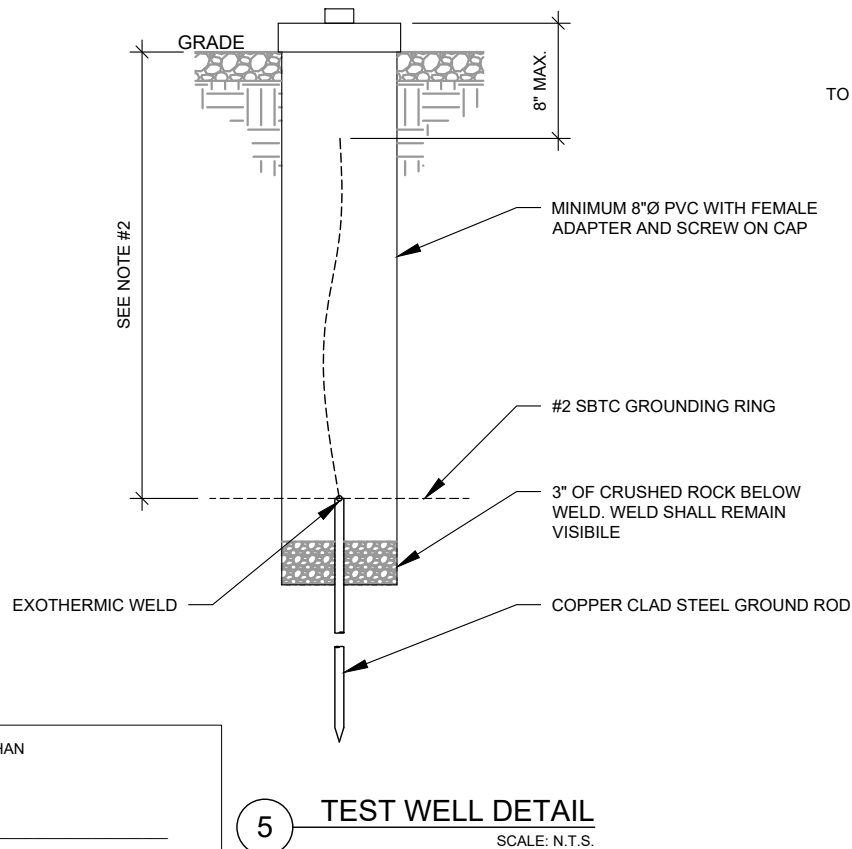
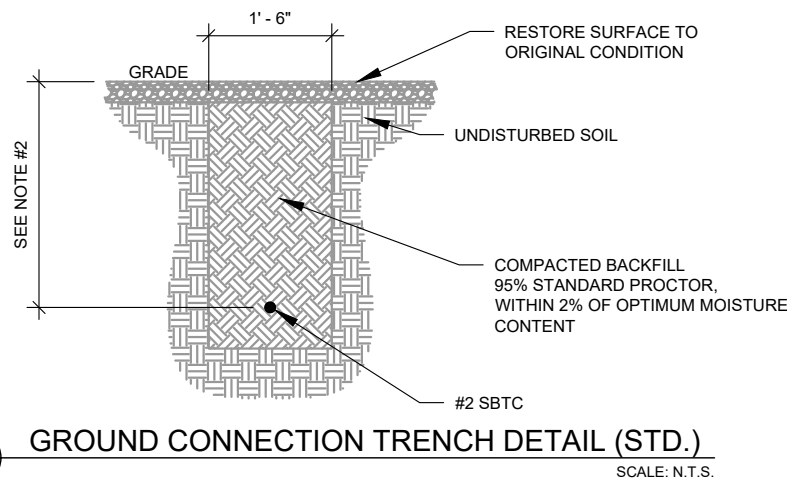
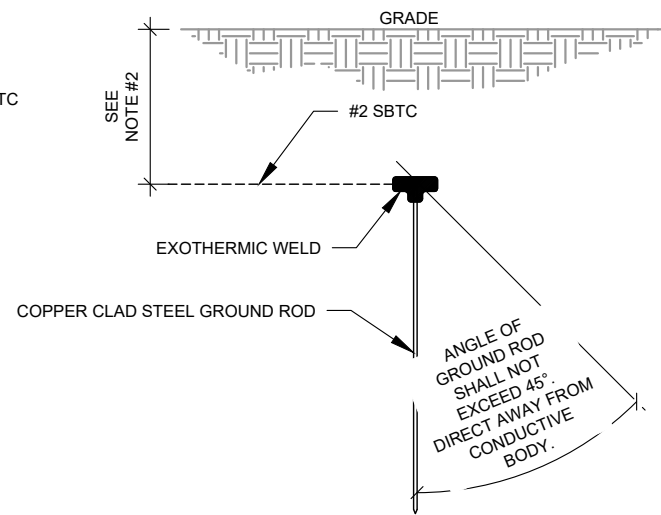
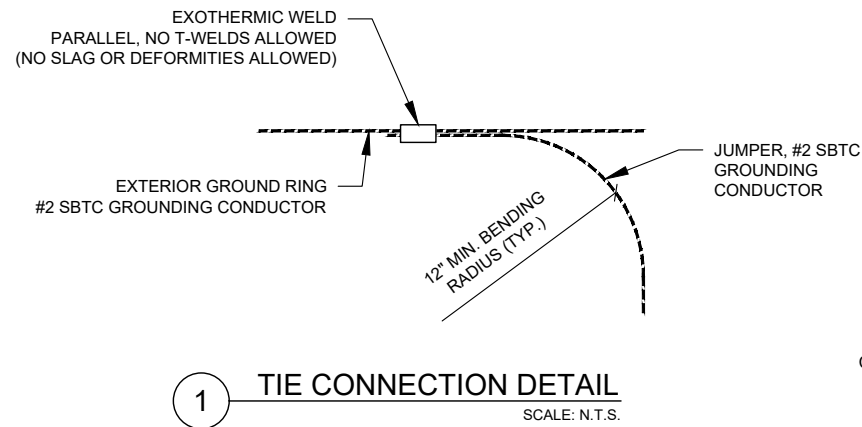
LANDLORD SIGNATURE: \_\_\_\_\_

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**NOTES:**

1. LOCATE BEFORE DIGGING.
2. ALL RING AND RADIAL DEPTHS AT 30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.
3. WELD GROUND TO FENCE AS LOW AS POSSIBLE TO DETER COPPER THEFT

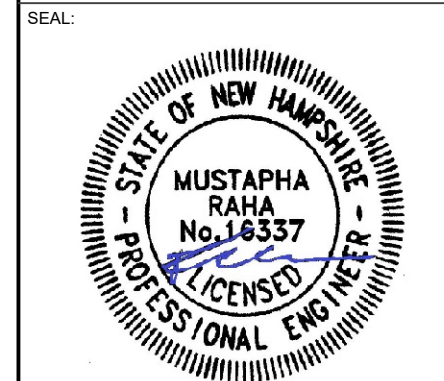


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dba SPECIALTY TOWER SERVICES  
3500 REGENCY PARKWAY  
SUITE 100  
CARY, NC 27518  
PHONE: (919) 468-0112  
COA: 1571

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**HUDSON 3 NH**  
SITE ADDRESS:  
143 DRACUT ROAD  
HUDSON, NH 33011



DATE DRAWN: 11/09/20  
ATC JOB NO: 13014796  
ATC LEGACY #: ---

**ELECTRICAL DETAILS**

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REVISION:  
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PLANNING BOARD:  
CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

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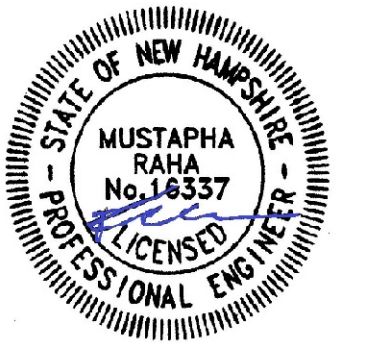
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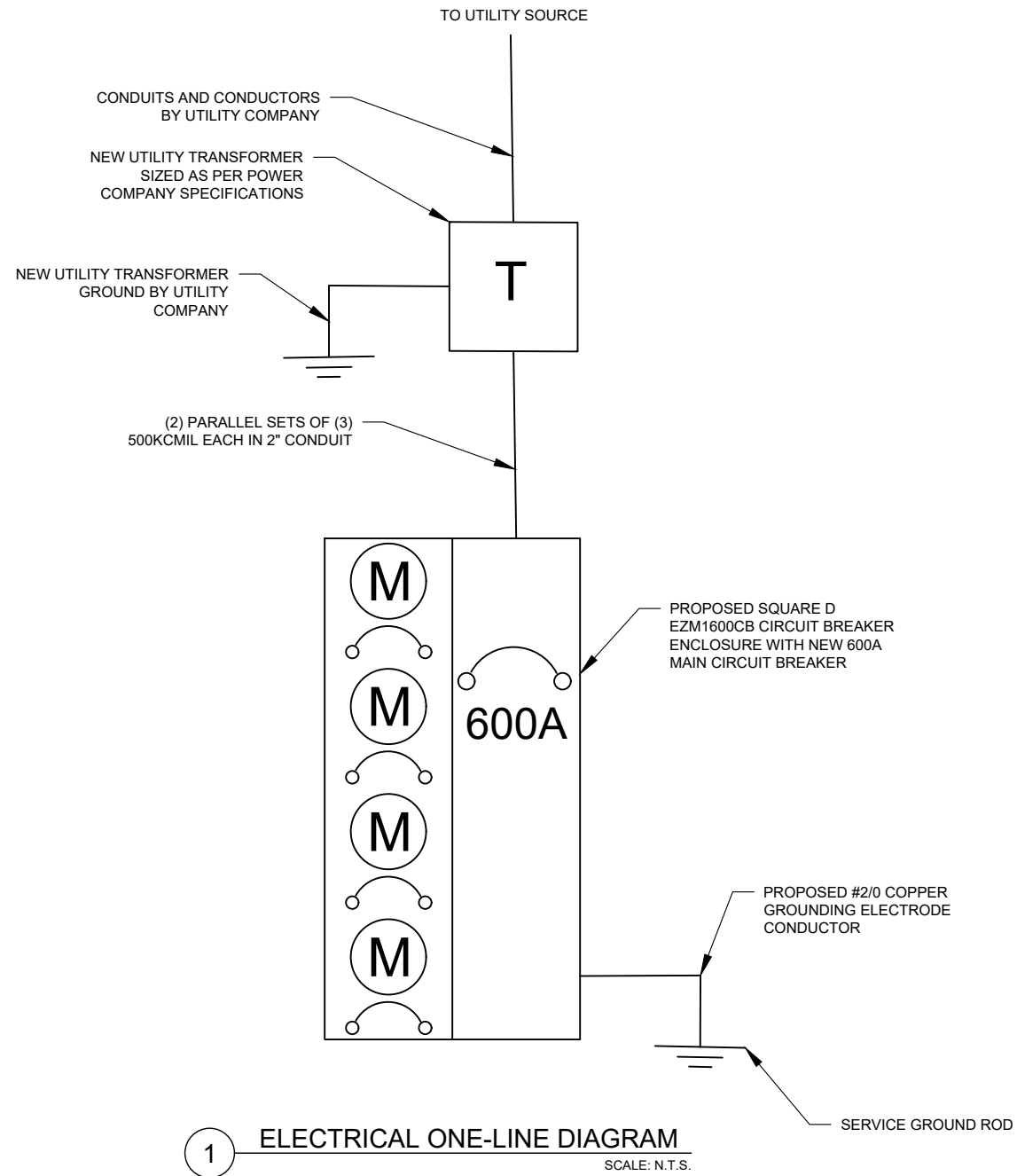
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 ATC LEGACY #: ----

**ELECTRICAL ONE LINE DIAGRAM**

SHEET NUMBER: **E-601** REVISION: **3**



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**CAP EX INSPECTION NOTES**

THE SPECIAL INSPECTION (SI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE SI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR AND THE INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED FROM AMERICAN TOWER CORPORATION (ATC). IT IS EXPECTED THAT EACH PARTY WILL PROACTIVELY REACH OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR AMERICAN TOWER POINT OF CONTACT.

**SPECIAL INSPECTOR**

THE SPECIAL INSPECTOR IS REQUIRED TO CONTACT THE GENERAL CONTRACTOR AS SOON AS RECEIVING A PO FROM ATC. UPON RECEIVING A PO FROM ATC THE SPECIAL INSPECTOR AT A MINIMUM MUST:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE GENERAL CONTRACTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- ANY CONCERNS WITH THE SCOPE OF WORK OR PROJECT COMMITMENT MUST BE RELAYED TO THE ATC POINT OF CONTACT IMMEDIATELY.

THE SPECIAL INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR INSPECTION AND TEST REPORTS, REVIEWING THESE DOCUMENTS FOR ADHERENCE TO CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE SI REPORT TO AMERICAN TOWER CORPORATION.

**GENERAL CONTRACTOR**

THE GENERAL CONTRACTOR IS REQUIRED TO CONTACT THE SI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE SI TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SI CHECKLIST.

**CAP EX SPECIAL INSPECTION CHECKLIST**

INSPECTION ITEM	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY	SI REVIEW REQUIRED			INSPECTION FREQUENCY	
				PRE CX	DURING CX	POST CX	PERIODIC	CONTINUOUS
SPECIAL INSPECTION FIELD WORK & REPORT	DOCUMENTATION AND SITE VISIT CONDUCTED BY AN ATC APPROVED SPECIAL INSPECTOR AS REQUIRED BY ATC AND OTHER AUTHORITIES HAVING JURISDICTION. INSPECTION PARAMETERS TO FOLLOW ATC'S CONSTRUCTION SPECIFICATIONS FOR WIRELESS TOWER SITES.	Y	SI			✓		
ENGINEERING ASSEMBLY DRAWINGS	GC SHALL SUBMIT DRAWINGS TO SI FOR INCLUSION IN SI REPORT	Y	GC	✓				
FABRICATED MATERIAL VERIFICATION & INSPECTION	MTR AND OR MILL CERTIFICATIONS FOR SUPPLIED MATERIALS GC SHALL SUPPLY SI WITH REPORTS TO BE INCLUDED IN SI REPORT WHEN REQUIRED BY ATC	Y	SI	✓				
ROAD INSPECTION	STONE SHOULD HAVE A MINIMUM DEPTH OF 6". ENTRANCE SHALL HAVE A MINIMUM WIDTH OF 20' FOR A MINIMUM LENGTH OF 30' AND A 30' RADIUS, IF POSSIBLE. TRAVEL LANE SHALL HAVE A MIN. WIDTH OF 12' IN THE TANGENTS AND 15' AT THE CURVES. ROAD HAS NO SIGNS OF RILLS AND EROSION. ROAD IS PROPERLY CROWNED OR SUPER-ELEVATED. ALL DIMENSIONS AND DEPTHS SHALL BE PER THE PLANS OR ABOVE UNLESS OTHERWISE SPECIFIED.	Y	GC / SI			✓	✓	
DITCH INSPECTION	A DITCH SHOULD BE INSTALLED PER THE APPROVED PLANS. INSPECT EROSION PROBLEMS, DAMAGE TO VEGETATION, SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN >3 INCHES AT ANY SPOT OR COVERING VEGETATION). INSPECT FOR POOLS OF STANDING WATER. IF REQUIRED, DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE GRADE TO PROVIDE POSITIVE DRAINAGE. VEGETATION ALONG THE SURFACE OF THE DITCH SHOULD BE KEPT IN GOOD CONDITION, AND ANY BARE SPOTS IMMEDIATELY RE-VEGETATED. IF THE DITCH IS RIP-RAP VERIFY IF ADDITIONAL RIP-RAP NEEDS TO BE INSTALLED. THE CHANNEL SHOULD BE CLEANED WHENEVER THE TOTAL DEPTH IS REDUCED BY 25% AT ANY LOCATION OR A MINIMUM 9" DEPTH IS NOT ACHIEVED.	Y	SI			✓	✓	
TURN-OUT INSPECTION	IS THE TURNOUT LOCATED TO TAKE ADVANTAGE OF NATURAL DRAINAGE COURSES OR BUFFER AREAS WHERE POSSIBLE? INSPECT AND VERIFY IF THE TURNOUTS ARE FUNCTIONING PROPERLY AND IF EARTHEN BERMS OR RIP-RAP IS NECESSARY TO MAINTAIN THE DRAINAGE PATTERN.	Y	SI		✓	✓	✓	
CULVERT INSPECTION	INSTALLED THE CORRECT SIZE AND MATERIAL TYPE AND AT THE PROPER LOCATIONS WITH A MINIMUM OF 1' COVER. CULVERTS SHOULD BE KEPT CLEAN AND ENSURE WATER FLOW. UNLESS AT A LOW POINT ALL A DOWNSTREAM EARTHEN OR STONE BERM SHALL BE INSTALLED AT THE CULVERT TO PREVENT BYPASS FLOW.	Y	SI		✓	✓	✓	
OUTLET PROTECTION INSPECTION	SHALL BE INSTALLED ON LEVEL GRADE TO PREVENT SCOUR AND EROSION AT PIPE OR CHANNEL OUTFALL. DISPLACED RIP-RAP SHALL BE REPLACED. DEPTH SHALL BE 1.5 TIMES THE STONE SIZE OR MIN OF 9". A MINIMUM LENGTH OF 8' IS REQUIRED. MIN STONE SIZE: AASHTO R-3 RIP RAP (3"-6" CLEAN STONE).	Y	SI		✓	✓	✓	
SILT FENCE INSPECTION	ALL SILT FENCE AND STAKES SHOULD BE REMOVED BY THE CONTRACTOR AFTER THE SITES HAS ACHIEVED STABILIZATION. NO LONG TERM MAINTENANCE IS REQUIRED.	Y	SI			✓	✓	
SEEDING INSPECTION	SITES SHOULD OBTAIN AND MAINTAIN AT LEAST 70% STABILIZATION. STONE IS CONSIDERED STABILIZED.	Y	SI			✓	✓	
COMPACTION VERIFICATION	CONTRACTOR SHALL PROVIDE AN INDEPENDENT THIRD PARTY CERTIFIED INSPECTION WHICH PROVIDES TEST RESULTS FOR COMPACTION TEST OF SOILS IN PLACE TO ASTM STANDARDS.	Y	GC / TA			✓		
COMPOUND INSPECTION	THE COMPOUND SHALL HAVE A MAXIMUM GRADE OF 5% AND A MINIMUM OF 1% IN ANY DIRECTION. A 1' MINIMUM GRAVEL APRON AROUND THE COMPOUND WITH A DITCH INSTALLED PER THE PLANS SURROUNDING THE UP GRADIENT PERIMETER OF THE COMPOUND. THE DITCH SHALL FREELY GRAVITY DRAIN TO AN APPROPRIATE LOCATION WITH NO IMPACT TO DOWN GRADIENT FEATURES SUCH AS THE ACCESS ROAD OR OTHER STRUCTURES.	Y	GC / TA			✓	✓	
SLOPE STABILITY INSPECTION	EROSION CONTROL BLANKETS SHALL BE USED ON ALL SLOPES GREATER THAN 2H:1V OR STEEPER OR AS DIRECTED BY LOCAL REGULATING AGENCIES, AND WHERE POTENTIAL EXISTS FOR SEDIMENT POLLUTION TO RECEIVING SURFACE WATERS. SINCE ROCK SLOPES POSE LITTLE, IF ANY, POTENTIAL FOR EROSION, CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILL SLOPES DO NOT NEED TO BE BLANKETED.	N	SI			✓	✓	
POWER AND GROUNDING	POWER PANELS, DISCONNECTS, ATS, TROUGH, H-FRAME, CONDUIT AND GROUNDING SYSTEMS ARE IN CONFORMANCE WITH THE DESIGN DRAWINGS	Y	SI			✓	✓	
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	GC SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO SI FOR APPROVAL/REVIEW AND INCLUSION IN SI REPORT	Y	GC			✓		
SI AS-BUILT DRAWINGS WITH INSPECTION RED-LINES (AS REQUIRED)	SI SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS WITHIN SI REPORT	Y	SI			✓		
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF SPECIAL INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE SI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN SI REPORT.	Y	GC / SI			✓		

**NOTE:**

- SPECIAL INSPECTIONS ARE INTENDED TO BE A COLLABORATIVE EFFORT BETWEEN GC AND SI. WHENEVER POSSIBLE GC IS TO PROVIDE SI WITH PHOTOGRAPHIC OR OTHER ACCEPTABLE EVIDENCE OF PROPER INSTALLATION IF PERIODIC INSPECTION FREQUENCY IS ACCEPTABLE. THE GC AND SI SHALL WORK TO COMPIL EVIDENCE OF PROPER CONSTRUCTION AND LIMIT THE NUMBER OF SI SITE VISITS REQUIRED.
- GC TO REFERENCE TOWER AND FOUNDATION DRAWINGS FOR SPECIAL INSPECTION REQUIREMENTS.

**TABLE KEY:**

SI - ATC APPROVED SPECIAL INSPECTOR      CX - CONSTRUCTION      TA - 3RD PARTY TESTING AGENCY  
 GC - GENERAL CONTRACTOR                  CM - CONSTRUCTION MANAGER      ATC - AMERICAN TOWER CORPORATION

**COMMENTS:**



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 ATC SITE NAME:  
**HUDSON 3 NH**  
 SITE ADDRESS:  
 143 DRACUT ROAD  
 HUDSON, NH 33011

**SEAL:**



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

**SPECIAL INSPECTIONS WORKSHEET**

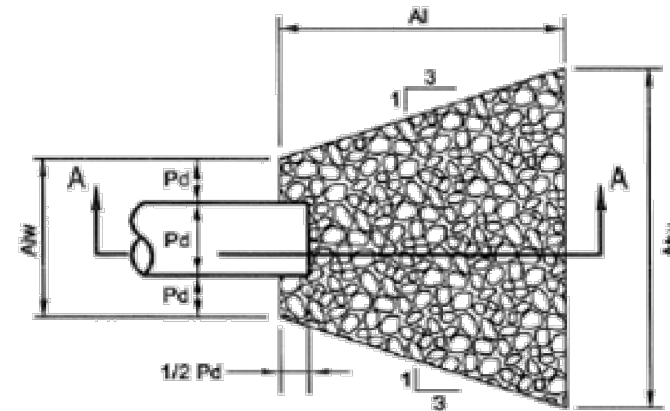
SHEET NUMBER: <b>R-601</b>	REVISION: <b>3</b>
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APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING _____ PLANNING BOARD: CHAIRMAN _____ SIGNATURE DATE: _____ SECRETARY _____ SIGNATURE DATE: _____	PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.	PROPERTY OWNER: TOM W. & ROSA C. CHAN 143 DRAUT ROAD HUDSON, NH 03051  LANDLORD SIGNATURE: _____
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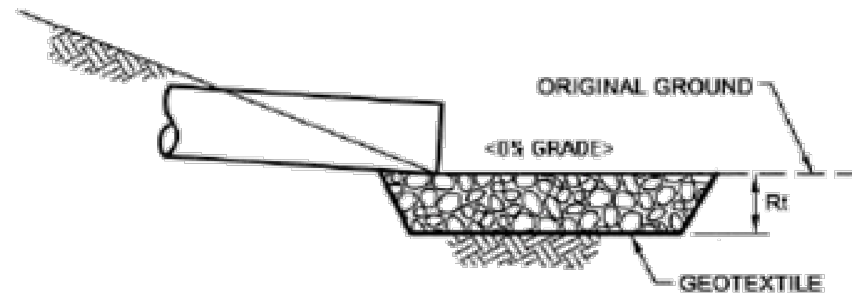
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**STANDARD WORKSHEET #20**  
**Rip Rap Apron Outlet Protection**

PROJECT NAME: HUDSON 3 NH  
 LOCATION: 143 DRACUT ROAD HUDSON, NH 33011  
 PREPARED BY: NPW DATE: March-21  
 CHECKED BY: SRF DATE:



**PLAN VIEW**



**SECTION A - A**

Outlet Number	Pipe Dia. Do (Inches)	Tailwater Condition (Min. or Max.)	Design Qd (cfs)	Manning's Coefficient n	V* (fps)	Rip Rap Size	Rt (in)	Al (ft)	Aiw (ft)	Atw (ft)
SS-1	15	Min.	0.7	0.012	8.6	R-4	18.0"	8.0'	3.8'	12.0'

NOTE: The anticipated velocity should not exceed the maximum permissible shown in the table 6.6 for the proposed rip-rap protection. Adjust for less than full pipe flow. Use Mannings, equation to calculate for pipe slopes >0.05 ft/ft.

Outlet Number	Pipe Dia. Do (Inches)	Pipe Area (Full Flow) (SF)	Pipe Slope (Ft/Ft)	Manning's Coefficient n	Full Flow (Manning's)			Pressure Flow (Yes or No)	Ad / Ar Flow Ratio	Equiv. Pipe Flow Area (SF)	Equiv. Pipe Diameter (Inches)	
					Flow, Qf (cfs)	Velocity, Vf (fps)	Qd / Qf Flow Ratio					
SS-1	15	1.23	0.0200	0.012	9.9	8.0	0.07	1.07	No	0.07	0.1	1

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 DATE OF MEETING \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

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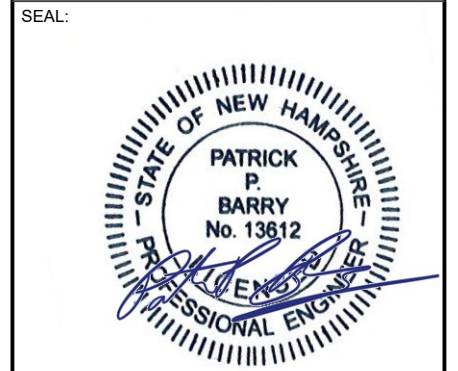
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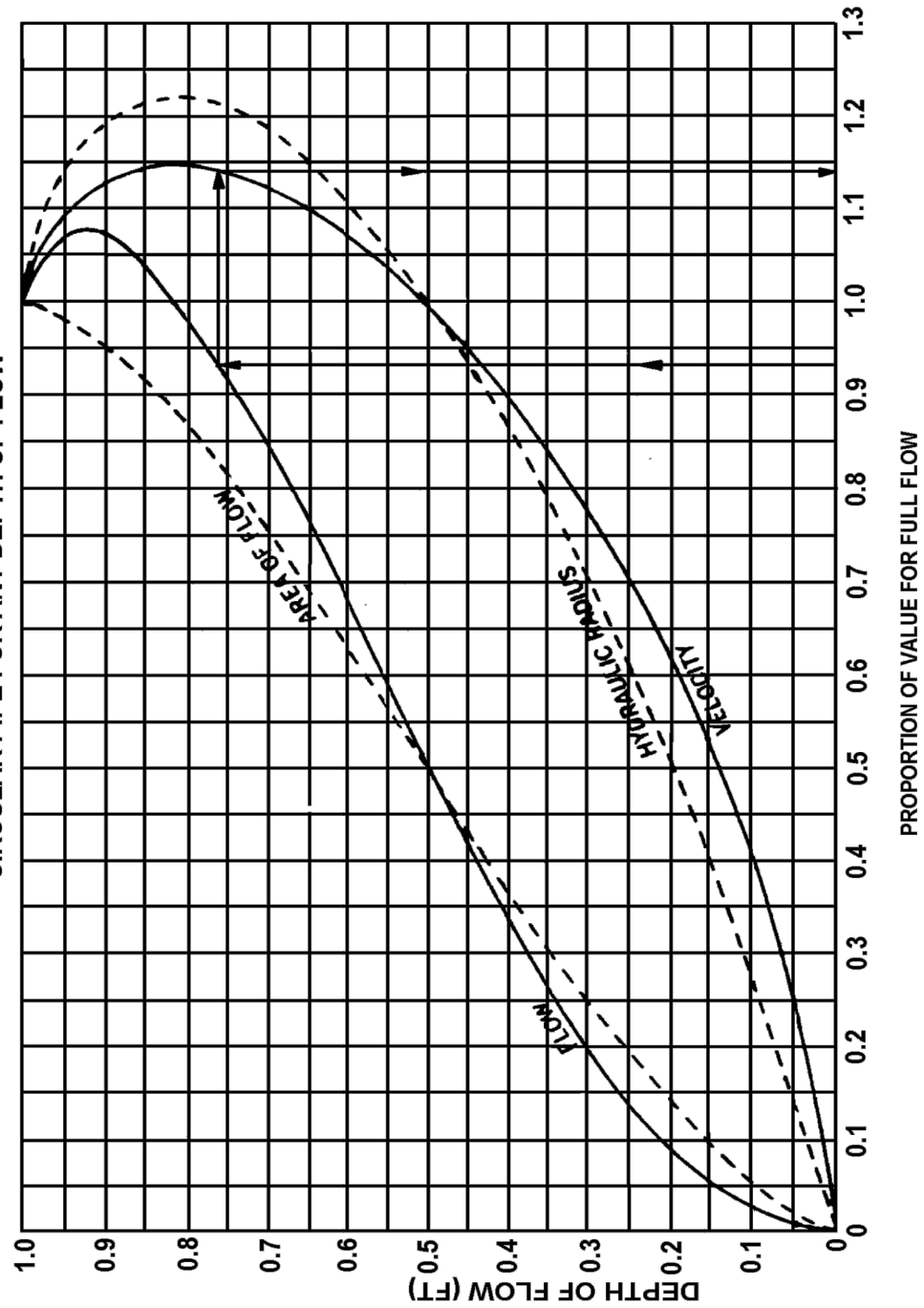
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**SUPPLEMENTAL**

SHEET NUMBER: **R-602**      REVISION: **3**

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RELATIVE VELOCITY & FLOW IN CIRCULAR PIPE FOR ANY DEPTH OF FLOW



DESIGN OF RIPRAP APRON OUTLET PROTECTION FROM A ROUND PIPE FLOWING FULL MINIMUM TAILWATER CONDITION ( $T_w < 0.5 D_o$ )

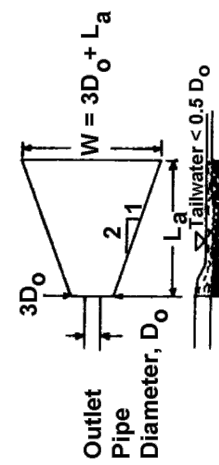
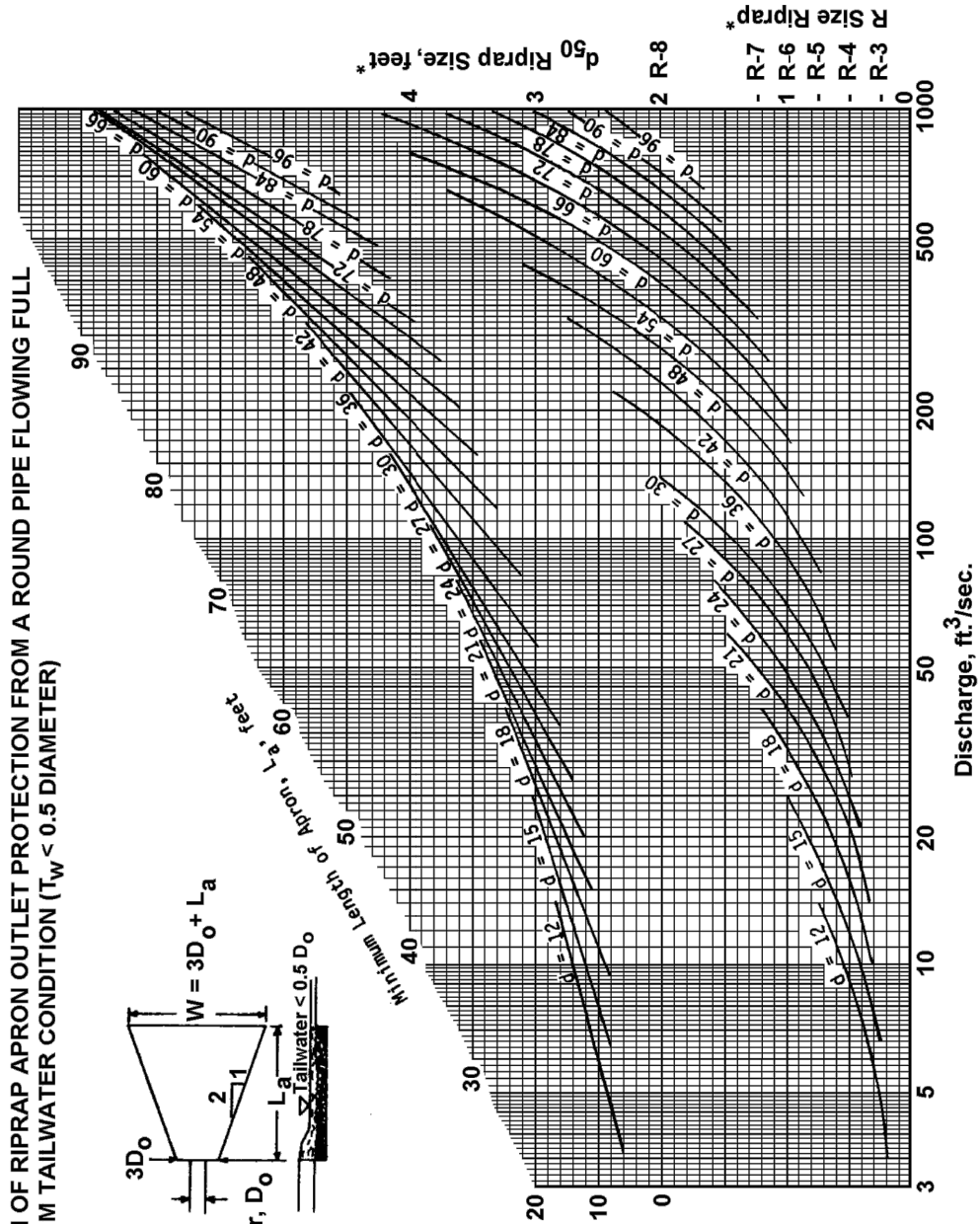


FIGURE 9.3 Riprap Apron Design, Minimum Tailwater Condition



\* For discharge velocities exceeding Maximum Allowable for Riprap indicated, increase  $d_{50}$  stone size and/or provide velocity reduction device.

**AMERICAN TOWER®**  
 dba SPECIALTY TOWER SERVICES  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: 1571

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NW	11/09/20
2	ADDED SPECIAL INSPECTION	NW	11/17/20
3	UPTD APPROVAL BLOCK	NW	03/15/21

ATC SITE NUMBER:

202096

ATC SITE NAME:

HUDSON 3 NH

SITE ADDRESS:

143 DRACUT ROAD  
 HUDSON, NH 33011

SEAL:



DATE DRAWN:	11/09/20
ATC JOB NO:	13014796
ATC LEGACY #:	----

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	3

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING \_\_\_\_\_  
 PLANNING BOARD:  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
 TOM W. & ROSA C. CHAN  
 143 DRAUT ROAD  
 HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

Page 1 of 2	Job Number: 23518-104 r3
Eng: MFP	Customer Ref: TP-19494
	Date: 12/29/2020
Structure: 155-FT PINE TREE MONOPOLE	
Site: 202096 HUDSON 3 NH	
Location: HILLSBOROUGH CO., NH / 42°42'1", -71°23'32"	
Owner: AMERICAN TOWER	
Revision No.: _____	Revision Date: _____

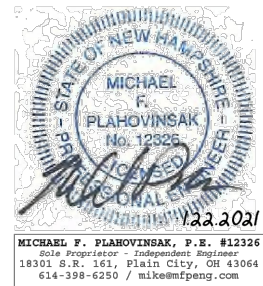
DESIGN			
Building Code: 2006-2015 INTERNATIONAL BUILDING CODE			
Design Standard: ANSI/TIA-222-G			
Wind Speed Load Cases: ASCE-7-05 CONVERTED TO ASCE-7-10			
Load Case #1: 97 MPH Design Wind Speed - $V_{50}(V_{0.17} = 125 \text{ MPH})$			
Load Case #2: 40 MPH Wind with 1" Ice Accumulation			
Load Case #3: 60 MPH Service Wind Speed			
Structure Class	Exposure Cat.	Topography Cat.	Crest Height
II	C	I	

STRUCTURE MEETS THE MINIMUM REQUIREMENTS OF TIA-222-H

EQUIPMENT LIST	
Elev.	Description
151	(12) PANEL ANTENNAS + MOUNTING (125 FT2 / 2,000 LBS)
151	GENERIC ANTENNA MOUNT
141	(12) PANEL ANTENNAS + MOUNTING (175 FT2 / 2,250 LBS)
141	GENERIC ANTENNA MOUNT
131	(12) PANEL ANTENNAS + MOUNTING (175 FT2 / 2,250 LBS)
131	GENERIC ANTENNA MOUNT
121	(12) PANEL ANTENNAS + MOUNTING (125 FT2 / 2,000 LBS)
121	GENERIC ANTENNA MOUNT

ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE  
POLE DESIGNED FOR A MAX 36-FT FALL RADIUS  
PINE TREE BRANCHES SPACED EVENLY FROM 15'-0"

STRUCTURE PROPERTIES					
Cross-Section: 18-Sided			Taper: 0.21672 in/ft		
Shaft Steel: ASTM A572 GR 65			Baseplate Steel: ASTM A572 GR 50		
Anchor Rods: 2.5 in. F1554 GR. 105 X 8'-0"					
Sect.	Length (ft)	Thickness (in)	Splice (ft)	Top Dia. (in)	Bot Dia. (in)
1	49.00	0.2500	5.25	27.50	38.12
2	43.50	0.4375	6.25	36.48	45.91
3	40.00	0.7500	7.00	43.68	52.35
4	40.00	0.8750	0.00	49.33	58.00



**BASE REACTIONS FOR FOUNDATION DESIGN**

Moment: 13468 ft-kp  
Shear: 141 kp  
Axial: 90 kp

Page 2 of 2	Job Number: 23518-104 r3
Eng: MFP	Customer Ref: TP-19494
	Date: 12/29/2020
Structure: 155-FT PINE TREE MONOPOLE	
Site: 202096 HUDSON 3 NH	
Location: HILLSBOROUGH CO., NH / 42°42'1", -71°23'32"	
Owner: AMERICAN TOWER	
Revision No.: _____	Revision Date: _____

**FOUNDATION NOTES:**

1. ALL FOUNDATION CONCRETE SHALL USE TYPE II CEMENT AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45 AND SHALL BE AIR ENTRAINED 6% (± 1.5%). ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.

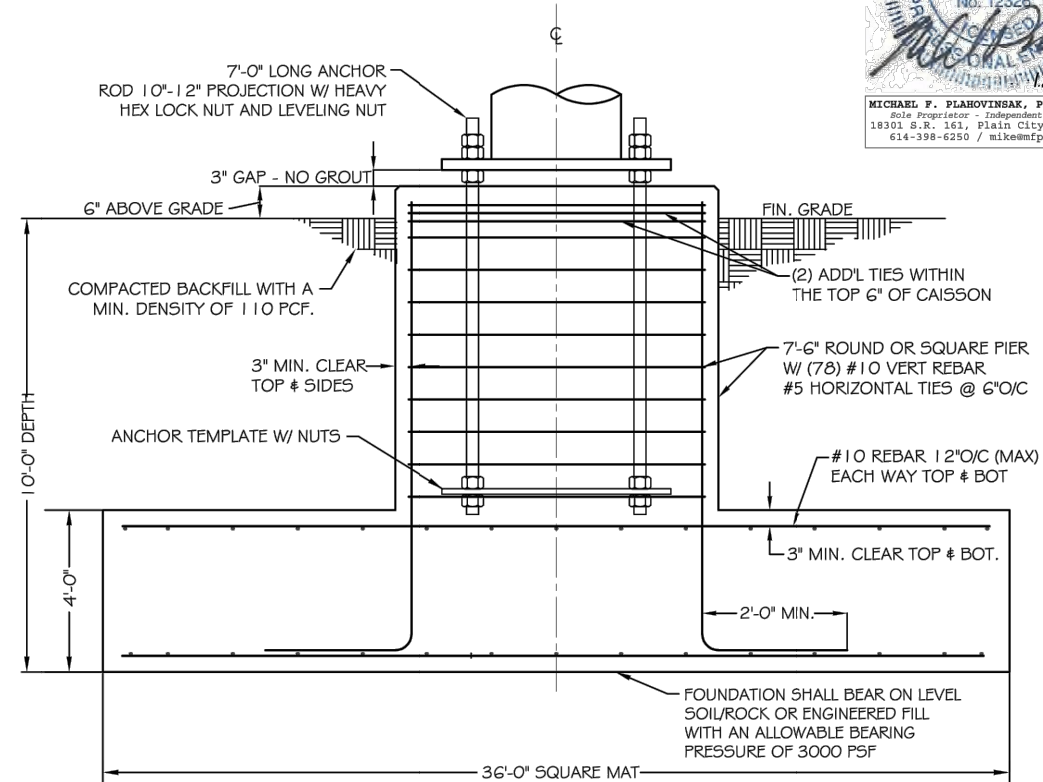
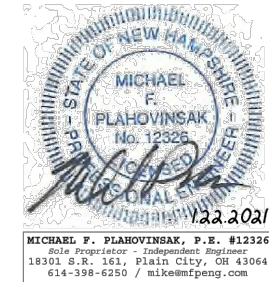
2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 VERTICAL BARS SHALL BE GRADE 60, AND TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. THE PLACEMENT OF ALL REINFORCEMENT SHALL CONFORM TO ACI 318, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

3. THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS TO SUPPORT THE EXCAVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.

4. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY:  
ENGINEER: SGS, INC.  
REPORT NO.: 2006026 (DATED 10/28/20)

5. ESTIMATED CONCRETE VOLUME = 205 CUBIC YARDS.

6. THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:  
MOMENT: 13468 FT\*KIPS  
SHEAR: 141 KIPS  
AXIAL: 90 KIPS



**SPREAD FOOTING**

NOT TO SCALE

APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING \_\_\_\_\_  
PLANNING BOARD:  
CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

PROPERTY OWNER:  
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143 DRAUT ROAD  
HUDSON, NH 03051

LANDLORD SIGNATURE: \_\_\_\_\_

**TOWER DRAWINGS**

SHEET NUMBER: **R-604**  
REVISION: **3**