

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE:

APPLICATION OF HOMELAND TOWERS, LLC AND  
NEW CINGULAR WIRELESS PCS, LLC d/b/a AT&T  
FOR A CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED FOR THE  
CONSTRUCTION, MAINTENANCE, AND  
OPERATION OF A TELECOMMUNICATIONS  
FACILITY AT 16 COOTE HILL ROAD,  
TOWN OF SHERMAN, CONNECTICUT

DOCKET NO. 499

February 1, 2022

HOMELAND TOWERS, LLC AND NEW CINGULAR WIRELESS PCS, LLC d/b/a AT&T  
DEVELOPMENT & MANAGEMENT PLAN

Homeland Towers, LLC, the Certificate Holder in the above-referenced Docket, respectfully submits the following Development & Management Plan (“D&M Plan”) documents and materials for Facility approved in Docket No. 499 at 16 Coote Hill Road, the certificate site:

Homeland Towers, LLC cover letter dated February 1, 2022 with the following Exhibits:

- Exhibit A: AT&T antenna and generator specifications and Town of Sherman equipment specifications;
- Exhibit B: January 27, 2022 analysis prepared by All Points Technology Corporation regarding the feasibility of installing open bottom box culverts at one or both of the watercourse crossings;
- Exhibit C: Traffic Management Plan;
- Exhibit D: Letter dated April 12, 2021 from the State Historic Preservation Office confirming that the approved Facility will have no impact on historic resources; and
- Exhibit E: Geotechnical Engineering Report prepared by Atlantic Consulting & Engineering dated July 22, 2021 and Tower Foundation Structural Drawings and Analysis prepared by Tapp dated January 5, 2022.

Two full-sized sets and 15 half-sized sets of D&M Plan Drawings prepared by All-Points Technology Corporation dated January 18, 2022 and signed and sealed by Robert Charles Burns, CT P.E. license no. 20071.

**CERTIFICATE OF SERVICE**

I hereby certify that on this day one original and 15 hard copies, and one electronic version of the foregoing were sent to the Connecticut Siting Council and one electronic copy was sent to:

Stan Greenbaum  
9 Peace Pipe Lane  
Sherman, CT 06784  
Phone (860) 354-2454  
[sgreenbaum@uchicago.edu](mailto:sgreenbaum@uchicago.edu)

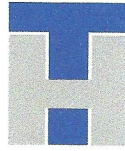
Dated: February 1, 2022



---

Lucia Chiochio, Esq.  
Cuddy & Feder LLP  
445 Hamilton Ave, 14th Floor  
White Plains, NY 10601  
(914)-761-1300

cc: Manny Vicente, Homeland Towers  
Ray Vergati, Homeland Towers  
Harry Carey, AT&T  
Brian Leyden, AT&T  
Christopher B. Fisher, Esq., Cuddy & Feder LLP  
Kristen Motel, Esq., Cuddy & Feder LLP  
APT  
C Squared



## HOMELAND TOWERS

January 28, 2022

Via Federal Express

Honorable John Morissette, Presiding Officer  
And Members of the Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

Re: Docket No. 499 – Homeland Towers LLC (HT) and New Cingular Wireless PCS, LLC d/b/a AT&T  
Development & Management Plan- Tower Facility at 16 Coote Hill Road, Sherman, CT (CT009).

Dear Mr. Morissette and Members of the Siting Council,

Homeland Towers (“HT”) respectfully requests that you please accept for review and Council approval this Development & Management Plan (“D&M Plan”) filing for the Facility as approved in Docket No. 499.

**Tower, Compound & Other Equipment**

Enclosed are fifteen (15) sets of 11”x17” Development & Management Plans dated January 18, 2022 prepared by All Points Technology Corporation. These plans are being filed in accordance with the Council’s Decision and Order dated August 26, 2021 (“Decision and Order”). Two full-sized sets of the Development & Management Plans are also enclosed. The D&M Plan incorporates a 170’ galvanized monopole as provided for in the Siting Council’s Decision and Order in this Docket. AT&T will initially install six (6) panel antennas, nine (9) RRH’s and two (2) squid boxes at a centerline of 166’. The Town of Sherman also plans on installing (1) dipole antenna for Public Works, (1) dipole antenna for Fire Department, (1) dipole antenna for LCD Dispatch, (1) dipole antenna for LCD Command and (1) microwave dish. All antennas will be painted gray/blue to match the color of the galvanized monopole. Attached as Exhibit A contains antenna and generator specification sheets for AT&T’s antennas and generator along with the specifications of the Town of Sherman’s public safety equipment. Attached as Exhibit E please also find a geotechnical study dated July 22, 2021 prepared by Atlantic Consulting and Engineering as well as a structural design report for the tower and foundation dated January 5, 2022 prepared by TAPP.

**Conditions of Decision and Order to be submitted and approved by Council prior to the commencement of facility construction:**

- Per Condition 1, Homeland shall comply.
- Per Condition 2(a), a copy of the DEEP-issued Stormwater Permit shall be submitted.
- Per Condition 2(b), please see the enclosed D&M Plan drawings.
- Per Condition 2(c), as shown on Sheet CP-1 of the enclosed D&M Plans, the monopole is designed with a yield point at 90’ AGL to ensure that the tower setback radius remains within the property boundaries.



## HOMELAND TOWERS

- Per Condition 2(d) & 2(e), the D&M Plan includes construction plans for the site clearing, drainage, and erosion and sedimentation control measures consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control as amended as well as the Wetland/Watercourse Protection Plan.
- Per Condition 2(f), attached as Exhibit B is a letter dated January 27, 2022 prepared by All Points Technology Corporation addressing the feasibility of installing open bottom box culverts at one of both watercourse crossings.
- Per Condition 2(g) and (h), the proposed D&M Plan includes Species Protection Plan and site clearing will be conducted between November 1 and March 30.
- Per Condition 2(i), attached as Exhibit C is a Traffic Management Plan.
- Per Condition 2(j), attached as Exhibit D is a concurrence letter from SHPO dated April 12, 2021.
- Per Condition 2(k), construction of the facility will take place between the hours of 8:00am and 5:00pm, Monday through Friday.
- Per Conditions 3-16, Homeland shall comply.

### **Required Notifications**

In accordance with the provisions of RCSA Section 16-50j-77, Homeland Towers hereby notifies the Council of its intention to begin site work immediately after Council approval of the D&M Plan. Construction of the tower and other site improvements will commence upon issuance of a local building permit. The supervisor for all construction related matters on this project is David Weinpahl with On-Air Engineering, located at 88 Foundry Pond Road, Cold Spring, NY 10516 and can be reached by telephone at 201-456-4624.

We respectfully request that this matter be included on the Council's next available agenda for review and approval. Thank you for your consideration of the enclosed.

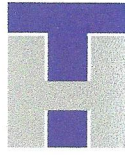
Sincerely,

  
Raymond Vergati  
rv@homelandtowers.us

### Enclosures

cc: Honorable Don Lowe, First Selectman, Town of Sherman  
Manny Vicente, Homeland Towers LLC  
Brian Leyden, AT&T  
Scott Chasse, P.E., APT  
Lucia Chiocchio, Esq., Cuddy & Feder LLP





HOMELAND TOWERS

## **EXHIBIT A**

(AT&T and Town of Sherman/LCD antenna and generator specifications)

**Rooftop / Towertop**

The DC9-48-60-24-8C-EV is designed to provide the ultimate coordination between the SPD and the RRH/RRU by offering industry-leading low-clamping voltage of 160V and extremely robust protection for use in a high DC voltage environment. Capable of providing 12.5kA (10/350  $\mu$ s) max per circuit surge capacity for up to 9 -48V DC circuits.

powered by  
**Strikesorb<sup>®</sup>**

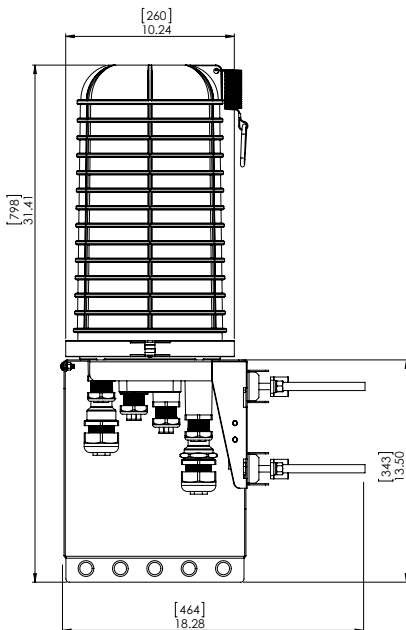


**Features**

- Provides discrete protection for nine individual -48V DC circuits
- Maximum impulse current 12.5kA 10/350  $\mu$ s
- Fiber connections for up to 24 fiber pair
- Simplifies inter-connectivity and cable management for DC conductors
- UL 1449 4th Edition Type 2 protective device for DC applications
- IEC 61643-11 Class I protection
- Copper-coated lid to reduce power line interference
- Patented design
- Patented Strikesorb technology ensures lowest let-through voltage available in the industry, providing enhanced coordination with the RRH/RRU
- Raycap recommends that DC protection system be installed within 5 meters of the radio

**Benefits**

- Strikesorb modules are fully recognized to UL 1449 4th Edition, and IEC 61643-11 Safety Standards, meeting all intermediate and high current fault requirements to facilitate use in original equipment manufacturers (OEM) applications
- Strikesorb offers unique maintenance-free protection against direct lightning currents
- Design provides maximum flexibility for installation
- NEMA 4X enclosure



Strikesorb is a registered trademark of Raycap  
© 2019 Raycap All rights reserved.  
G02-01-515 190212

**SPECIFICATIONS**

**DC Surge Protection Solutions**

**DC9-48-60-24-8C-EV**

**Overvoltage Protection and Fiber Distribution/Cable Management Solution**

powered by

**Strikesorb®**

**Electrical**

Model Number	DC9-48-60-24-8C-EV	
CEQ / ANT Number	CEQ.21427	
Number of Circuits Protected	9	
Surge Protective Device (SPD) Type per UL 1449 4th Edition	Type 2	
Surge Protection Class as per IEC 61643-11	Class I	
Nominal Operating DC Voltage [U <sub>n</sub> ]	-48 VDC	
Nominal Discharge Current [I <sub>n</sub> ] per UL 1449 4th Edition	20 kA 8/20 μs	
Maximum Impulse (Lightning) Current [I <sub>imp</sub> ] per IEC 61643-11	12.5 kA 10/350 μs	
Maximum Continuous Operating DC Voltage [U <sub>c</sub> ] (MCOV)	60 VDC	
Voltage Protection Level [U <sub>p</sub> ] at 12.5kA per IEC 61643-11	160 V	
Voltage Protection Level [U <sub>p</sub> ] at 5kA per IEC 61643-11	145 V	
Voltage Protection Rating (VPR) per UL 1449 4th Edition	330 V	
Suppression Technology	MOV	
Strikesorb Module Type 2CA (UL 1449 4th edition)	30-V1-2CEV	
Protection Modes:	Normal Mode	-48V to Return
	Common Mode	Return to Ground

**Mechanical**

Connection Terminal (Suppression) Method (for all power cables)	Compression lug 2 hole, #10, 5/8 pitch, #12 – #4 AWG [3.3 – 21.15 mm <sup>2</sup> ]	
Connection Terminal (Terminal Block) Method	Copper	#12 to #4 AWG [3.3 – 21.15 mm <sup>2</sup> ]
Fiber Connection Method	LC-LC Single Mode	
Environmental Ingress Protection (IP) Rating	IP 68	
Operating Temperature (°C)	-40° C to +100° C	
Storage Temperature (°C)	-70° C to +80° C	
Cold Temperature Cycling IEC 61300-2-22	-30° C to +60° C 200 hrs @5 PSI	
Resistance to Aggressive Materials CEI IEC 61073-2	Including Acids and Bases	
UV Protection ISO 4892-2 Method A	Xenon-Arc 2160 hrs	
Enclosure Type	Outdoor NEMA 4X	
Enclosure Dimensions (L x W x H)	18.28" x 10.24" x 31.4" [464 x 260 x 797 mm]	
Weight*	System: 18.5 lbs [8.39 kg] Mount: 10.2 lbs [4.62 kg] Total: 28.7 lbs [13.02 kg]	
Combined Wind Loading	Sustained   Gust	150 mph Sustained: 105.7 lbs [470 N]   195 mph Gust: 213.6 lbs [950 N]

**Optional Kits Available**

Trunk Gland Kit A	CEQ.21428	Oval Gasket for 4AWG and 6AWG Trunk
Trunk Gland Kit B	CEQ.21429	Oval Gasket for (2) 4AWG Trunks
Trunk Gland Kit C	CEQ.21434	Oval Gasket for (2) 8AWG Trunks

**Standards Compliance & Certifications**

NEBS certified to: GR-63-CORE Issue 4, GR-1089-CORE Issue 6, GR-3108-CORE Issue 3, GR-487-CORE Issue 4, ATT-TP-76200 Issue 18

Strikesorb modules are compliant to the following Surge Protection Device Standards:

Standards: UL 1449 4th Edition: 2011, IEC 61643-11: 2011, EN 61643-11: 2012, IEEE C62.11: 2005, IEEE C62.41: 2002, IEEE C62.45: 2002, NEMA-LS-1

Certifications: UL, VDE, CE

AWG=American Wire Gauge



**Raycap**

www.raycap.com

# RRUS 4415 B30 DATA SHEET

For Turf Vendors

2019-10-03 Rev C

# RRUS 4415 B30

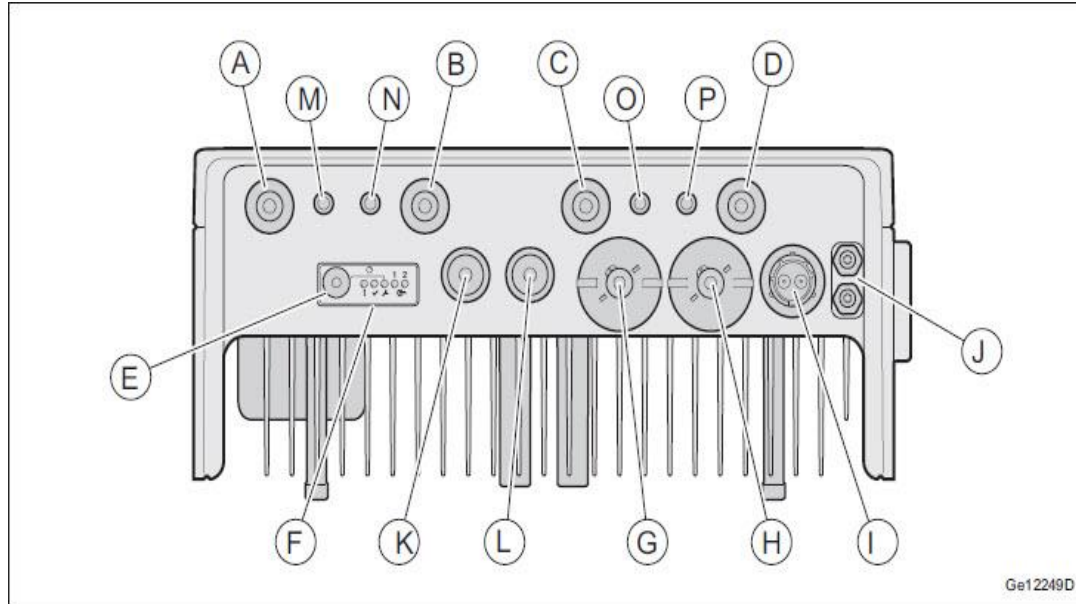


- › B30 A+ B
  - TX = 2350 – 2360 MHz
  - RX = 2305 – 2315 MHz
- › CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. **Install 2 SFPs and connect 2 fiber pair to the RRUS 4415 during initial install.**
- › Only use Ericsson supplied and approved SFP3 **RDH10247/25**
  - Exception: SFP7 RDH 10265/3 for CPRI 1.4km to 10km
  - Exception: SFP7 (pair): RDH 102 70/1 and RDH 102 70/2 for CPRI > 10km
- › 2 external alarm inputs
- › Max wind load @ **50m/sec = 260N**
- › Breaker size = **25A**, DC Power Consumption = **670 W (for dimensioning)**
- › **200mm** horizontal minimum separation required for side by side mounting
- › **200mm** separation minimum required from antenna backplane to radio
- › **400mm** vertical minimum outdoor/indoor separation required between 2 radios
- › **500mm** vertical separation below antenna
- › Min, Max DC cable size from squid to radio = **10,8 AWG**
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- › Ground cable size = **2AWG**
- › Dimensions (incl. handles, feet and sunshield, w/o fan unit)
  - Height: **16.5"** (**420 mm**)
  - Width: **13.4"** (**342 mm**)
  - Depth: **5.9"** (**123 mm**)
- › Weight, excl. mounting hardware = **47.4 lbs (21.5 kg)**





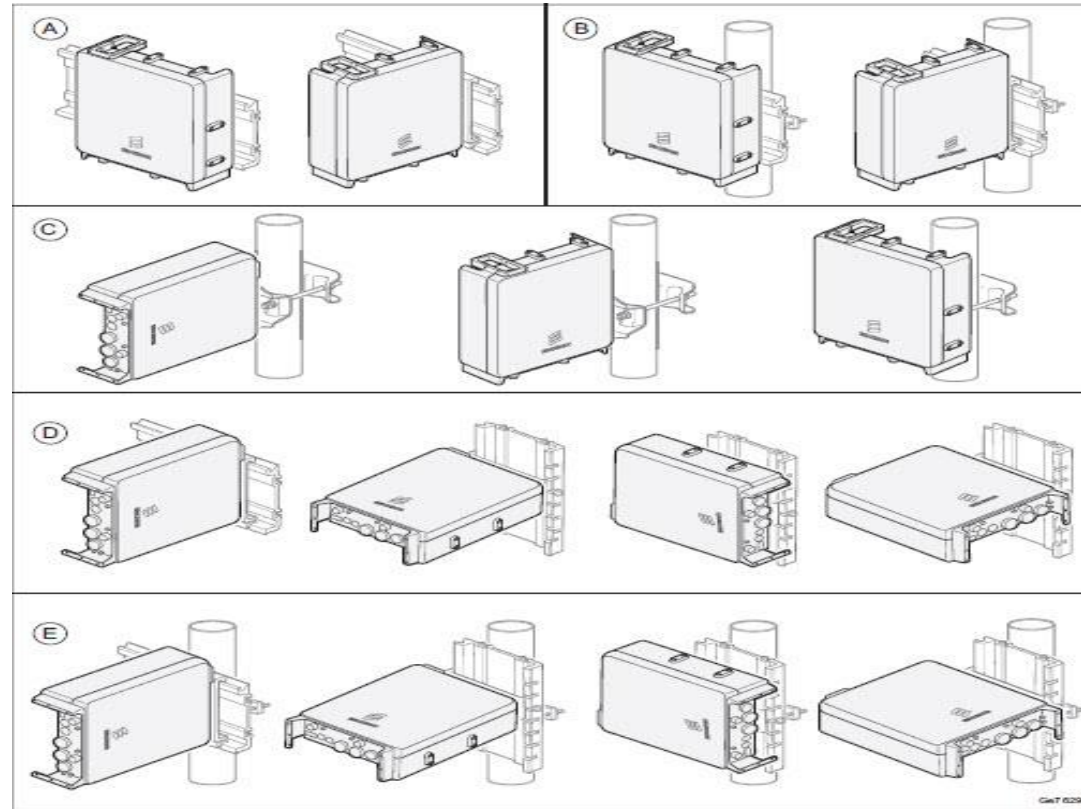
# RRUS 4415 B30 CONNECTION INTERFACES



Position	Description	Marking	Connector Types	Cable Types
A	Antenna A	A ↗ ↘	4.3-10 connector	
B	Antenna B	B ↗ ↘		
C	Antenna C	C ↗ ↘		
D	Antenna D	D ↗ ↘		
E	Maintenance button	—	—	—
F	Optical indicators	! ⊕ 1, ⊕ 2	—	—
G	Optical cable 1	⊕ 1	LC (On SFP) with support for FullAXS	
H	Optical cable 2	⊕ 2		
I	-48 V DC power supply	POWER	Power connector	
J	Grounding	⚡	2 x M6 bolt	
K	External alarm and fan unit power supply and control	⚡	Mini-DIN connector, 14 pin	
L	ALD (used for a RET unit for example)	ALD	Mini-DIN connector, 8 pin	
M <sup>(1)</sup>	TX monitor A	A ↗ ↘	SMA connector	
N <sup>(1)</sup>	TX monitor B	B ↗ ↘		
O <sup>(1)</sup>	TX monitor C	C ↗ ↘		
P <sup>(1)</sup>	TX monitor D	D ↗ ↘		

CPRI, RET/AISG port, and ALD port caps have lanyards attached to the radio. DC and RF ports have protective caps to be removed when DC, RF connected to radio.

# RRUS 4415 MOUNTING OPTIONS





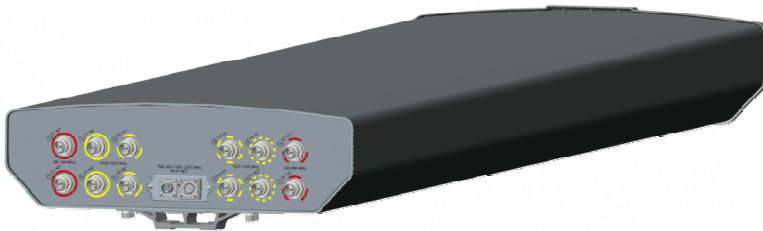
**ERICSSON**

# EPBQ-654L8H8-L2

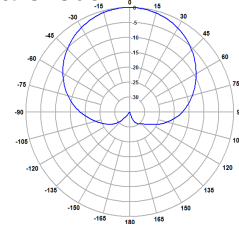
**12-Port Multi-Band Antenna / 8' / 65°**  
 698 ~ 894MHz, XX-pol., H67° / V9.3°, ET:2~12°  
 1695 ~ 2400MHz, XXXX-pol., H61° / V8.1°, ET: 2~12°

## Electrical Specification

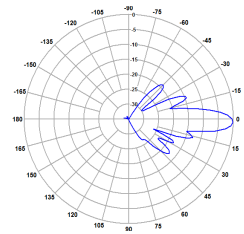
Frequency(MHz)	698~806	806~894	1695~1850	1850~1910	1910~2180	2300~2400
Impedance(Ω)	50	50	50	50	50	50
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Gain(dBi)	15.9	16.2	16.9	17.3	17.7	17.8
Beam width	Horizontal	67°	66°	61°	60°	60°
	Vertical	9.3°	8.7°	8.1°	7.8°	7.4°
VSWR	≤1.5:1	≤1.5:1	≤1.5:1	≤1.5:1	≤1.5:1	≤1.5:1
Front-to-Back Ratio(dB)	>25	>25	>25	>25	>25	>25
Electrical Down tilt	2° ~ 12°	2° ~ 12°	2° ~ 12°	2° ~ 12°	2° ~ 12°	2° ~ 12°
Isolation Ports(dB)	≥25	≥25	≥25	≥25	≥25	≥25
Isolation Frequency(dB)	≥30	≥30	≥30	≥30	≥30	≥30
Cross Pole Discrimination	7 dB @ ±60°	7 dB @ ±60°	7 dB @ ±60°	7 dB @ ±60°	7 dB @ ±60°	7 dB @ ±60°
	15.0 dB @ 0°	15.0 dB @ 0°	15.0 dB @ 0°	15.0 dB @ 0°	15.0 dB @ 0°	15.0 dB @ 0°
Side Lobe Suppression (Up to 10° from Boresight)	> 16dB	> 16dB	> 16dB	> 16dB	> 16dB	> 16dB
PIM (2x20w, dBc)	≤ -150	≤ -150	≤ -150	≤ -150	≤ -150	≤ -150
Input Power(W)	400	400	300	300	300	300



<698~806MHz>

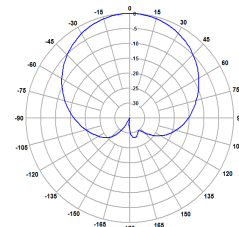


Horizontal Pattern

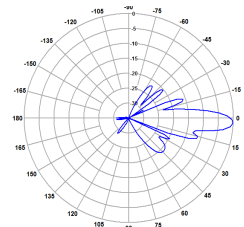


Vertical Pattern (2°)

<806~894MHz>

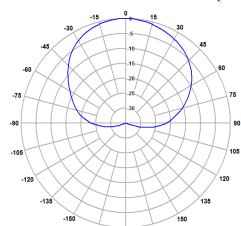


Horizontal Pattern

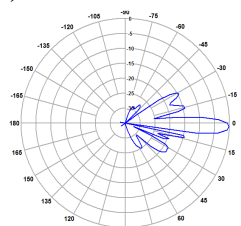


Vertical Pattern (2°)

<1695~2400MHz (Y1,Y2)>

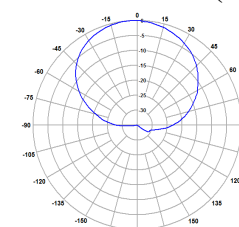


Horizontal Pattern

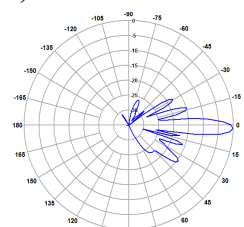


Vertical Pattern (2°)

<1695~2400MHz (Y3,Y4)>



Horizontal Pattern



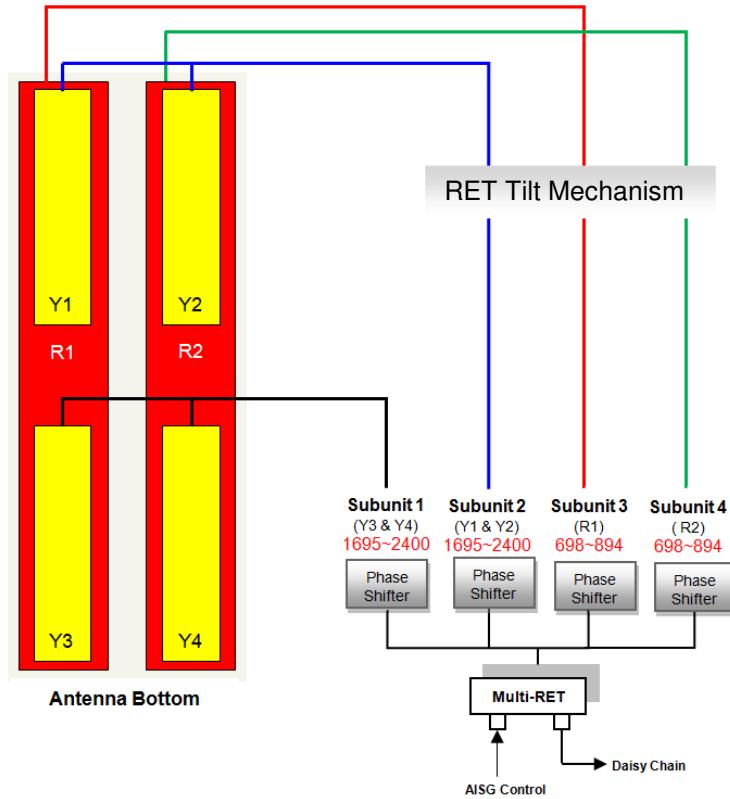
Vertical Pattern (2°)

# EPBQ-654L8H8-L2

**12-Port Multi-Band Antenna / 8' / 65°**  
 698 ~ 894MHz, XX-pol., H67° / V9.3°, ET:2~12°  
 1695 ~ 2400MHz, XXXX-pol., H61° / V8.1°, ET: 2~12°

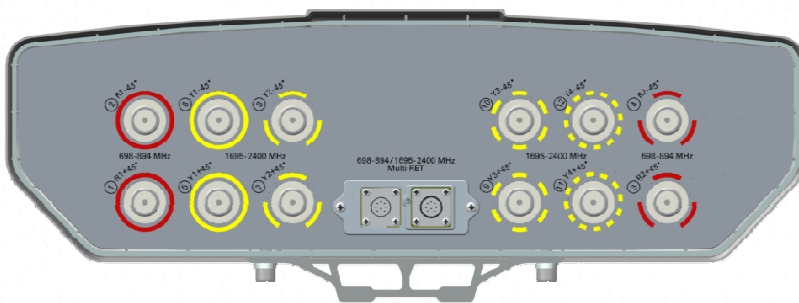
## Mechanical Specification

<b>Dimension (WxDxH)</b>	21.0x6.3x96.0 inches (533x160x2438 mm)
<b>Weight (Without clamp)</b>	86.0lbs (39.0kg)
<b>Connector</b>	12 x 4.3-10 (Female), Long Neck (4 x 698-894 8 x 1695-2400MHz)
<b>Max Wind Speed</b>	150 mph
<b>WindLoad (@100 mph)</b>	1994N, 598N, 1994N (Front , Side , Rear)



## Correlation Table

Frequency range	Array	Connector
698-894 MHz	R1	4.3-10 Female
698-894 MHz	R2	4.3-10 Female
1695-2400 MHz	Y1	4.3-10 Female
1695-2400 MHz	Y2	4.3-10 Female
1695-2400 MHz	Y3	4.3-10 Female
1695-2400 MHz	Y4	4.3-10 Female



**\*Note**

- Gain can vary and the values stated are typical
- Environmental Compliance: IP 65 for Radome & IP 67 for Connectors
- RET Motor Configuration: Field Replaceable RET Electronic Control Module RET Motor is internal to antenna & not field replaceable
- Compliant with AISG: AISG2.0
- Accessory: Standard Mounting Kit is included (Mechanical Down Tilt, KCLDM1B30000 is sold separately)



# 8340-100 series

RUGGED POWER



Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.

**Intertek 4003706**

**Conforms to UL STD 2200**

**Certified to CSA STD C22.2 No. 100**

Meets EPA Emission Regulations

CA/MA Emissions Compliant

**2 year standard warranty**

Available Models:

- **8340-100-LP-15-03** LPG 15 kW -48 VDC



## The concepts and features behind Polar's Hybrid application generator for telecommunications include:

**SMALL FOOTPRINT.** Polar's DC generator is considerably smaller in size than an AC generator. You can now backup sites that could not accommodate an AC generator. Smaller also means less cost for space leasing.

**LOW MAINTENANCE.** Due to oversized oil sump, and oil/fuel filtration system.

**LOW ACOUSTIC NOISE.** <62 dBA @ 7 meters for LPG, and low vibration so as not to disturb the local residents or building landlords.

**LIGHTWEIGHT.** Up to 1/3 the weight of a comparable AC generator.

**CORROSION RESISTANT.** All-aluminum enclosure with stainless hardware for low maintenance, and long service life.

**FUEL EFFICIENT.** Up to 85% fuel savings due to smaller engine displacement, high efficiency alternator, and variable speed operation.

**RODENT RESISTANT.** Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines to prevent damage.

**SUPERCAPACITOR STARTER.** Failure to start is the number one problem plaguing generator reliability and typically this is caused by a bad starting battery. Polar unique design has replaced the starting battery with a Super Capacitor. Capacitors are more reliable and last longer than batteries (10-15 year life).

**LONG LIFE.** Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. No transfer switches are required.

**ADVANCED MONITORING.** Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with optional SNMP.

## COMPARING THE COST OF AC vs DC

	AC	DC
Transfer switch required	Yes	No
Permitting costs	\$\$	\$
Shipping to site and installation cost	\$\$	\$
Site preparation/reinforcing structures	\$\$\$	\$
Ethernet/RS232 remote control and monitoring	Extra	Standard

## 8220 ALTERNATOR FEATURES

- No mechanical adjustments
- Very lightweight
- High quality electrical output
- Voltage and current regulation
- Up to 94% efficiency
- Class 220° C insulation
- Anodized type III process for aluminum parts
- Nickel plating for steel parts
- Stator is varnished

## 8220 ALTERNATOR SPECIFICATIONS

Type	Permanent Magnets, NdFeB
Weight (lb/kg)	46.5/21
Regulation Type	Variable engine speed
Stator	3 phase/32 poles
Overcurrent Protection (A)	350
Disconnect Means	Pull fuse block, sized for each generator kW
Voltage Range (VDC)	44 to 62
Alternator Exhaust Flow (cfm/cmm)	130 to 180 / 3.68 to 5.1
MTBF (hr)	100,000+

## ENCLOSURE

Model	88-25-0100
Type	Weather Protective
Materials	Marine Grade Aluminum
Door Hardware	Pad Locked with Removable Side Panels
Mounting	Secure Mounting Tabs

## PERMITTING IS FACILITATED

- Small engine horsepower
- DC generator is fully isolated from the utility grid
- No transfer switch
- Low acoustic noise
- Incorporates all requirements made by local Fire Marshals

## STARTER SUPERCAPACITOR SPECIFICATIONS

Model	20-16-0001
Storage Rating (Farads)	500
Voltage (VDC)	13-14.4
Weight (lb/kg)	12.1/5.5
Operating Temperature (°C/°F)	-40 to 65 / -40 to 149
Service Life (year)	10 to 15

## CHARGER SPECIFICATIONS

Model	00-10-0015
Input Voltage (VDC)	28.8 to 60
Output Voltage (VDC)	14 to 14.4
Recharge time from 0 VDC (min)	10
Recharge time from 8 VDC (min)	2
Weight (lb/kg)	2.2/1

## SOUND EMISSIONS

Contact us for current sound data.

**SPECIFICATIONS NATURAL GAS and LPG**

Engine Model	Natural Gas - Kubota DG972 LPG - Kubota WG972
Cylinders	3 In-line
Displacement (L)	0.962
Bore (in./mm)	2.93/74.5
Stroke (in./mm)	2.9/73.6
Intake Air System	Naturally Aspirated
Engine HP	18
Emissions Compliance	EPA and CARB Certified
Variable RPM	2650 to 3150

**ENVIRONMENTAL**

Operating Temperature (°C/°F)	-40 to 72 or -40 to 162
Operating Humidity %	100
Cold Start Aids	Glow Plugs

**PROPANE ENGINE FUEL CONSUMPTION**

	Output (kW)	gal/hr	L/hr
Kubota 972	4	0.97	3.67
	5	1.1	4.16
	6	1.26	4.77
	7	1.475	5.58
	8	1.69	6.4
	9	1.945	7.36
	10	2.2	8.33
	12	2.52	9.54
	15	3.55	13.44

**ENGINE LUBRICATION SYSTEM**

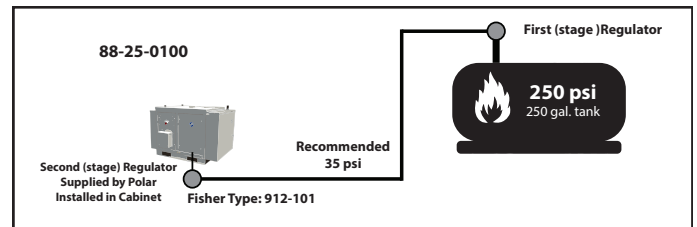
Oil Filter Type	Full flow spin-on canister
Oil Capacity	3.7 L - DG972/WG972
Oil Pressure Switch	Yes
Oil Pressure Transducer	Optional

**ENGINE COOLING SYSTEM**

Type	Pressurized Aluminum Radiator
Water Pump	Belt-driven, Pre-lubed, self-sealing
Fan Type	Electric Fans
Airflow CFM or M <sup>3</sup> /hr	1300 or 2200
Fan Mode	Pusher
Temperature Switch	Yes

**FUEL SYSTEM**

Type	Natural Gas or Propane
Fuel Tank/Line	Supplied By Customer
Max Fuel Flow Rate (BTU/hr)	15 kW - 340,000



Pressure Chart

Minimum	Recommended	Maximum
0.14 psi	0.39 psi	0.5 psi
4 in H2O	11 in H2O	13.9 in H2O
10 mbar	27.4 mbar	34.5 mbar

**POWER ADJUSTMENT FOR AMBIENT CONDITIONS**

Temperature Deration	1% derate for every 5.6 °C (10 °F) above 25 °C (77 °F)
Altitude Deration	3% derate for every 300 m (1000 ft) above 91 m (300 ft)

**WEIGHTS AND DIMENSIONS**

Dry Weight (lb/kg)	680/308
Dimensions (LxWxH) (in/cm)	54 x 38 x 38/137 x 97 x 97

### ENGINE COOLING

System coolant capacity (gal/L)	2.2/8.3
Maximum operation air temperature on radiator (°C/°F)	54/129
Maximum ambient temperature (°C/°F)	49/120

### COMBUSTION REQUIREMENTS

Flow at rated power (cfm/cmm)	47/1.34
-------------------------------	---------

### EXHAUST

Exhaust flow at rated output (cfm/cmm)	90/2.55
Exhaust temperature at rated output (°C/°F)	480/900

### CONTROLLER FEATURES

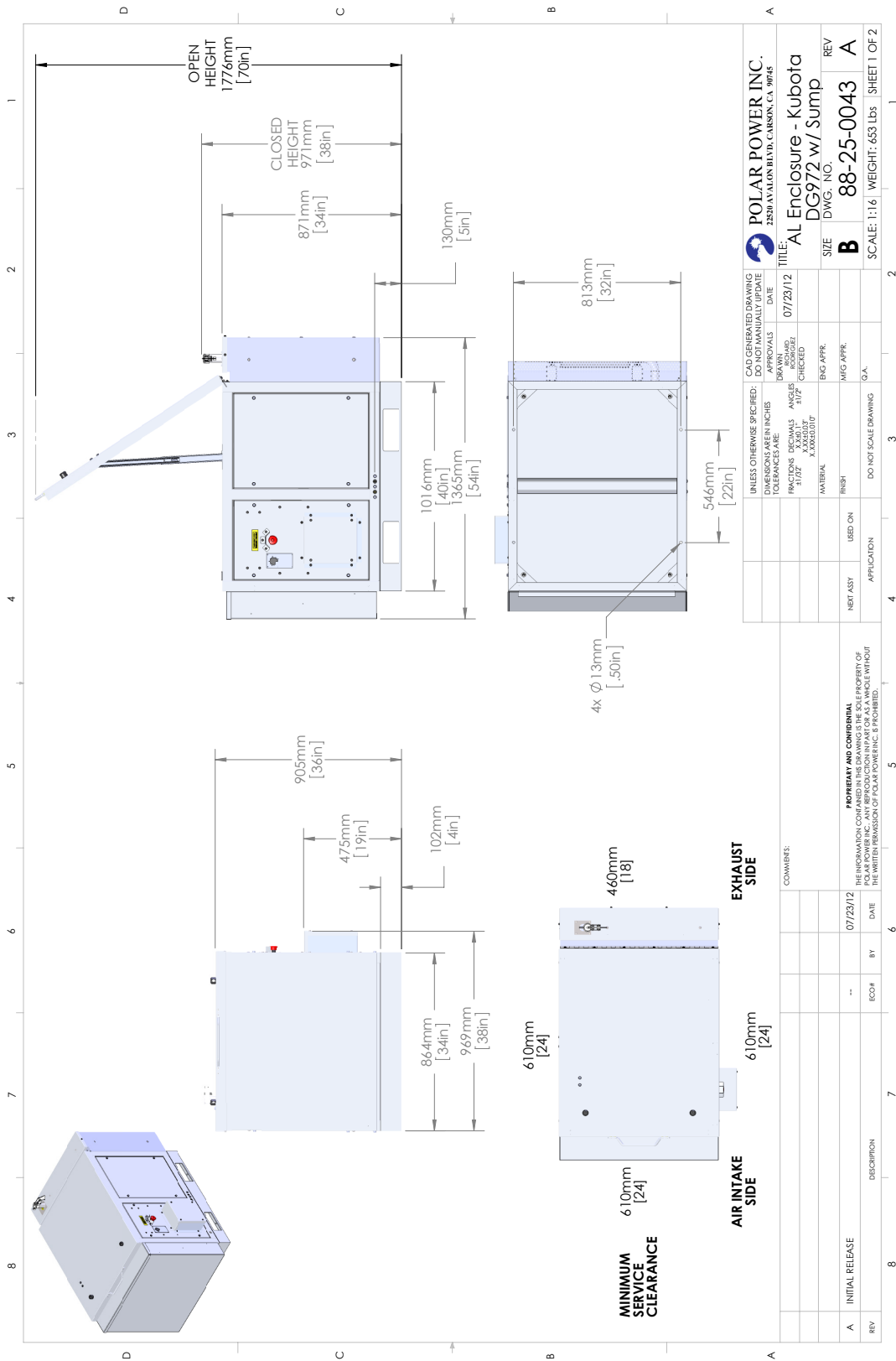
Controller Type.....	Supra Model 250
4-Line Plain Text LCD Display.....	Simple user interface for ease of operation
Engine Run Hours Indication.....	Standard
Programmable Start Delay.....	Standard
Run/Alarm/Maintenance Logs.....	Standard
Engine Start Sequence.....	Cyclic cranking: 5 sec on, 45 sec rest (3 attempts maximum)
Starter Supercapacitor Charger.....	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection.....	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown.....	Standard
Overcrank/Overspeed.....	Standard
Automatic High Engine Temperature Shutdown.....	Standard
Field Upgradeable Firmware.....	Standard
Glow Plug Delay .....	Automatic With Temperature
Engine Start Delay.....	Adjustable, Set at 60 sec
Return to Utility Delay.....	Adjustable, Set at 60 sec
Engine Cooldown.....	Adjustable, Set at 60 sec
Exerciser.....	Programmable, weekly/bi-weekly

### WARNING ALARMS

Low/High Supercapacitor Voltage.....	Standard
High Water Temperature.....	Standard
Low Oil Pressure.....	Standard

### CONTACT CLOSURE FOR REMOTE INDICATION (PN 84-12-0640)

Shutdown Alarm.....	Optional
Warning Alarm.....	Optional
Engine Run.....	Optional
E-Stop Depressed.....	Optional



POLAR POWER INC. 2520 AVILON BLVD, CARSON, CA 90745		DATE: 07/23/12		
TITLE: AL Enclosure - Kubota DG972 w/ Sump		DRAWN AND CHECKED:		
SIZE: B		ENG APPR:		
DWG. NO.: 88-25-0043		MFG APPR:		
SCALE: 1:16		G.A.:		
WEIGHT: 653 LBS		SHEET 1 OF 2		
REV	DESCRIPTION	ECO#	BY	DATE
A	INITIAL RELEASE	--		07/23/12
COMMENTS:				
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES 1/16" .015" .010" .015" X.XX .001" .015" X.XX .001" .015" MATERIAL FINISH USED ON APPLICATION				
CUSTOMER USE ONLY: DO NOT MANUALLY UPDATE				
APPROVALS:				
DO NOT SCALE DRAWING				
PROPERTY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF POLAR POWER INC. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF POLAR POWER INC. IS PROHIBITED.				

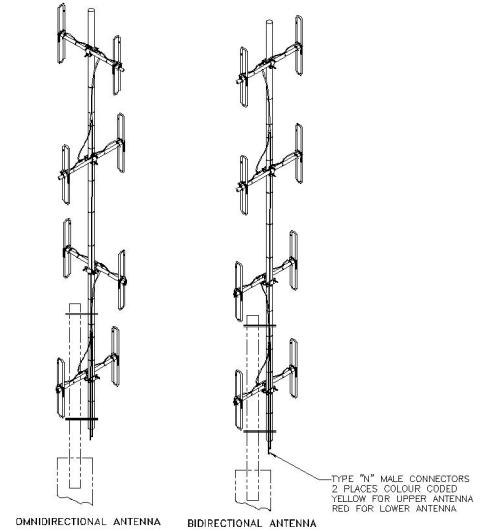


**SD235D-SF2PASNM(D00B)** Exposed dipole array, 3/5.5 dBd, dual, field adj., 138-174 MHz

Also referred as: SRL235/235NM\*2

- A broadband dual antenna perfectly suited for multicoupled systems
- Field adjustable 3 dBd Omni-directional or 5.5 dBd bi-directional pattern
- Low PIM and heavy duty models available

The SD235D is a highly versatile broadband dual antenna featuring omni-directional or bidirectional pattern coverage. The pattern may be easily changed in the field. Because the SD235D covers the 138-174 MHz frequency band, it is ideally suited for use in multicoupled systems. Heavier duty and/or higher power rated models are available on special order.



www.sincltech.com

Region	United States	Europe, Middle East, and Africa	Canada, Caribbean, and Latin America	Asia-Pacific
Telephone	1 800 263 3275	+44 (0) 1487 84 28 19	Canada: 1 800 263 3275 International: +1 905 726 7676	+1 905 727 0165
E-mail	salesusa@sincltech.com	salesuk@sincltech.com	salescan@sincltech.com	salesasia@sincltech.com

Product Specification Sheet  
EPR 017545

SD235D-SF2PASNM(D00B)

Issue: 3

Dated: 11-09-20  
Dated: 30-09-13

#### Electrical Specifications

Frequency Range	MHz	138 to 174
Connector		N-Male
Input VSWR (max)		1.5:1
Polarization		vertical
Impedance	Ω	50
Pattern		Omni or Bi-directional, Adjustable
Vertical beamwidth (typ)	degrees	34
Average Input Power (max)	W	300
Isolation between sections (nom)	dB	30
Lightning protection		DC ground

#### Notes

- \*1 : Qty:2
- \*2 : 125 lbs and 40 lbs
- \*3 : 3 packages

#### Mechanical Specifications

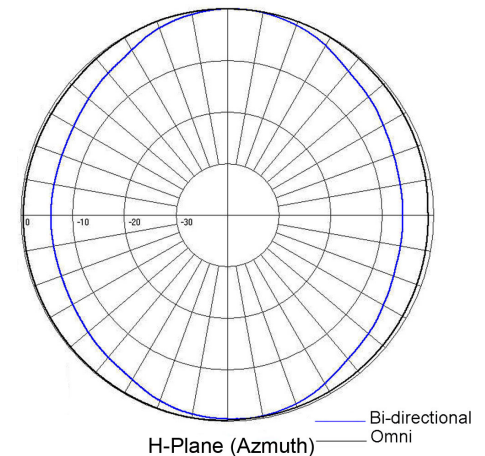
Width	in (mm)	35.5 (902)	
Depth	in (mm)	35.5 (902)	
Length/ Height	in (mm)	240 (6096)	
Base pipe diameter	in (mm)	2.88 (73)	
Radiating element material		aluminum	
Base pipe material		aluminum	
Weight	lbs (kg)	90 (40.86)	
Mounting Hardware (Optional)		Clamp147, Clamp005, or Clamp015	*1
Mounting configurations		top mount	
Actual shipping weight	lbs (kg)	165 (74.91)	*2
Shipping dimensions	in (mm)	246x42x12 (6248x1067x305)	*3

#### Ordering Information

Clamps must be ordered separately.

#### Environmental Specifications

Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	5.6 (0.52)
Wind Loading Area (1/2" ice)	ft² (m²)	9.6 (0.89)
Rated wind velocity (no ice)	mph (km/h)	125 (201)
Rated wind velocity (1/2" radial ice)	mph (km/h)	95 (153)
Lateral Thrust (100 mph No Ice)	lbs (N)	235 (1045.3)
Bending moment (100 mph No Ice)	ft-lbs (Nm)	2307 (3114.5)



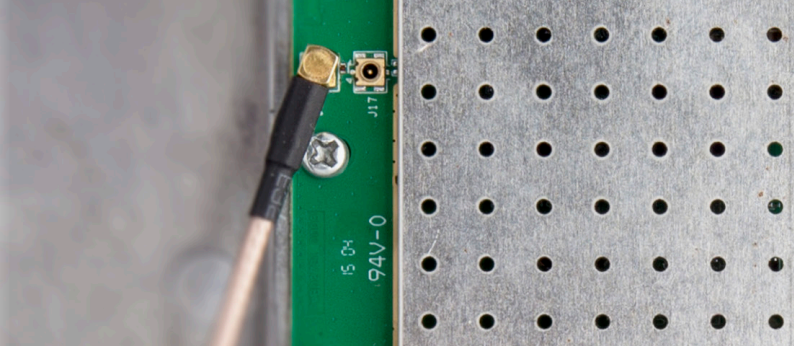
Region	United States	Europe, Middle East, and Africa	Canada, Caribbean, and Latin America	Asia-Pacific
Telephone	1 800 263 3275	+44 (0) 1487 84 28 19	Canada: 1 800 263 3275 International: +1 905 726 7676	+1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salescan@sinctech.com	salesasia@sinctech.com



# LigoPTP 5-N/ 5-23 RapidFire

Outdoor Wireless Device

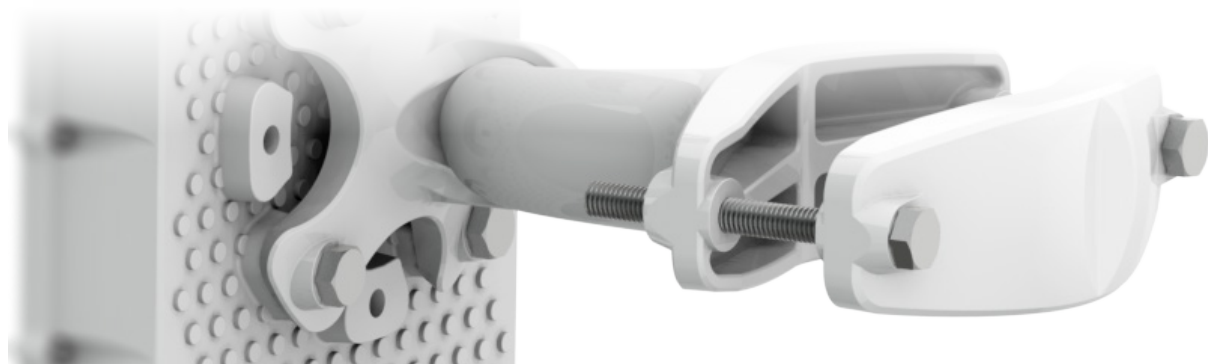




## Outstanding capacity

---

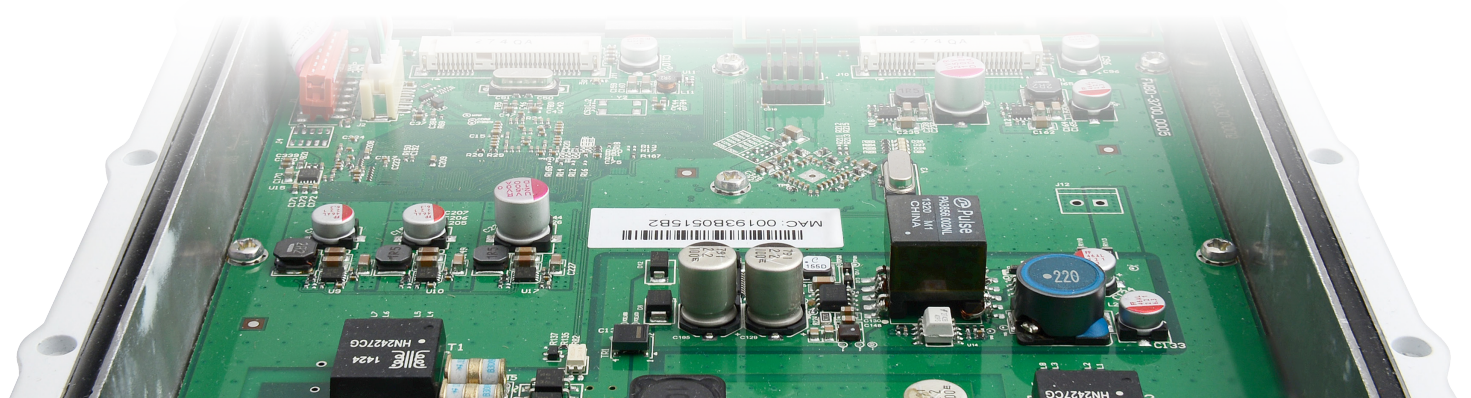
The RapidFire delivers an extremely high 750 Mbps capacity from its unique and powerful RF design which supports up to 256QAM modulation and 31 dBi output power. Our proprietary W-Jet V protocol specifically engineered for high performing PTP scenarios minimizes high interferences even across long distances and stabilizes latency within 2-4 ms range.



## Professional design

---

In addition to achieving maximum performance, LigoWave focuses on delivering flexibility and ease-of-use in our RapidFire series. Our robust mounting bracket enables rapid deployment of the links and ensures survivability during high wind-load. The integrated antenna possess a 45° tilting option which increase deployment flexibility especially in noisy areas. Built-in GORE-TEX glands allows water vapor to pass through during humid conditions. Detachable handle eases the carrying of the devices and can also work as an additional tightening option of the device. Newly designed RGB LEDs indicate different device statuses and signal levels when aligning the antenna in 1 dBm steps.

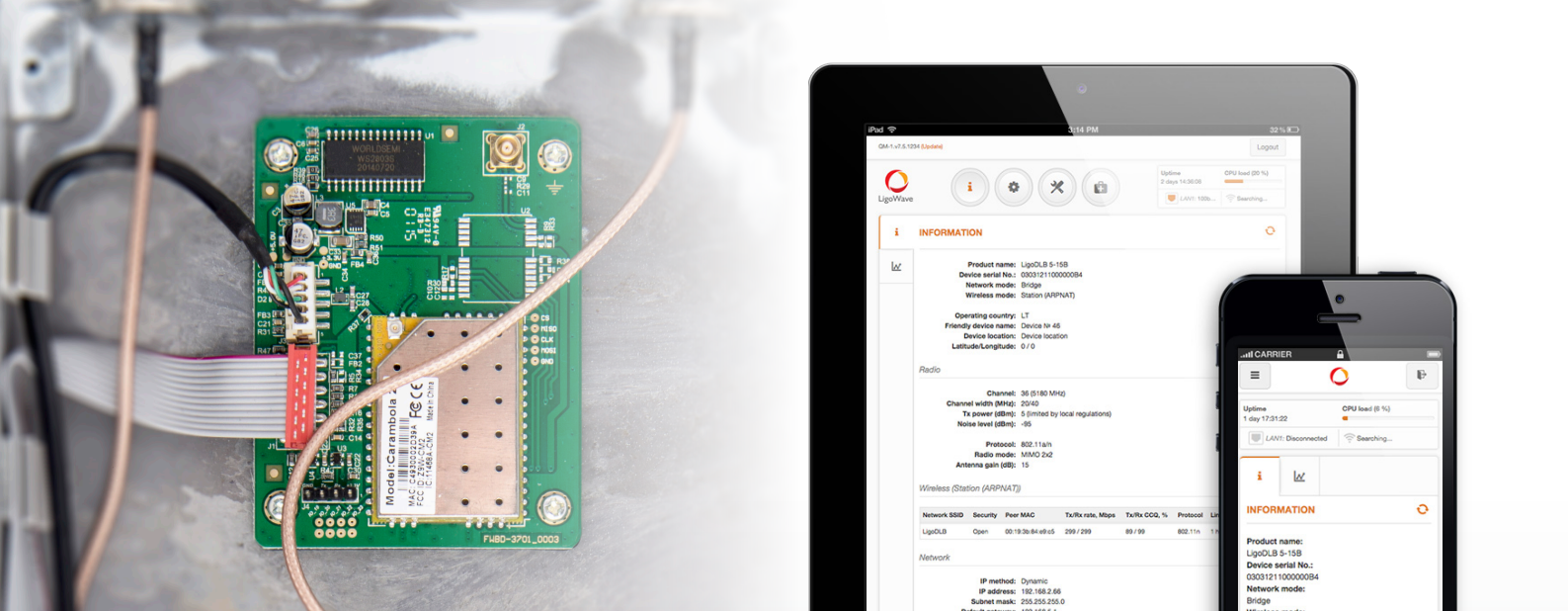


## Powerful all-in-one hardware platform

---

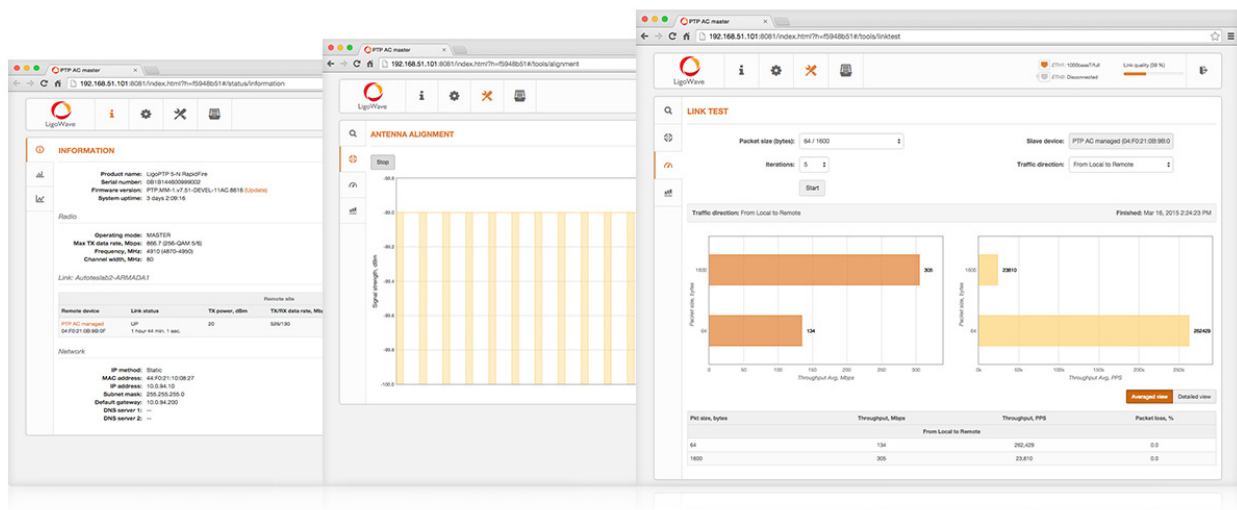
LigoWave RapidFire delivers powerful performance with its new 1.2 GHz CPU dedicated for data processing and high 250K PPS rate. Equipped with two Gigabit Ethernet ports with PoE passthrough, the unit allows for 1+1 (failover) or repeater links and is ideal for high-security video surveillance scenarios. As LigoWave's top-class PTP model, the RapidFire incorporates integrated surge and ESD protection according to IEC standards and passes Class 4 requirements.





## Wireless configuration interface

An additional 2.4 GHz radio allows access into the RapidFire unit via wireless connecting with any type of device. This feature expedites the installation of PTP links and eliminates the pain of troubleshooting in difficult-to-reach locations. Our radio can be accessible even mounted on top of a 10-story building while standing 20 meters away.



## Powerful OS

The LigoPTP operating system ensures easy and rapid deployment of point-to-point links with stable, fast performance.

An intuitive and responsive user interface adjusts layout based on the size of your screen. A link setup wizard is implemented to guide through the important steps of the set-up process. LigoPTP RapidFire simplifies link configuration by supporting single side configuration as parameters are automatically applied on slave units once set on the master side. Other essential tools including link test, antenna alignment, spectrum analyzer, and site survey are implemented to make set-up and troubleshooting more efficient. Automatic mechanisms such as auto-channel and automatic transmit power control optimize the link for maximum performance even in areas with high interference.

## Radio

Wireless protocol	W-Jet V
Radio mode	MIMO 2x2
Frequency range	4.900 – 6.100 GHz
Channel size	5, 10, 20, 40, 80 MHz
Modulation schemes	OFDM (256-QAM, 64-QAM, 16-QAM, QPSK, BPSK)
Data rates @ 80 MHz	866, 780, 650, 585, 520, 390, 260, 195, 130, 65 Mbps
Duplexing scheme	TDD
Error correction	BCC, LDPC

<b>Modulation, Mbps</b>	866	780	650	585	520	390	260	195	130	65
<b>TX Power, dBm</b>	25	26	26	27	27	28	29	30	30	31
<b>Receive sensitivity, dBm</b>	-71	-73	-77	-79	-80	-84	-87	-92	-94	-97

## Antenna

LigoPTP 5-23 RapidFire	Integrated directional dual-pol 23 dBi panel
LigoPTP 5-N RapidFire	2 N-type connectors

## Wired

First Interface	10/100/1000 Base-T with PoE IN (RJ45)
Second Interface	10/100/1000 Base-T with PoE OUT (RJ45)

## Physical

### Dimensions without mount:

LigoPTP 5-23 RapidFire	Length 379 mm (14.9"), width 387 mm (15.2"), height 51 mm (2")
LigoPTP 5-N RapidFire	Length 399 mm (15.7"), width 174 mm (6.8"), height 47 mm (1.8")

Mount length till pole	124 mm (4.8")
------------------------	---------------

### Weight including mount:

LigoPTP 5-23 RapidFire	3.9 kg (8.5 lb)
LigoPTP 5-N RapidFire	2.9 kg (6.3 lb)

## Power

Power input method, voltage	PoE 802.3at, isolated 42 - 57 VDC
Power consumption (max)	8.6 W
Power output method, voltage	PoE 802.3af, 48 VDC
PoE inserter and AC/DC adapter is included in the box	

## Environmental

Operating temperature	-40°C (-40 F) ~ +65°C (+149 F)
Humidity	0 ~ 90 % (non-condensing)

## Software features

- Wizard for fast link setup
- Centralized control from master: A) Common wireless link parameters; B) Individual slave parameters
- Smart Auto-channel
- Robust data security
- QoS with hardware acceleration
- Spectrum analyzer
- Wireless signal and device state indication on RGB LEDs
- Dual firmware image

## Management

Dedicated 2.4 GHz radio for management

System monitoring

SNMP, GUI/HTTP(S), Shell/SSH and WNMS

System configuration

GUI/HTTP(S) and WNMS

## Regulatory

Certification

FCC/IC/CE

## Antenna specifications



## Internal antenna

Frequency range	4.9 - 5.9 GHz
Gain	23 dBi
Polarization	Dual linear
Cross-pol Isolation	27 dBi
VSWR	1.5:1
Azimuth beamwidth (H pol)	6 deg
Azimuth beamwidth (V pol)	7 deg
Elevation beamwidth	9 deg



## LigoPTP 5-N/ 5-23 RapidFire

Copyright © 2015 LigoWave. All rights reserved. LigoWave, the LigoWave logo, are trademarks of LigoWave. All other company and product names may be trademarks of their respective companies. While every effort is made to ensure the information given is accurate, LigoWave does not accept liability for any errors or mistakes which may arise. Specifications and other information in this document may be subject to change without notice. To learn more about LigoWave products, visit [www.ligowave.com](http://www.ligowave.com).



[www.ligowave.com](http://www.ligowave.com)



**LigoPTP 5-N/ 5-23 RapidFire**

Copyright © 2015 LigoWave. All rights reserved. LigoWave, the LigoWave logo, are trademarks of LigoWave. All other company and product names may be trademarks of their respective companies. While every effort is made to ensure the information given is accurate, LigoWave does not accept liability for any errors or mistakes which may arise. Specifications and other information in this document may be subject to change without notice. To learn more about LigoWave products, visit [www.ligowave.com](http://www.ligowave.com).



HOMELAND TOWERS

**EXHIBIT B**  
(Water Course Crossings)



January 27, 2022

Homeland Towers, LLC  
9 Harmony Street, 2<sup>nd</sup> Floor  
Danbury, CT 06810

Re: Docket No 499 Development and Management (D&M) Plan  
Homeland Towers CT009 Sherman II, 16 Coote Hill Road, Sherman, CT  
APT Job No: CT283390

The Connecticut Siting Council's Decision and Order, dated August 26, 2021, conditioned the approval of the referenced project that the D&M Plan include an *examination of the feasibility of installing open bottom box culverts at one or both watercourse crossings*. On behalf of Homeland Towers, LLC, All-Points Technology Corporation, P.C. performed the requested analysis and offers the following assessment.

In both proposed wetland crossing locations, narrow segments of the wetland system were chosen in areas previously disturbed by existing paths to minimize wetland impacts and avoid disturbance to unaltered wetland habitats. At each location, evidence of seasonal intermittent surface flows was observed with conveyance through a diffuse and cryptic bank and channel; well-defined stream channels are not evident in either location and these areas are not consistently wet. Refer to attached photographs. These wetland crossings are also not located within an area of high flow velocity due to the moderate gradients within the wetland reach. Since these two wetland crossing locations only convey intermittent surface flows seasonally, no fish habitat is supported at either location so allowances for fish passage were not required as part of the crossing design analysis. In addition, since the proposed development will result in very minimal traffic (i.e., a few trips per month by technicians) and a relatively narrow 12-foot wide gravel access is proposed, wildlife habitat fragmentation is not a principal design factor as wildlife will be able to cross either through the proposed culverts under the road or across the road surface without an overriding concern for road mortality.

The previously proposed design, using one culvert for the west wetland crossing and two culverts for the east wetland crossing, provide habitat continuity using natural stream crossing design standards (e.g., imbedded culverts, match culvert gradient [slope] with wetland surface profile, install natural wetland surface substrate within culvert, etc.). Converting one or both of these crossing to a box culvert/span would provide the same effective habitat continuity as the proposed culverts but would require a considerably greater effort for construction (i.e., significant excavation to imbed a box culvert or install footings for a span structure, require crane assistance for installation, etc.) which would also significantly increase cost. Particularly for the east crossing, a minimum span of 32 feet would be required, necessitating a large box culvert or span structure. Installation of such a large structure would still result in a relatively significant amount of wetland disturbance, albeit mostly temporary in



nature, but installation of wing walls to support the structure and access side slopes would still require a certain amount of permanent wetland impacts. For these reasons, installing a box culvert or span at either location is not considered a prudent approach for what are relatively small, proposed wetland impacts and somewhat limited reduction of wetland impacts that could be realized with a design change.

However, to allow for enhanced aquatic organism movement and to avoid any hydraulic impacts (either to upstream or downstream wetland areas), an additional culvert has been added at each location. Both wetland crossings satisfy Stream Crossing Best Management Practices design and construction guidance as required in Appendix G of the Department of the Army Regional General Permits for the State of Connecticut, effective date December 15, 2021, expiration date December 15, 2026. Therefore, the proposed design results in minimal wetland impacts, allows for unimpeded wildlife movement per regulatory guidance, and avoids hydraulic impacts to the surrounding wetland habitat.

Sincerely,  
All-Points Technology Corporation, P.C.



Dean Gustafson  
Senior Wetland Scientist

Enclosure

# Photodocumentation

---





Photo 1: View of proposed west wetland crossing looking east. Seasonal intermittent surface flows convey through diffuse and cryptic bank and channel; not a well-defined stream channel.



Photo 2: View of proposed east wetland crossing looking north. Seasonal intermittent surface flows convey through diffuse and cryptic bank and channel; not a well-defined stream channel..



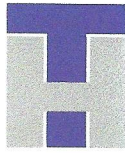


HOMELAND TOWERS

## **EXHIBIT C**

(Traffic Management Plan)

Homeland entered into an agreement with the owner of Coote Hill Road, Pepper Jones, allowing Homeland and its Tenants to pass and repass over Coote Hill from the cul-de-sac to Route 37. For traffic management, during the site excavation, stabilization and delivery of the monopole, Homeland will have traffic signs and orange cones posted for traffic management along Route 37 South and at the entrance of Coote Hill Rd. In addition, Homeland will have a flagger, as needed for traffic management at the entrance of Coote Hill for construction vehicles entering and exiting on to Route 37 to ensure safe traffic flow. Construction vehicles will be limited to week days when there is limited residential traffic using Coote Hill Road (there are only (7) seven residential homes on Coote Hill).



HOMELAND TOWERS

## **EXHIBIT D**

(SHPO concurrence letter)



April 12, 2021

Mr. David R. George  
Heritage Consultants  
PO Box 310249  
Newington, CT 06131

Subject: Phase IB Cultural Resources Reconnaissance Survey  
Proposed Wireless Telecommunications Facility  
16 Coote Hill Road  
Sherman, CT  
Homeland Towers, LLC  
ENV-21-0250

Dear Mr. George:

The State Historic Preservation Office (SHPO) has reviewed the Cultural Resources Reconnaissance Survey prepared by Heritage Consultants, LLC (Heritage), dated March 2021, as part of the larger submittal for a proposed telecommunications facility. The proposed activities are subject to review by this office pursuant to the National Historic Preservation Act and in accordance with Federal Communications Commission regulations. SHPO understands that the proposed undertaking includes the installation of a 170 foot tall monopole within a 50 foot by 53 foot chain-link equipment compound, located in the southeast portion of the Subject Property. Future telecommunications arrays are proposed to be installed on the monopole at intervals of 136 feet above ground level (AGL), 146 feet AGL, 156 feet AGL, and 166 feet AGL, respectively. Access is to be through a new approximately 1,765 foot long gravel access road, originating from an existing paved driveway.

One previously identified archaeological site is located within 1 mile of the project area; however, it will not be impacted by the proposed undertaking. No properties listed or formally determined to be eligible for listing on the National Register of Historic Places or State Register of Historic Places are located within 1 mile of the project area.

Phase IB of the reconnaissance survey consisted of subsurface testing of areas deemed to have moderate to high archaeological sensitivity, and that would be subject to ground disturbing impacts as part of the proposed undertaking. A total of 32 of 32 planned shovel tests were excavated successfully throughout the proposed work area. No prehistoric or historic period cultural artifacts or features were identified during the survey. Additionally, shovel tests also

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [ct.gov/historic-preservation](http://ct.gov/historic-preservation)

*An Affirmative Action/Equal Opportunity Employer An Equal Opportunity Lender*



Department of Economic and  
Community Development

State Historic Preservation Office

revealed that portions of both the proposed access road and lease area contained a combination of poorly drained soils, and gravelly/stony soils, conditions typically inhospitable to retaining intact archaeological deposits.

As a result of the information submitted, SHPO concurs with the findings of the report that additional archeological investigations of the project area are not warranted and that no historic properties will be affected by the proposed activities. However, please be advised that if construction plans change to include previously uninvestigated/undisturbed areas, this office should be contacted for additional consultation.

The State Historic Preservation Office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act. For further information please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or [marena.wisniewski@ct.gov](mailto:marena.wisniewski@ct.gov).

Sincerely,

A handwritten signature in black ink that reads "Jonathan Kinney". The signature is written in a cursive, flowing style.

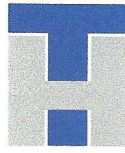
Jonathan Kinney  
Deputy State Historic Preservation Officer

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [ct.gov/historic-preservation](http://ct.gov/historic-preservation)

*An Affirmative Action/Equal Opportunity Employer An Equal Opportunity Lender*





HOMELAND TOWERS

## **EXHIBIT E**

(Geotech and Tower/Foundation Structural)

# **Geotechnical Engineering Report For:**

**Proposed Telecommunications Tower  
Homeland Towers  
CT-009 Sherman II  
Cootes Hill Road  
Sherman, CT**

**Prepared by:**



**525 John Street  
Bridgeport, CT 06604**

**July 22, 2021**

**ENGINEERING REPORT**  
**TABLE OF CONTENTS**

1.00 GENERAL SUMMARY

2.00 INTRODUCTION

    2.10 OBJECTIVE OF STUDY

    2.20 GEOTECHNICAL SCOPE OF SERVICES

    2.30 SITE AND PROJECT DESCRIPTION

3.00 SUBSURFACE EXPLORATIONS

4.00 SUBSURFACE CONDITIONS

5.00 IMPLICATIONS OF SUBSURFACE CONDITIONS

    5.10 GLACIAL TILL DEPOSITS

    5.20 ROCK

    5.30 GROUNDWATER

6.00 DESIGN OBSERVATIONS

    6.10 PIERS, PAD or SPREAD FOOTINGS

    6.20 SLAB ON GRADE

    6.30 PAVED AREAS

    6.40 SEISMIC CHARACTERISTICS/ LIQUEFACTION POTENTIAL

    6.50 SOIL LATERAL LOADS

7.00 CONSTRUCTION AND EARTHWORK CONSIDERATIONS

    7.10 FLOOR SLABS

    7.20 PAVEMENTS

    7.30 MATERIALS, PLACEMENT AND COMPACTION

    7.40 CONSTRUCTION MONITORING SERVICES

8.00 FINAL COMMENTS

FIGURE 1 : BORING LOCATION PLAN

APPENDIX A : BORING LOGS 1

APPENDIX B : SEISMIC SUMMARY

## **1.00 GENERAL SUMMARY**

Based on the studies performed as discussed herein, we have prepared the following conclusions and recommendations.

- 1.) Variable density naturally deposited inorganic GLACIAL TILL deposits overlying ROCK are present in the portions of the proposed construction area that were investigated. Liquefaction potential is negligible based on density and gradation of soils, depth of water table and rock depth.
- 2.) The existing naturally deposited inorganic silt, sand and gravel materials can be used to support the bottom of footings and also may meet gradation requirements for re-use as structural fill.
- 3.) If required, raises in grade materials beneath the footings, slabs and pavement should consist of structural fill.
- 3.) Replacement fills for footing, slab and pavement support as required should consist of "structural fill" as defined in paragraph 7.30 and be placed and compacted to 95 percent of the optimum dry density per ASTM D-1557.
- 4.) **Groundwater is NOT expected to impact portions the excavation** or cut areas of the proposed project, however the water table is approximately 24 inches below the bottom of work elevation, so precautions must be taken.
- 5.) Footings shall be excavated to naturally deposited inorganic materials as defined herein and the grade can be raised using structural fill since the acceptable bearing material is below the frost line. Bearing surfaces within the proposed footing areas are to be at least 3.5 feet below the existing grade.
- 6.) Provided bearing surfaces are prepared as described herein, an allowable soil bearing capacity of 6,000 pounds per square foot may be used for design purposes in sizing the footings and foundations. If structural fill is used to raise the bearing grade, 6,000 pounds per square foot can be used in the design.
- 7.) If the tower footings are constructed on rock, the bearing capacity can be up to 20 tons per square foot, based on the RQD hardness. Preparation of the bearing surfaces should be approved by the geotechnical engineer.
- 8.) All work to prepare in-place materials and to construct foundation systems should be performed under the observation of the geotechnical engineer. Specific important details of our geotechnical engineering study and recommendations are enclosed herein.

## **2.00 INTRODUCTION**

This report presents the results of an engineering study performed by Atlantic Consulting & Engineering (ACE), at the site of the proposed tower on Coote Hill Road Sherman, CT. Included in this report are a summary of subsurface conditions observed and the implications of these conditions with respect to the design and construction of the proposed structure. Please note that this report is subject to the limitations contained in Section 8.00.

## **2.10 OBJECTIVE OF STUDY**

The objective of our scope of services was to explore subsurface conditions within the proposed compound area and develop geotechnical recommendations for the design of the foundation support for the proposed structure. Included are design criteria for proposed slab on grade and pavement sections.

## **2.20 GEOTECHNICAL SCOPE OF SERVICES**

The scope of services performed by ACE to meet the above stated objectives for geotechnical services included the following:

- Inspection of the test boring and probes conducted by Soiltesting, Inc., on July 19, 2021.
- Evaluation of the soil samples and the rock core that were taken on site.
- Recommendations were prepared for foundation support for the proposed structure.
- Recommendations for slab and pavement section design have been prepared.
- General recommendations have been made as to earthwork and foundation construction procedures to be followed during the construction phase of this project.

## **2.30 SITE AND PROJECT DESCRIPTION**

Homeland is constructing a 170-foot-tall monopole tower to the south quadrant of the property. The subject site is located on the eastern side of Coote Hill Road. The road/driveway enters from the end of the road to the west. Borings and probes were drilled to the southwest corner of the site where the new tower is proposed (see plan)

## **3.00 SUBSURFACE EXPLORATIONS**

Subsurface explorations performed for this project consisted of hollow stem augured borings. Borings were terminated in rock deposits.

Test borings were located by the Owner and drilled by Soiltesting, Inc. Approximate locations of borings are shown on the Boring Location Plan. One (1) test boring and four (4) probes were advanced throughout the site. Copies of the test boring logs are included in Appendix A, along with a boring location plan. Test boring locations should be considered accurate only to the degree implied by measuring method used to determine them. The test borings were conducted using a truck mounted drill rig. Soil samples from the test borings and rock were classified both on site and in the lab.

## **4.00 SUBSURFACE CONDITIONS**

All explorations revealed GLACIAL TILL and ROCK beneath the surface. Loose to Medium dense sand and gravel with mixed silt along with deeper rock was predominant throughout the exploratory effort. The material is compact and stable to work on and is desirable as bearing material and should be prepared as outlined below. Since the material is a GLACIAL TILL DEPOSIT, if prepared properly, the soil can be assigned 3 tons per square foot bearing capacity. Groundwater will probably not affect the excavation work and stability of in situ soils if the excavation proceeds with caution.

## **5.00 IMPLICATIONS OF SUBSURFACE CONDITIONS**

### **5.10 GLACIAL TILL DEPOSITS (3a)**

Throughout the site beginning immediately beneath the surface, a naturally deposited GLACIAL TILL was encountered. The material is a medium compact brown sand and gravel mix. This material ranges in depth from the surface to a depth of 3.5 to 7.5 feet at the offset probes with rock at the center point of the tower to up to 8 feet below grade. The characteristics of this material make it suitable for footing support, and this can be the design bearing material for the project. Some of this material **may** meet the structural fill requirements outlined in section 7.30 and therefore could be reused as structural fill for raises in grade beneath footings and slabs, furthermore it appears to be suitable to raise the grade in paved areas and below slabs provided the final 8 inches area prepared in accordance with Paragraph 7.30 below.

### **5.20 ROCK**

Rock and/or boulders were encountered below the glacial till the refusal was encountered as shallow as 8 feet at the center location and between 3.5 and 7.5 feet deep at the probes. The RQD was low based on the 5-foot core that was taken. The proposed foundation can also be set on the rock and a bearing capacity of 20 tons per square foot can be used for design.

### **5.30 GROUNDWATER**

Groundwater was NOT encountered. Therefore, it should not affect the excavation and construction activities.

### **6.00 DESIGN OBSERVATIONS**

It is our recommendation that excavation extend to a depth and be pinned into the rock. Footings shall be pinned into the rock using epoxy anchors; if the pad is designed to bear on both rock and soil, then precautions should be taken for the rock-to-soil interface. Rock surfaces may be leveled using a lean 2,000 psi concrete mix.

If unsuitable materials are encountered at any elevation, then they must be removed followed by replacement with suitable compacted structural fill beneath the bottom of strip and pier footings (if necessary) or construction of the footings directly on the GLACIAL TILL Stratum. This will not be the case for the tower, but if any ancillary structures are built, then this methodology should be followed.

If the in-place material is determined by the Geotechnical Engineer to be acceptable after visual observations, then areas beneath the slabs can be prepared as described in Section 7.10. Where bearing surfaces require a raise in grade, structural fill can be placed above the existing alluvial deposits as described in Section 7.30.

### **6.10 SPREAD FOOTINGS, PAD or PIERS**

Construction of the tower will most likely require establishing a deep rock foundation with anchors to prevent over turning. Blasting or hydraulic hoe ramming may be required to attain the depths needed for proper support. The rock appears to be too dense to excavate using a backhoe.

For any other buildings that may be planned, Excavation to naturally deposited inorganic materials is an effective approach for this project due to the relatively shallow depth of the unsuitable materials in the major portion of the construction area. Spread footings, PIERS or PAD can bear directly on TILL deposits, ROCK or structural fill can be used to raise the grade to a minimum of 42 inches below finish grade if raising the grade is required. There could possibly be an excavation below grade to remove the unsuitable soils. When structural fill is used to raise the grade to the bottom of footing, the compacted area shall extend 12 inches beyond the edge of the footing for every 12 inches of structural fill placed, for example if 2 feet of fill were used to raise the grade for a 4x4 footing, the actual area of structural fill should be 8x8 (2 feet along each side).

#### **6.20 SLAB ON GRADE**

For any ancillary buildings, it is recommended that a 4-to-6-inch slab on grade be used to support minor floor loads if required. The slab should over-lie 8 inches of free draining sand and gravel. Which can also be accomplished by the following: excavate 8 inches below bottom of slab having the Geotechnical Engineer observe proof rolling prior to placement of and compaction testing of the structural fill or free draining sand.

#### **6.30 PAVED AREAS**

The subgrade soil for pavement will consist of varying depths of the existing glacial till and rock. Our proposed pavement cross section consists of the following:

##### **Roadways and Auto Parking Areas**

4 - inch	Two 2" Bituminous Concrete Courses (Class 1 and 2)
4 - inch	Processed Aggregate Base
8 - inch	Structural fill placed on compacted subgrade proof rolled prior to lift placement with a 12-ton vibratory roller with vibrator if proof rolling the bearing stratum.

The above cross section is considered acceptable provided the existing materials are proofrolled and approved by the engineer. All subsequent replacement fills required beneath the sub-base should consist of compacted structural fill. Areas where weaving is observed should be locally excavated and the grade raised using structural fill. Given the fact that some paved areas may be within the loose fill, the depth of excavation depth may need to be increased to attain stable supporting soils. Proof-rolling in the presence of the engineer will enable determination of the stability of that soil.

#### **6.40 SEISMIC CHARACTERISTICS & LIQUEFACTION POTENTIAL**

For structural design, the IBC Seismic Site Soil Classification is considered to be "B". The mapped spectral response acceleration for 1 second period is  $S_1=0.055$  and for short periods  $S_s=0.210$ . For transfer of ground shear into the naturally deposited inorganic sands, a factor of 0.35 can be assumed. See Seismic Summary in Appendix B

Based on the results of the borings and the Standard Penetration Testing and soil sampling, the subsurface conditions at the site should be considered as having NEGLIGIBLE potential for liquefaction due to the density and gradation of the silt and sand coupled with the shallow depth of the rock.



## 6.50 SOIL LATERAL LOADS

Any walls will need to be designed for **passive, active and at-rest pressures**. To obtain K values, the  $\phi$  of the soil is needed. For the solid rock  $\phi=45^\circ$  can be used; for structural fill,  $\phi=37^\circ$  can be used; for existing naturally deposited inorganic alluvial deposits,  $\phi=33^\circ$  can be used. Submerged or saturated soil pressure used in design shall include the weight of buoyant soil plus hydrostatic loading which reduces capacity of the soils.

## 7.00 CONSTRUCTION AND EARTHWORK CONSIDERATIONS

Development of the proposed site may require substantial rock removal. Grading problems may also occur if the work is carried out in wet weather due to the silt content of some of the onsite materials. The recommendations presented in this report are predicated upon site preparations, foundation wall construction, floor slabs and pavement construction monitored under controlled conditions and the direction of the geotechnical consultant.

It is recommended that placement of the concrete for piers and footings take place shortly following the preparation of the design bearing surface, since the introduction of water may adversely affect its structural characteristics. **Dewatering should take place throughout the operation if excavation near the water table takes place.**

### 7.10 FLOOR SLABS

Prior to placement of new structural fill, or free-draining sand, gravel base course materials, all deleterious materials, including topsoil and fill should be removed from within the limits of the building to the minimum depth below finish floor as determined by the structural engineer. The exposed subgrade materials should then be proof rolled with a minimum of 4 passes of a 10-ton roller in the presence of the undersigned. Any observed soft or weaving areas should be locally excavated and replaced with compacted structural fill. The final 8 inches of free draining sand and gravel shall be placed as defined in section 7.30. A 4-to-6-inch slab on grade is recommended for the use described herein, depending on the proposed loading.

### 7.20 PAVEMENTS

Prior to placement of new pavement section materials, the in-place materials should be removed to a **minimum depth of 8 inches** below the bottom of finish pavement grades unless the alluvial stratum is encountered at which point it may remain in place. Existing bearing surfaces should be proof rolled and subgrade should then be prepared as outlined under Section 7.10 and 7.30. Raises in grade below pavement section materials should be performed using structural fill, acceptable on-site material and processed base as described in section 6.30.

### 7.30 MATERIALS, PLACEMENT AND COMPACTION

Structural fill to be used in backfilling within the building areas below footings and pavements, below the recommended 8-inch sand-gravel floor slab base course, and beneath the recommended pavement section, should be free from ice, snow, roots, stumps, and other deleterious materials. Structural fill should consist of a sandy GRAVEL or gravelly SAND material having a liquid limit and plasticity limit not exceeding 40 and 15, respectively, and conform to the following gradation requirements:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
3.5 inch	100
No. 4	30 - 65
No. 10	20 - 50
No. 40	5 - 30
No. 100	0 - 10

**Free draining sand and gravel** for the pavement base course, whether existing or to be placed, should be free of ice, snow, roots, stumps, rubbish, and other deleterious materials and should consist of hard durable sand and gravel conforming to the following gradation requirements:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
2 inch	100
1/2 inch	50 - 85
No. 4	40 - 75
No. 50	8 - 28
No. 100	0 - 10

All building areas, structural fill base course free draining sand-gravel fill, pavement base course and pavement sub-base material, should be placed in lifts not exceeding 8 inches in loose lift thickness and should be compacted to at least 95 percent of maximum dry density per ASTM D-1557. New structural fill required exterior to structural element (footings, foundation or retaining walls and pavements) zone of bearing should be compacted to at least 93 percent of the maximum dry density per ASTM D-1557.

If it is necessary to re-use existing acceptable on-site materials, compaction can be carried out by placing the material in lifts not exceeding 6 inches and should be compacted to a minimum of 95 percent of maximum dry density per ASTM D-1557. This cannot be conducted in wet weather, nor if the moisture content of the material is at a level where the desired compaction cannot be physically achieved. Modified Proctor testing, ASTM D-1557, will have to be conducted on samples of any fill desired to be reused. All reused material shall be free of roots, stumps, ice, snow, organic and any other deleterious materials.

#### **7.40 CONSTRUCTION MONITORING SERVICES**

It is recommended that Atlantic Consulting & Engineering and Fairfield Testing Laboratory be retained to provide geotechnical engineering and construction monitoring services during the excavation, foundation, and construction phases of the project. The purpose of these services is to observe compliance with the design concepts, contract documents, and geotechnical recommendations and to allow orderly design changes during construction in the event that subsurface conditions differ from those anticipated prior to the start of construction.

During construction, the Atlantic Consulting & Engineering and Fairfield Testing field representatives would be present to provide controlled and special inspections as required by the IRC 2015 and 2018 CSBC Chapter 17, along with the following:

1. Observe the general progress of site work.
2. Perform the required field control tests for earthwork, including proof-rolling sub-grades and placement of structural fill.

**Geotechnical Engineering Report for Homeland Towers CT009, Sherman, CT**  
**July 22, 2021**

---

3. Observe earthwork operations to ensure that the minimum compactive effort and maximum lift height restrictions are enforced. Certify rock anchoring and provide pull out testing, if required.
4. Observe, evaluate, and judge the suitability of prepared bearing surfaces as well as any possibility of using existing fill materials below slabs.
5. Observe and evaluate unanticipated subsurface conditions, when and where encountered and alternate procedures, which are proposed to address those unanticipated subsurface conditions.

**8.00 FINAL COMMENTS**

This report has been prepared for specific application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made. In the event that any changes in the nature, design or location of structures are planned, the conclusions and recommendations contained in the report should not be considered valid, unless the changes are reviewed and conclusions of this report modified or verified in writing.

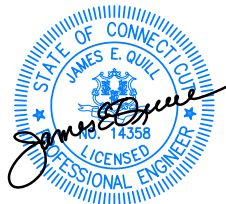
The analyses and recommendations submitted in this report are based in part upon the data obtained from the referenced test borings. The nature and extent of variations between explorations may not become evident until construction. In order to take full responsibility for information generated in this report, this geotechnical engineer shall be present to certify all bearing surfaces, acceptable bearing elevations and test the compaction of structural fill. If variations then appear evident, it will be necessary to re-evaluate the recommendation of this report. ACE and FTL shall conduct all geotechnical certifications and testing based on the contents of this report, otherwise ACE is released of any liability. Unless inspections and oversight of the construction work associated with the geotechnical portion of the project are done by ACE, then all liability is waived, ACE takes no responsibility for any work conducted absent of its inspection.

Atlantic Consulting & Engineering should perform a general review of final design and specifications in order to determine that earthwork and foundation recommendations have been properly interpreted and implemented in the design specifications.

Submitted by

*James E. Quill, PE*

James E. Quill,  
CT PE# 14358

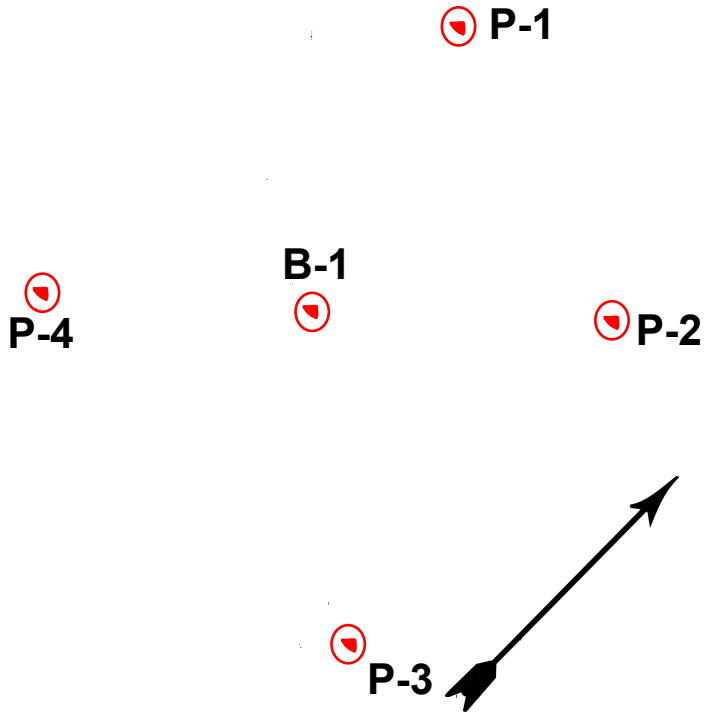


## **Figure 1**

Boring Location Plan



525 John Street  
Bridgeport, Connecticut  
06604-3926  
(203) 336-4422  
(203) 336-1769 FAX  
E-MAIL: jquill@atlantic-eng.com



**PROPOSED CELL  
TOWER  
16 COOTE HILL ROAD  
SHERMAN, CT**

# **APPENDIX A**

**Boring Logs B-1**  
**Probes P-1 through P-4**  
Conducted on July 19, 2021

<b>SOILTESTING, INC.</b> 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: <u>Atlantic Consulting</u>	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. <u>G152-1858-21</u>	HOLE NO. <u>B-1</u>
	PROJECT NAME <u>Proposed Cell Tower</u>	BORING LOCATIONS Per Sketch
FOREMAN - DRILLER <b>PD/ak</b>	LOCATION <u>16 Coote Hill Road Sherman CT</u>	
INSPECTOR <b>James Quill</b>	TYPE <u>HSA</u> CASING <u>SS*</u> SAMPLER <u>NQ2</u> CORE BAR	OFFSET
GROUND WATER OBSERVATIONS AT <u>None</u> FT AFTER <u>0</u> HOURS	SIZE I.D. <u>4 1/4"</u>	DATE START <u>7/19/21</u>
AT <u>  </u> FT AFTER <u>  </u> HOURS	HAMMER WT. <u>140#</u>	DATE FINISH <u>7/19/21</u>
	HAMMER FALL <u>30"</u>	SURFACE ELEV.
		GROUND WATER ELEV.

I.D. D	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE)			CORE TIME PER FT (MIN)	DENSITY OR CONSIST	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	Type	PEN	REC.	DEPTH @ BOT	0 - 6	6 - 12	12 - 18				
		1	ss	24"	12"	2'0"	2	3			stiff moist	2'	6" Top soil Lt brn silt, F-M sand, trace roots, trace C sand, cobbles
							3	4					
5		2	ss	3"	1"	5'3"	100/3"				v dense dry	5'	Brn F-M sand, some F-C gravel, lit cobbles
												7'	Cobbles, boulders or fractured Bedrock
												8'	Fractured Bedrock, Auger Refusal
10		1	c	60"	44"	13'0"	RQD=31%		3				Bedrock (schist/gniess)
									4				
									3				
									4				
									3			13'	
15													EOB 13'
20													
25													
30													
35													
40													

**NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.**

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT.	<b>HOLE NO. B-1</b>
A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST	
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS	C = COARSE
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER	M = MEDIUM
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50%	F = FINE

<b>SOILTESTING, INC.</b> 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: <u>Atlantic Consulting</u>	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. <u>G152-1858-21</u>	HOLE NO. _____ P-1
	PROJECT NAME <u>Proposed Cell Tower</u>	BORING LOCATIONS Per Sketch
FOREMAN - DRILLER <u>PD/ak</u>	LOCATION <u>16 Coote Hill Road Sherman CT</u>	
INSPECTOR _____	CASING TYPE <u>HSA</u> SAMPLER <u>SS*</u> CORE BAR _____	OFFSET _____
GROUND WATER OBSERVATIONS AT None_FT AFTER _____ HOURS AT _____ FT AFTER _____ HOURS	SIZE I.D. <u>4 1/4"</u> HAMMER WT. _____ HAMMER FALL _____	DATE START <u>7/14/21</u> DATE FINISH <u>7/14/21</u> SURFACE ELEV. _____ GROUND WATER ELEV. _____

DEPTH	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 6 - 12 12- 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	Type	PEN	REC.	DEPTH @ BOT					
5											
10											
15											
20											
25											
30											
35											
40											

**NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.**

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT.	HOLE NO. <u>P-1</u>
A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST	
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS	C = COARSE
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER	M = MEDIUM
PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50%	F = FINE



<b>SOILTESTING, INC.</b> 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: <u>Atlantic Consulting</u>	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. <u>G152-1858-21</u>	HOLE NO. <u>P-2</u>
	PROJECT NAME <u>Proposed Cell Tower</u>	BORING LOCATIONS Per Sketch
FOREMAN - DRILLER <u>PD/sd</u>	LOCATION <u>16 Coote Hill Road Sherman CT</u>	
INSPECTOR	CASING TYPE <u>HSA</u>	OFFSET
GROUND WATER OBSERVATIONS AT <u>None</u> FT AFTER <u>0</u> HOURS AT <u>  </u> FT AFTER <u>  </u> HOURS	SAMPLER <u>SS*</u>	DATE START <u>7/14/21</u>
	SIZE I.D. <u>4 1/4"</u>	DATE FINISH <u>7/14/21</u>
	HAMMER WT. <u>140#</u>	SURFACE ELEV.
	HAMMER FALL <u>30"</u>	GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 - 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	Type	PEN	REC.	DEPTH @ BOT					
5								dry	2'	Dk brn/brn silt, cobbles	
										Brn gry F-M sand, some silt, F gravel, lit cobbles, boulders	
								dry	6'		
									7'6"	Fractured bedrock Auger Refusal	
10										EOB 7'6"	
15											
20											
25											
30											
35											
40											

**NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.**

GROUND SURFACE TO \_\_\_\_\_ FT. USED \_\_\_\_\_ CASING THEN \_\_\_\_\_ CASING TO \_\_\_\_\_ FT. **HOLE NO. P-2**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST  
 WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE  
 SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM  
 PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50% F = FINE

<b>SOILTESTING, INC.</b> 90 DONOVAN RD. OXFORD, CT 06478 CT (203) 262-9328 NY (914) 946-4850	CLIENT: <u>Atlantic Consulting</u>	SHEET <u>1</u> OF <u>1</u>
	PROJECT NO. <u>G152-1858-21</u>	HOLE NO. <u>P-3</u>
	PROJECT NAME <u>Proposed Cell Tower</u>	BORING LOCATIONS Per Sketch
FOREMAN - DRILLER <b>PD/ak</b>	LOCATION <u>16 Coote Hill Road Sherman CT</u>	
INSPECTOR	CASING TYPE <u>HSA</u>	OFFSET
GROUND WATER OBSERVATIONS AT <u>None</u> FT AFTER <u>0</u> HOURS	SAMPLER <u>SS*</u>	DATE START <u>7/14/21</u>
AT <u>  </u> FT AFTER <u>  </u> HOURS	CORE BAR	DATE FINISH <u>7/14/21</u>
	SIZE I.D. <u>4 1/4"</u>	SURFACE ELEV.
	HAMMER WT. <u>140#</u>	GROUND WATER ELEV.
	HAMMER FALL <u>30"</u>	

DEPTH	CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 6 - 12 12 - 18	CORE TIME PER FT (MIN)	DENSITY OR CONSIST	STRATA CHANGE DEPTH	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
		NO	Type	PEN	REC.	DEPTH @ BOT					
5								moist	1'	Top soil, cobbles, boulders	
									2'6"	Brn orange silt, some F-M sand, F-C gravel, lit cobbles	
								moist	4'	Brn F-M sand, some F-C gravel, some cobbles, lit boulders Gry F-M sand, F-C gravel	
									5'0"	Fractured bedrock or boulders Auger Refusal	
10										EOB 5'	
15											
20											
25											
30											
35											
40											

**NOTE: Subsoil conditions revealed by this investigation represent conditions at specific locations and may not represent conditions at other locations or times.**

GROUND SURFACE TO _____ FT. USED _____ CASING THEN _____ CASING TO _____ FT.	<b>HOLE NO. P-3</b>
A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM PROPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND = 35 - 50% F = FINE	



## **APPENDIX B**

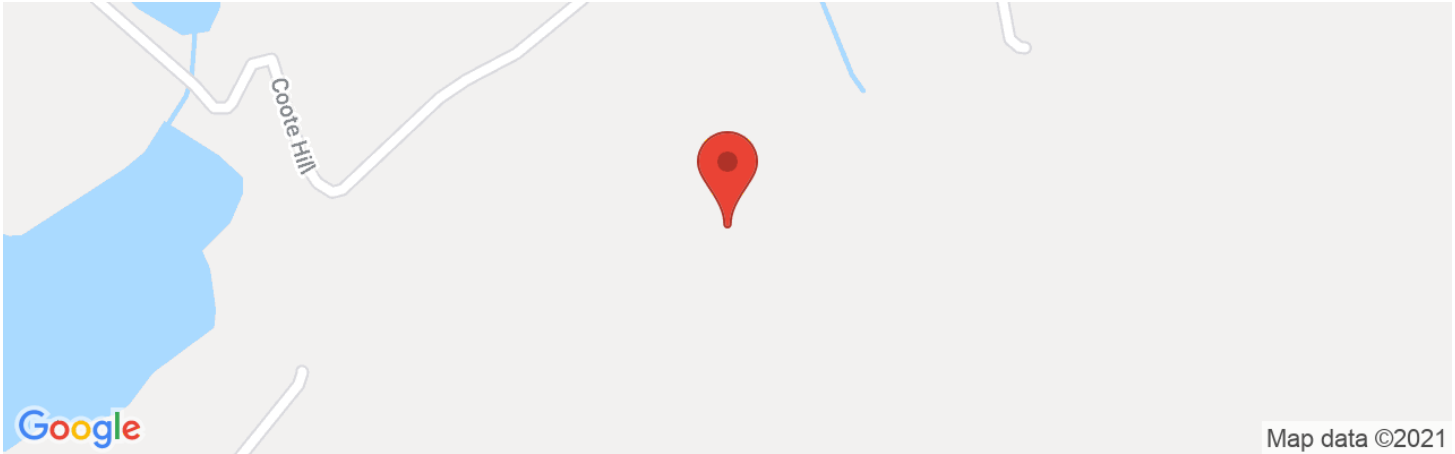
### Seismic Summary





# 16 Coote Hill, Sherman, CT 06784, USA

Latitude, Longitude: 41.5357402, -73.4946471



<b>Date</b>	7/27/2021, 4:24:27 PM
<b>Design Code Reference Document</b>	ASCE7-16
<b>Risk Category</b>	II
<b>Site Class</b>	B - Rock

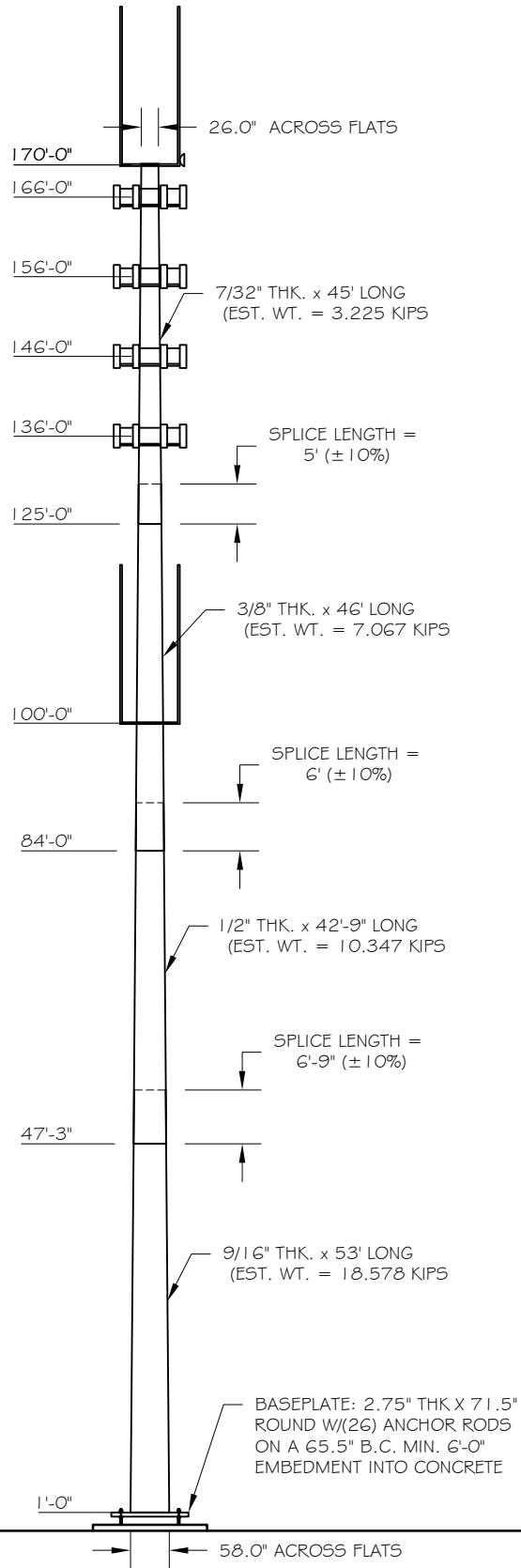
Type	Value	Description
$S_S$	0.209	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.055	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	0.188	Site-modified spectral acceleration value
$S_{M1}$	0.044	Site-modified spectral acceleration value
$S_{DS}$	0.126	Numeric seismic design value at 0.2 second SA
$S_{D1}$	0.03	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	A	Seismic design category
$F_a$	0.9	Site amplification factor at 0.2 second
$F_v$	0.8	Site amplification factor at 1.0 second
PGA	0.118	$MCE_G$ peak ground acceleration
$F_{PGA}$	0.9	Site amplification factor at PGA
$PGA_M$	0.106	Site modified peak ground acceleration
$T_L$	6	Long-period transition period in seconds
$SsRT$	0.209	Probabilistic risk-targeted ground motion. (0.2 second)
$SsUH$	0.222	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$SsD$	1.5	Factored deterministic acceleration value. (0.2 second)
$S1RT$	0.055	Probabilistic risk-targeted ground motion. (1.0 second)
$S1UH$	0.06	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S1D$	0.6	Factored deterministic acceleration value. (1.0 second)
$PGAd$	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
$C_{RS}$	0.942	Mapped value of the risk coefficient at short periods
$C_{R1}$	0.927	Mapped value of the risk coefficient at a period of 1 s

## DISCLAIMER

While the information presented on this website is believed to be correct, SEAOC / OSHPD and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in this web application should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. SEAOC / OSHPD do not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the seismic data provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the search results of this website.

Page 1 of 2	Job Number: 23521-363
Eng: MFP	Customer Ref: TP-20446
	Date: 1/5/2022
Structure: 170-FT MONOPOLE	
Site: CTO090 SHERMAN-2	
Location: FAIRFIELD CO., CT / 41°32'2.5", -73°29'34.45"	
Owner: HOMELAND TOWERS	
Revision No.:      Revision Date:	



DESIGN			
Building Code: 2018 IBC			
Design Standard: TIA-222-H			
Wind Speed Load Cases: ASCE-7-16 WIND SPEED			
Load Case #1: 114 MPH Design Wind Speed			
Load Case #2: 40 MPH Wind with 1" Ice Accumulation			
Load Case #3: 60 MPH Service Wind Speed			
Structure Class Risk Category	Exposure Cat.	Topography Cat.	Crest Height
II	C	I	

EQUIPMENT LIST	
Elev.	Description
183	(2) 20-FT DIPOLE
173	(1) 2-FT DISH
170	3-FT SIDE ARM MOUNTS
166	(12) ANTENNAS + MOUNT (EPA 200 FT2)
166	GENERIC ANTENNA MOUNT
156	(12) ANTENNAS + MOUNT (EPA 200 FT2)
156	GENERIC ANTENNA MOUNT
146	(12) ANTENNAS + MOUNT (EPA 200 FT2)
146	GENERIC ANTENNA MOUNT
136	(12) ANTENNAS + MOUNT (EPA 200 FT2)
136	GENERIC ANTENNA MOUNT
110	(2) 20-FT DIPOLE
100	6-FT STAND OFF MOUNTS

ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE  
POLE DESIGNED FOR A MAX 80-FT FALL RADIUS

STRUCTURE PROPERTIES					
Cross-Section: 18-Sided			Taper: 0.20229 in/ft		
Shaft Steel: ASTM A572 GR 65			Baseplate Steel: ASTM A572 GR 50		
Anchor Rods: 2.25 in. AG 15 GR. 75 X 7'-0"					
Sept.	Length (ft)	Thickness (in)	Splice (ft)	Top Dia. (in)	Bot Dia. (in)
1	45.00	0.2188	5.00	26.00	35.10
2	46.00	0.3750	6.00	33.65	42.96
3	42.75	0.5000	6.75	41.00	49.64
4	53.00	0.5625	0.00	47.28	58.00



BASE REACTIONS FOR FOUNDATION DESIGN

Moment: 8750 ft-kip  
Shear: 63 kip  
Axial: 78 kip

Page 2 of 2	Job Number: 23521-363
Eng: MFP	Customer Ref: TP-20446
	Date: 1/5/2022
Structure: 170-FT MONOPOLE	
Site: CTO090 SHERMAN-2	
Location: FAIRFIELD CO., CT / 41°32'2.5", -73°29'34.45"	
Owner: HOMELAND TOWERS	
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 315, "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: ATLANTIC CONSULTING & ENGINEERING  
REPORT NO.: N/A (DATED 7/22/21)

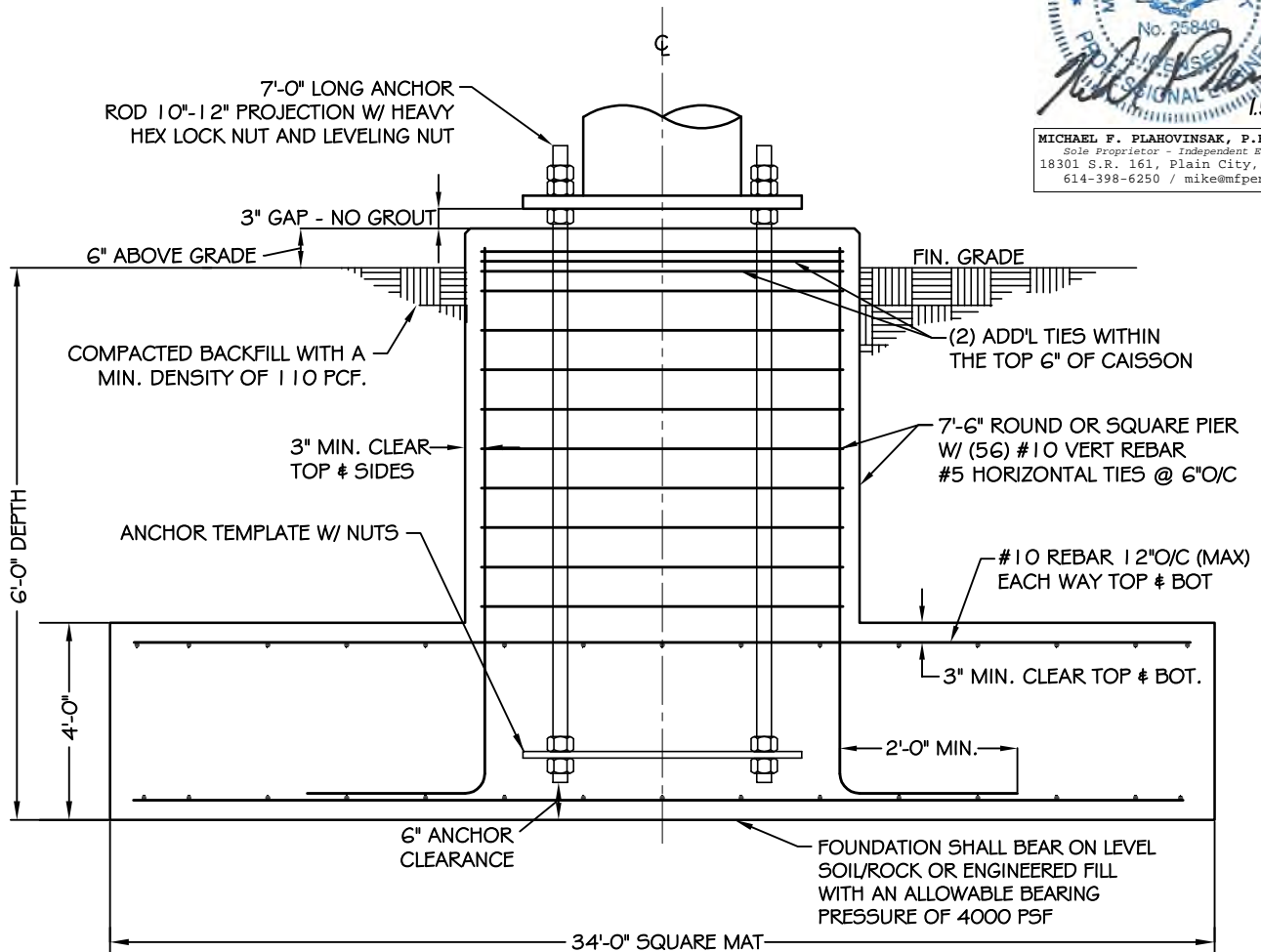
5. ESTIMATED CONCRETE VOLUME = 176.5 CUBIC YARDS.

6. THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:

MOMENT: 8750 FT\*KIPS  
SHEAR: 63 KIPS  
AXIAL: 78 KIPS



MICHAEL F. PLAHOVINSAK, P.E. #25849  
Sole Proprietor - Independent Engineer  
18301 S.R. 161, Plain City, OH 43064  
614-398-6250 / mike@mfpeng.com



**SPREAD FOOTING**

NOT TO SCALE



<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b> 170-ft Monopole - MFP #23521-363 r1	<b>Page</b> 1 of 7
	<b>Project</b> CT0090 Sherman 2	<b>Date</b> 15:13:03 01/05/22
	<b>Client</b> TP-20446	<b>Designed by</b> JC

## Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower base elevation above sea level: 883.00 ft.

Basic wind speed of 114 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 40 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	170.00-125.00	45.00	5.00	18	26.0000	35.1032	0.2188	0.8750	A572-65 (65 ksi)
L2	125.00-84.00	46.00	6.00	18	33.6542	42.9597	0.3750	1.5000	A572-65 (65 ksi)
L3	84.00-47.25	42.75	6.75	18	40.9959	49.6440	0.5000	2.0000	A572-65 (65 ksi)
L4	47.25-1.00	53.00		18	47.2785	58.0000	0.5625	2.2500	A572-65 (65 ksi)

## Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L1	26.3673	17.9002	1503.1570	9.1523	13.2080	113.8066	3008.2919	8.9518	4.1910	19.159
	35.6110	24.2207	3723.8084	12.3840	17.8324	208.8224	7452.5167	12.1126	5.7932	26.483
L2	35.1426	39.6106	5542.3621	11.8141	17.0963	324.1841	11092.0171	19.8091	5.2631	14.035
	43.5646	50.6864	11612.7768	15.1176	21.8235	532.1220	23240.8341	25.3480	6.9009	18.402
L3	42.7837	64.2670	13315.2269	14.3761	20.8259	639.3580	26647.9744	32.1396	6.3353	12.671
	50.3327	77.9915	23797.1330	17.4461	25.2191	943.6144	47625.5789	39.0031	7.8573	15.715
L4	49.3076	83.4055	22996.5761	16.5842	24.0175	957.4939	46023.4116	41.7107	7.3310	13.033
	58.8080	102.5475	42741.8667	20.3903	29.4640	1450.6471	85539.9743	51.2835	9.2180	16.388

<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b>	170-ft Monopole - MFP #23521-363 r1	<b>Page</b>	2 of 7
	<b>Project</b>	CT0090 Sherman 2	<b>Date</b>	15:13:03 01/05/22
	<b>Client</b>	TP-20446	<b>Designed by</b>	JC

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor $A_f$	Adjust. Factor $A_r$	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1 170.00-125.00				1	1	1			
L2 125.00-84.00				1	1	1			
L3 84.00-47.25				1	1	1			
L4 47.25-1.00				1	1	1			

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	$C_{AA}$	Weight	
							ft <sup>2</sup> /ft	plf	
1 5/8"	C	No	Yes	Inside Pole	170.00 - 1.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.92 0.92 0.92
1 5/8"	C	No	Yes	Inside Pole	166.00 - 1.00	18	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.92 0.92 0.92
1 5/8"	C	No	Yes	Inside Pole	156.00 - 1.00	18	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.92 0.92 0.92
1 5/8"	C	No	Yes	Inside Pole	146.00 - 1.00	18	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.92 0.92 0.92
1 5/8"	C	No	Yes	Inside Pole	136.00 - 1.00	18	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.92 0.92 0.92
1 5/8"	C	No	Yes	Inside Pole	100.00 - 1.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.92 0.92 0.92

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	$A_R$	$A_F$	$C_{AA}$ In Face	$C_{AA}$ Out Face	Weight
			ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	K
L1	170.00-125.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1.96
L2	125.00-84.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	3.02
L3	84.00-47.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	2.83
L4	47.25-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	3.56

<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b>	170-ft Monopole - MFP #23521-363 r1	<b>Page</b>	3 of 7
	<b>Project</b>	CT0090 Sherman 2	<b>Date</b>	15:13:03 01/05/22
	<b>Client</b>	TP-20446	<b>Designed by</b>	JC

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
L1	170.00-125.00	A	1.161	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1.96
L2	125.00-84.00	A	1.122	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	3.02
L3	84.00-47.25	A	1.071	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	2.83
L4	47.25-1.00	A	0.971	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	3.56

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
20 ft Dipole	A	From Face	3.00	0.0000	183.00	No Ice	6.00	6.00	0.06
			0.00			1/2" Ice	8.03	8.03	0.10
			0.00			1" Ice	10.08	10.08	0.16
20 ft Dipole	B	From Face	3.00	0.0000	183.00	No Ice	6.00	6.00	0.06
			0.00			1/2" Ice	8.03	8.03	0.10
			0.00			1" Ice	10.08	10.08	0.16
(3) 3' Side Arm Mount	C	None		0.0000	170.00	No Ice	0.76	0.76	0.03
						1/2" Ice	0.96	0.96	0.04
						1" Ice	1.16	1.16	0.05
** EPA 200 ft2	C	None		0.0000	166.00	No Ice	200.00	200.00	4.00
						1/2" Ice	220.00	220.00	6.00
						1" Ice	240.00	240.00	8.00
EPA 200 ft2	C	None		0.0000	156.00	No Ice	200.00	200.00	4.00
						1/2" Ice	220.00	220.00	6.00
						1" Ice	240.00	240.00	8.00
EPA 200 ft2	C	None		0.0000	146.00	No Ice	200.00	200.00	4.00
						1/2" Ice	220.00	220.00	6.00
						1" Ice	240.00	240.00	8.00
EPA 200 ft2	C	None		0.0000	136.00	No Ice	200.00	200.00	4.00
						1/2" Ice	220.00	220.00	6.00
						1" Ice	240.00	240.00	8.00
** 20 ft Dipole	A	From Face	3.00	0.0000	110.00	No Ice	6.00	6.00	0.06
0.00			1/2" Ice			8.03	8.03	0.10	
0.00			1" Ice			10.08	10.08	0.16	
20 ft Dipole	B	From Face	3.00	0.0000	110.00	No Ice	6.00	6.00	0.06
			0.00			1/2" Ice	8.03	8.03	0.10
			0.00			1" Ice	10.08	10.08	0.16
(2) 3' Side Arm Mount	C	None		0.0000	100.00	No Ice	0.76	0.76	0.03
						1/2" Ice	0.96	0.96	0.04
						1" Ice	1.16	1.16	0.05

<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b>	170-ft Monopole - MFP #23521-363 r1	<b>Page</b>	4 of 7
	<b>Project</b>	CT0090 Sherman 2	<b>Date</b>	15:13:03 01/05/22
	<b>Client</b>	TP-20446	<b>Designed by</b>	JC

## Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz Lateral ft	Vert ft							
2 ft standard	C	Paraboloid w/o Radome	From Face	1.00	0.0000	°	°	ft	ft	No Ice	3.14	0.01
				0.00						1/2" Ice	3.41	0.06
				0.00						1" Ice	3.68	0.10

## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 90 deg - No Ice
5	0.9 Dead+1.0 Wind 90 deg - No Ice
6	1.2 Dead+1.0 Wind 180 deg - No Ice
7	0.9 Dead+1.0 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

## Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	170 - 125	Pole	Max Tension	4	0.00	0.00	-0.00
			Max. Compression	8	-45.81	0.00	0.57
			Max. Mx	4	-19.63	-944.22	0.16
			Max. My	2	-19.57	0.00	952.55
			Max. Vy	4	43.67	-944.22	0.16
			Max. Vx	2	-43.87	0.00	952.55
			Max. Torque	4			1.07
L2	125 - 84	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-59.85	0.00	1.44
			Max. Mx	4	-32.47	-2774.67	0.41
			Max. My	2	-32.43	0.00	2791.11
			Max. Vy	4	47.75	-2774.67	0.41
			Max. Vx	2	-47.95	0.00	2791.11
			Max. Torque	4			2.24
L3	84 - 47.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-77.24	0.00	1.44
			Max. Mx	4	-48.78	-4549.80	0.39
			Max. My	2	-48.76	0.00	4573.22
			Max. Vy	4	50.66	-4549.80	0.39
			Max. Vx	2	-50.85	0.00	4573.22
			Max. Torque	4			2.22
L4	47.25 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-108.24	0.00	1.44
			Max. Mx	4	-78.17	-7316.27	0.30

<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b>	170-ft Monopole - MFP #23521-363 r1	<b>Page</b>	5 of 7
	<b>Project</b>	CT0090 Sherman 2	<b>Date</b>	15:13:03 01/05/22
	<b>Client</b>	TP-20446	<b>Designed by</b>	JC

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-78.17	0.00	7349.63
			Max. Vy	4	53.19	-7316.27	0.30
			Max. Vx	2	-53.37	0.00	7349.63
			Max. Torque	4			2.22

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	170 - 125	39.761	12	2.1041	0.0000
L2	130 - 84	22.994	12	1.7627	0.0000
L3	90 - 47.25	10.574	12	1.1409	0.0000
L4	54 - 1	3.715	12	0.6462	0.0000

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
183.00	20 ft Dipole	12	39.761	2.1041	0.0031	29036
173.00	2 ft standard	12	39.761	2.1041	0.0031	29036
170.00	(3) 3' Side Arm Mount	12	39.761	2.1041	0.0031	29036
166.00	EPA 200 ft2	12	37.997	2.0779	0.0029	29036
156.00	EPA 200 ft2	12	33.622	2.0091	0.0025	10369
146.00	EPA 200 ft2	12	29.362	1.9299	0.0020	6048
136.00	EPA 200 ft2	12	25.301	1.8327	0.0016	4268
110.00	20 ft Dipole	12	16.148	1.4673	0.0010	3777
100.00	(2) 3' Side Arm Mount	12	13.205	1.3024	0.0008	3856

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	170 - 125	161.028	2	8.5327	0.0000
L2	130 - 84	93.229	2	7.1529	0.0000
L3	90 - 47.25	42.908	2	4.6321	0.0000
L4	54 - 1	15.078	2	2.6235	0.0000

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
183.00	20 ft Dipole	2	161.028	8.5327	0.0125	7456
173.00	2 ft standard	2	161.028	8.5327	0.0125	7456
170.00	(3) 3' Side Arm Mount	2	161.028	8.5327	0.0125	7456
166.00	EPA 200 ft2	2	153.897	8.4268	0.0117	7456
156.00	EPA 200 ft2	2	136.209	8.1493	0.0098	2660
146.00	EPA 200 ft2	2	118.986	7.8293	0.0080	1548

<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b> 170-ft Monopole - MFP #23521-363 r1	<b>Page</b> 6 of 7
	<b>Project</b> CT0090 Sherman 2	<b>Date</b> 15:13:03 01/05/22
	<b>Client</b> TP-20446	<b>Designed by</b> JC

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
136.00	EPA 200 ft2	2	102.562	7.4363	0.0064	1089
110.00	20 ft Dipole	2	65.505	5.9557	0.0039	952
100.00	(2) 3' Side Arm Mount	2	53.578	5.2873	0.0033	967

### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
L1	170 - 125 (1)	TP35.1032x26x0.2188	45.00	0.00	0.0	23.5184	-19.57	1375.83	0.014
L2	125 - 84 (2)	TP42.9597x33.6542x0.375	46.00	0.00	0.0	49.2418	-32.43	2880.64	0.011
L3	84 - 47.25 (3)	TP49.644x40.9959x0.5	42.75	0.00	0.0	75.8244	-48.76	4435.73	0.011
L4	47.25 - 1 (4)	TP58x47.2785x0.5625	53.00	0.00	0.0	102.547	-78.17	5999.03	0.013

### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft	φM <sub>nx</sub> kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M <sub>uy</sub> kip-ft	φM <sub>ny</sub> kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	170 - 125 (1)	TP35.1032x26x0.2188	952.55	1036.04	0.919	0.00	1036.04	0.000
L2	125 - 84 (2)	TP42.9597x33.6542x0.375	2791.11	2989.63	0.934	0.00	2989.63	0.000
L3	84 - 47.25 (3)	TP49.644x40.9959x0.5	4573.22	5513.57	0.829	0.00	5513.57	0.000
L4	47.25 - 1 (4)	TP58x47.2785x0.5625	7349.63	8822.58	0.833	0.00	8822.58	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V <sub>u</sub> K	φV <sub>n</sub> K	Ratio $\frac{V_u}{\phi V_n}$	Actual T <sub>u</sub> kip-ft	φT <sub>n</sub> kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	170 - 125 (1)	TP35.1032x26x0.2188	43.87	412.75	0.106	0.00	1224.38	0.000
L2	125 - 84 (2)	TP42.9597x33.6542x0.375	47.95	864.19	0.055	0.00	3131.02	0.000
L3	84 - 47.25 (3)	TP49.644x40.9959x0.5	50.85	1330.72	0.038	0.00	5567.99	0.000
L4	47.25 - 1 (4)	TP58x47.2785x0.5625	53.37	1799.71	0.030	0.00	9052.67	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	170 - 125 (1)	0.014	0.919	0.000	0.106	0.000	0.945	1.000	4.8.2 ✓
L2	125 - 84 (2)	0.011	0.934	0.000	0.055	0.000	0.948	1.000	4.8.2 ✓
L3	84 - 47.25 (3)	0.011	0.829	0.000	0.038	0.000	0.842	1.000	4.8.2 ✓
L4	47.25 - 1 (4)	0.013	0.833	0.000	0.030	0.000	0.847	1.000	4.8.2 ✓

<b>tnxTower</b>  <b>Michael Plahovinsak, P.E.</b> 18301 State Route 161 Plain City, OH 43064 Phone: 614-398-6250 FAX: mike@mfpeng.com	<b>Job</b> 170-ft Monopole - MFP #23521-363 r1	<b>Page</b> 7 of 7
	<b>Project</b> CT0090 Sherman 2	<b>Date</b> 15:13:03 01/05/22
	<b>Client</b> TP-20446	<b>Designed by</b> JC

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail	
L1	170 - 125	Pole	TP35.1032x26x0.2188	1	-19.57	1375.83	94.5	Pass	
L2	125 - 84	Pole	TP42.9597x33.6542x0.375	2	-32.43	2880.64	94.8	Pass	
L3	84 - 47.25	Pole	TP49.644x40.9959x0.5	3	-48.76	4435.73	84.2	Pass	
L4	47.25 - 1	Pole	TP58x47.2785x0.5625	4	-78.17	5999.03	84.7	Pass	
							Summary		
							Pole (L2)	94.8	Pass
							<b>RATING =</b>	<b>94.8</b>	<b>Pass</b>



<b>Michael F. Plahovinsak, P.E.</b> 18301 State Route 161 W Plain City, OH 43064 Phone: 614-398-6250 email: mike@mfpeng.com	<b>Job</b> 170-ft monopole - MFP #23521-363	<b>Page</b> BP & AB Calc
	<b>Project</b> CT0090 Sherman-2	<b>Date</b> 1/5/2022
	<b>Client</b> TAPP TP-20446	<b>Designed by</b> Mike

**Anchor Rod and Base Plate Calculation**

**TIA-222-H**

<b>Factored Base Reactions:</b>	<b>Pole Shape:</b>	<b>Anchor Rods:</b>	<b>Base Plate:</b>
Moment: 7350 ft-kips	18-Sided	(26) 2.25 in. A615 GR. 75	2.75 in. x 71.5 in. Round
Shear: 53 kips	<b>Pole Dia. (<math>D_f</math>):</b>	Anchor Rods Evenly Spaced	$f_y = 50$ ksi
Axial: 78 kips	58.00 in	On a 65.5 in Bolt Circle	

**Anchor Rod Calculation According to TIA-222-H section 4.9.9**

- $\phi_t, \phi_v = 0.75$  TIA 4.9.6
- $I_{bolts} = 13943.31 \text{ in}^2$  Momet of Inertia
- $P_u = 210$  kips Compr Force
- $V_u = 2.0$  kips Shear Force
- $R_{nt} = 325.00$  kips Nominal Tensile Strength
- $R_{nv} = 198.80$  kips ( $0.5 \times f_u \times a_g$ )
- Stress Rating = 87.5%** Satisfies TIA-H 4.9.9

**Base Plate Calculation According to TIA-222-H**

- $\phi = 0.90$  TIA 4.7
  - $M_{PL} = 484.3$  in-kip Plate Moment
  - $L = 7.0$  in Section Length
  - $Z = 13.2$  Plastic Section Modulus
  - $M_P = 662.5$  in-kip Plastic Moment
  - $\phi M_n = 596.2$  in-kip Factored Resistance
- Calculated Moment vs Factored Resistance*
- $484.32 \text{ in-kip} \leq 596 \text{ in-kip}$
- Stress Rating = 81.2%**

<b>Anchor Rods Are Adequate</b>	<b>87.5%</b> <input checked="" type="checkbox"/>
<b>Base Plate is Adequate</b>	<b>81.2%</b> <input checked="" type="checkbox"/>

## Monopole Spread Footing Calculation

**TIA-222-H**

---

Factored Base Reactions:	Footing Dimensions:		Concrete:
Moment: 8750 ft-kips	34 ft x 34 ft	7.5 ft Square Pier	f'c = 4500 psi
Shear: 63 kips	x 4 ft thick	w/6 in Reveal	Steel fy = 60 ksi
Axial: 78 kips	Bearing 6 ft B.G.	176.5 Yd3 Concrete	f = 0.75
Soil Backfill 100 pcf	Ultimate Bearing:	8000 psf	Water Table 2.0

---

### Foundation Weight

Weight of Pole	78.0 kips
Weight of Concrete	714.69375 kips
Weight of Soil	219.95 kips
Bouyancy of Water	-288.5 kips
Total	724.1 kips

### Overturning Resistance:

Overturning Moment ( $M_u$ )	9159.5 ft-kips	8750 ft-kips + (63 kips x 6.5 ft)
Resisting Moment ( $R_s$ )	12309.805 ft-kips	724.10615 kips x 34 ft / 2
$\phi \times R_s > M_u$	$M_{\text{overturning}} / f M_{\text{resist}}$	<b>99.2% OK</b>

### Soil Bearing Pressure:

Eccentricity (e)	12.65 ft	9159.5 ft-kips / 724.10615 kips
6(e)	75.9 ft >	34.0 ft    6e > 34
Maximum Soil Bearing	2898.6771 psf	Calculated across corners
Soil Overburden	-350.4 psf	Overburden - Bouyancy
Net Soil Bearing	2548.2771 psf	
Resisting Soil Bearing ( $R_s$ )	8000 psf	
Net Soil Bearing < $\phi \times R_s$	Net Bearing / f $R_s$	<b>42.5% OK</b>

### Bending Moment in Pier:

Bending Moment	8907.5 ft-kips	8750 ft-kips + (63 kips x 2.5 ft)
Min. Pier Steel	40.5 in <sup>2</sup>	1/2% (Based on Square Pier)

### Bending Moment in Footing:

Max Bending Moment	6444.0909 ft-kips	$\Sigma$ Moments about pier face
Footing Steel Req'd (Loads)	1.17 in <sup>2</sup> /ft	
Min. Footing Steel	1.04 in <sup>2</sup> /ft	0.18%

# Development & Management Plans



HOMELAND TOWERS, LLC

# WIRELESS TELECOMMUNICATIONS FACILITY

## SHERMAN II 16 COOTE HILL ROAD SHERMAN, CT 06784

HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

at&t  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

ALL-POINTS  
TECHNOLOGY CORPORATION  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

D&M DOCUMENTS		
NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

### DRAWING INDEX

- T-1 TITLE SHEET & INDEX
- VB101 EXISTING CONDITIONS SURVEY
- SP-1 SITE PLAN & ABUTTERS MAP
- SP-2 PARTIAL SITE PLAN
- SP-3 ACCESS DRIVE PROFILE & DETAILS
- SP-4 ACCESS DRIVE PROFILE
- GD-1 GRADING & DRAINAGE PLAN
- CP-1 COMPOUND PLAN & ELEVATION
- C-1 SITE DETAILS
- C-2 SITE DETAILS
- C-3 AT&T EQUIPMENT PLAN & DETAILS
- C-4 AT&T ANTENNA PLAN & DETAILS
- C-5 MUNICIPAL ANTENNA PLANS
- EC-1 EROSION CONTROL NOTES
- N-1 NOTES & SPECIFICATIONS
- N-2 ENVIRONMENTAL NOTES

### SITE INFORMATION

PROJECT LOCATION: 16 COOTE HILL ROAD  
SHERMAN, CT 06784

PROJECT DESCRIPTION: RAWLAND SITE W/ GROUND EQUIPMENT  
WITHIN 2,400± SF TELECOMMUNICATIONS  
COMPOUND W/ NEW 170'± AGL  
GALVANIZED MONOPOLE

PROPERTY DEVELOPER: HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2ND FLOOR  
DANBURY, CT 06810

DEVELOPER CONTACT: RAY VERGATI  
(203) 297-6345

ENGINEER CONTACT: ROBERT C. BURNS, P.E.  
(860) 552-2036

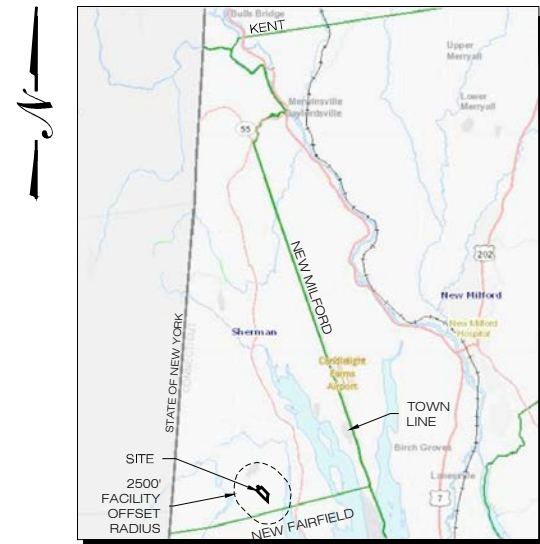
LATITUDE: 41° 32' 02.50" N  
LONGITUDE: 73° 29' 34.45" W  
ELEVATION: 878.5'± AMSL

MAP: 51  
LOT: 28  
ZONE: ZONE A : FARM RESIDENCE

DESIGN PROFESSIONALS OF RECORD  
PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385  
DEVELOPER: HOMELAND TOWERS, LLC  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

HOMELAND TOWERS  
SHERMAN II  
SITE 16 COOTE HILL ROAD  
ADDRESS: SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

SHEET TITLE:  
**TITLE SHEET & INDEX**  
SHEET NUMBER:  
**T-1**



**MUNICIPAL NOTIFICATION LIMIT MAP**  
SCALE : 1" = 2 Miles



**VICINITY MAP**  
SCALE: N.T.S.

OWNER:  
MICHAEL J. & SUZANNE J. BERGER  
16 COOTE HILL ROAD  
SHERMAN, CT 06784

APPLICANTS:  
HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2ND FLOOR  
DANBURY, CT 06810  
RAY VERGATI  
(203) 297-6345  
AT&T  
340 MOUNT KEMBLE AVE.  
MORRISTOWN, NJ 07960

HOMELAND PROJECT ATTORNEY:  
CUDDY & FEDER, LLP  
445 HAMILTON AVENUE  
14TH FLOOR  
WHITE PLAINS, NY 10601  
(914) 761-1300

POWER PROVIDER:  
EVERSOURCE: (800) 286-2000

TELCO PROVIDER:  
FRONTIER (800) 921-8102

CALL BEFORE YOU DIG:  
(800) 922-4455

GOVERNING CODES:  
CONNECTICUT STATE BUILDING CODE, LATEST EDITION  
NATIONAL ELECTRIC CODE, LATEST EDITION  
TIA-222-H

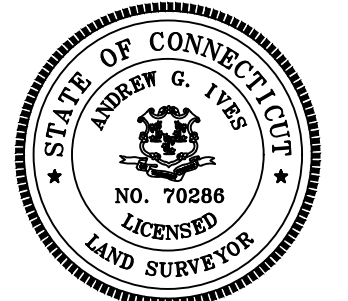
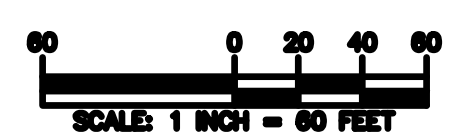
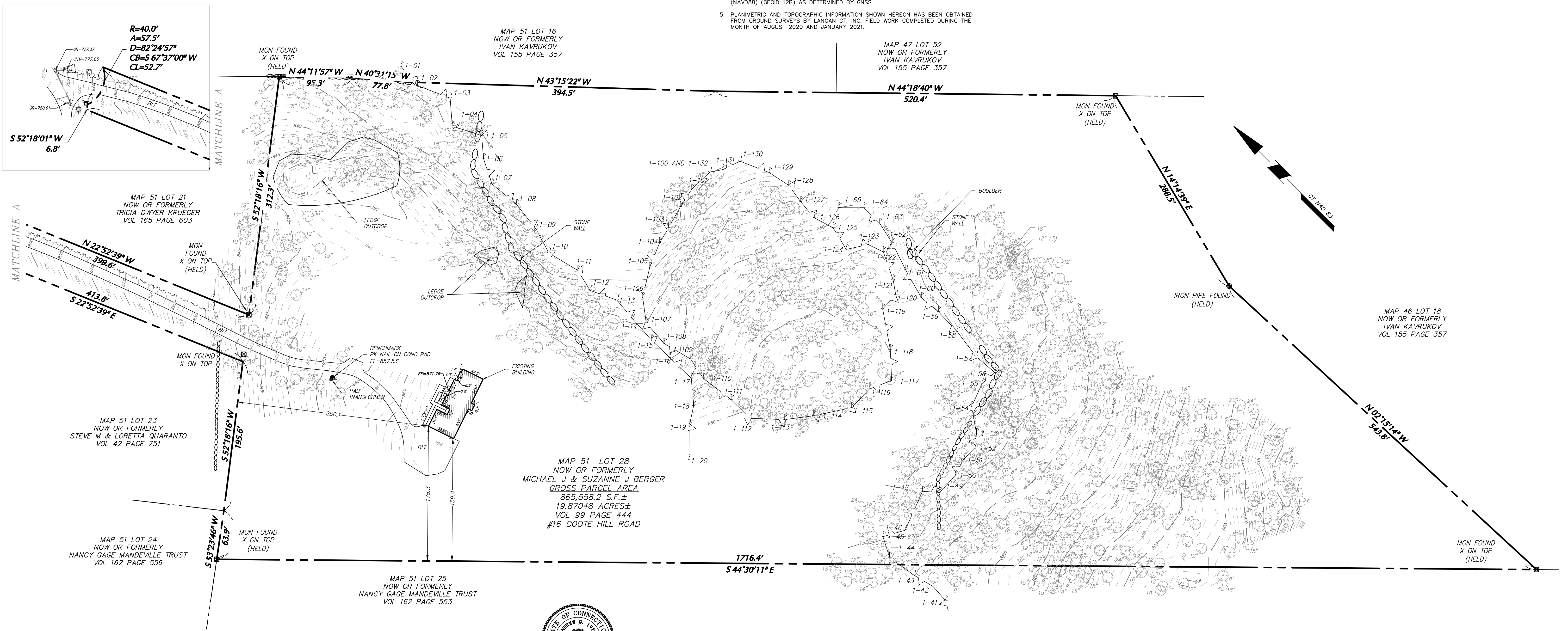
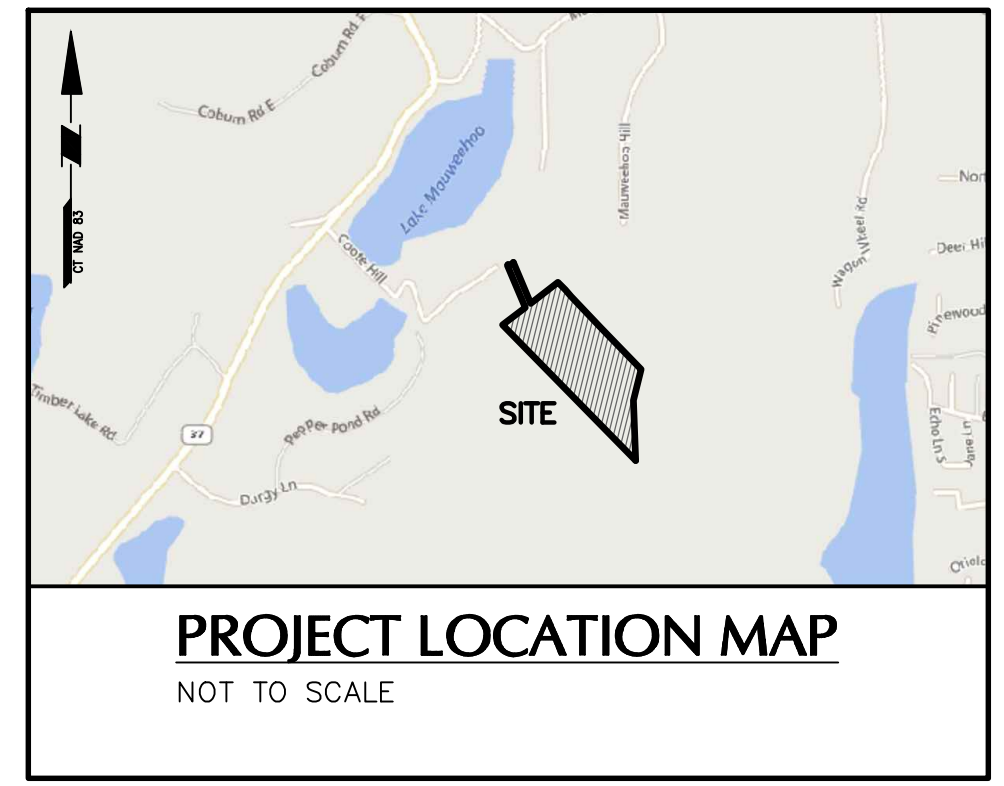


**LEGEND** (NOT SHOWN TO SCALE)

	AIR CONDITIONING UNIT		METAL GUARD RAIL
	BOLLARD		WOOD GUARD RAIL
	BORING HOLE		STOCKADE FENCE
	MONITORING WELL		CHAINLINK FENCE
	SIGN		STONE WALL
	SHRUB		TREE LINE
	TEST PIT		OVERHEAD WIRE
	WETLAND FLAG		WETLAND LINE
	CABLE BOX HAND HOLE		EASEMENT LINE
	CATCH BASIN		CONCRETE
	CLEANOUT		CONCRETE PAD
	ELECTRIC BOX		LANDSCAPED AREA
	ELECTRIC METER		BUILDING OVERHANG
	FILLER VALVE		BOTTOM OF WALL
	FIRE HYDRANT		EDGE OF PAVEMENT
	FLARED END SECTION		EDGE OF GRAVEL
	GAS METER		EDGE OF WALK
	GAS VALVE		BITUMINOUS CURB
	GUY POLE		CONCRETE CURB
	GUY WIRE		SINGLE WHITE STRIPE
	HAND HOLE		BROKEN WHITE STRIPE
	LIGHT POLE		SINGLE YELLOW STRIPE
	MANHOLE (TYPE AS LABELED)		DOUBLE YELLOW STRIPE
			POWER POLE
			TELEPHONE BOX
			TRAFFIC BOX
			UNDERGROUND VAULT
			VALVE UNKNOWN
			WATER METER
			WATER VALVE
			SPOT ELEVATION
			BITUMINOUS
			CONCRETE
			CONCRETE PAD
			LANDSCAPED AREA
			BUILDING OVERHANG
			BOTTOM OF WALL
			EDGE OF PAVEMENT
			EDGE OF GRAVEL
			EDGE OF WALK
			BITUMINOUS CURB
			CONCRETE CURB
			SINGLE WHITE STRIPE
			BROKEN WHITE STRIPE
			SINGLE YELLOW STRIPE
			DOUBLE YELLOW STRIPE

**NOTES**

- THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. THIS SURVEY IS A PROPERTY SURVEY CONFORMING TO A HORIZONTAL ACCURACY OF A-2 AND A TOPOGRAPHIC SURVEY CONFORMING TO A T-2 ACCURACY. THE BOUNDARY DETERMINATION IS A RESURVEY. THE PURPOSE OF THIS SURVEY IS TO PROVIDE A BOUNDARY OPINION AND DEPICIT SITE FEATURES FOR FUTURE SITE DEVELOPMENT.
  - THIS SURVEY IS BASED UPON EXISTING PHYSICAL CONDITIONS FOUND AT THE SUBJECT SITE, DEED INFORMATION AND THE FOLLOWING REFERENCES:
    - COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NUMBER: 01-1900834, EFFECTIVE DATE OCTOBER 28, 2019, SCHEDULE B SECTION II:
      - NOT SURVEY RELATED
      - SURVEY PROVIDED
      - NOT SURVEY RELATED
      - NOT SURVEY RELATED
      - RIGHTS AND RIGHT OF WAY AS DEFINED IN VOLUME 30 PAGE 238 S.L.R. RIGHT OF WAY TO ROUTE 37.
      - RIGHTS AS DEFINED IN VOLUME 64 PAGE 76 S.L.R. RIGHTS OF ACCESS TO COOTE HILL ROAD (PRIVATE WAY).
      - LEASE AGREEMENT AS DEFINED IN VOLUME 152 PAGE 791 S.L.R.
      - NOT SURVEY RELATED.
      - TERMS AND CONDITIONS OF A LEASE AGREEMENT AS DEFINED IN VOLUME 168 PAGE 808 S.L.R.
    - MAP TITLED "MAP PREPARED FOR PEPPER PLATT JONES ROUTE 37 SHERMAN, CONNECTICUT", SCALE 1"= 100', BY: RICHARD W. DIBBLE #1488 S.L.R.
    - MAP TITLED "COOTEHILL ON THE LAND OF CLAIRE E.L. COOTE", SHERMAN, CONNECTICUT, SCALE: 1"= 100', DATED: OCTOBER 1973, BY: PAUL LUND, #830 S.L.R.
  - THE MERIDIAN OF THIS SURVEY IS REFERENCED TO CONNECTICUT STATE PLANE COORDINATE SYSTEM NAD 83 (EPOCH 2011). POSITION WAS DETERMINED BY GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) AS PROVIDED BY HXGN SMARTNET CONTINUOUSLY OPERATED REFERENCE STATIONS (CORS).
  - ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) (GEOID 12B) AS DETERMINED BY GNSS.
  - PLANIMETRIC AND TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN CT, INC. FIELD WORK COMPLETED DURING THE MONTH OF AUGUST 2020 AND JANUARY 2021.
- AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAP ENTITLED "FAIRFIELD COUNTY, CONNECTICUT PANEL 90 OF 626, MAP NUMBER 0901CC0090F, EFFECTIVE DATE JUNE 18, 2010" THE PROJECT AREA IS IN ZONE X (UNSHADED).
- UNLESS SPECIFICALLY NOTED HEREON, STORM AND SANITARY SEWER INFORMATION (INCLUDING PIPE INVERT, PIPE MATERIAL, AND PIPE SIZE) WAS OBSERVED AND MEASURED AT FIELD LOCATED STRUCTURES (MANHOLES/CATCH BASINS, ETC.). CONDITIONS CAN VARY FROM THOSE ENCOUNTERED AT THE TIMES WHEN AND LOCATIONS WHERE DATA IS OBTAINED, DESPITE MEETING THE REQUIRED STANDARD OF CARE, THE SURVEYOR CANNOT, AND DOES NOT WARRANT THAT PIPE MATERIAL AND/OR PIPE SIZE THROUGHOUT THE PIPE RUN ARE THE SAME AS THOSE OBSERVED AT EACH STRUCTURE, OR THAT THE PIPE RUN IS STRAIGHT BETWEEN THE LOCATED STRUCTURES.
- ADDITIONAL UTILITY (WATER, GAS, ELECTRIC ETC.) DATA MAY BE SHOWN FROM FIELD LOCATED SURFACE MARKINGS (BY OTHERS), EXISTING STRUCTURES, AND/OR FROM EXISTING DRAWINGS.
- UNLESS SPECIFICALLY NOTED HEREON, THE SURVEYOR HAS NOT EXCAVATED TO PHYSICALLY LOCATE THE UNDERGROUND UTILITIES. THE SURVEYOR MAKES NO GUARANTEES THAT THE SHOWN UNDERGROUND UTILITIES ARE EITHER IN SERVICE, ABANDONED OR SUITABLE FOR USE, NOR ARE IN THE EXACT LOCATION OR CONFIGURATION INDICATED HEREON.
- ALL BUILDINGS AND STRUCTURES WERE LOCATED AND MEASURED AT GROUND LEVEL. THE SURVEYOR MAKES NO DETERMINATIONS OR GUARANTEES AS TO THE ABSENCE, EXISTENCE OR LOCATION OF UNDERGROUND STRUCTURES, FOUNDATIONS, FOOTINGS, PROJECTIONS, WALLS, TANKS, SEPTIC SYSTEMS, ETC. NO TEST PITS, EXCAVATIONS OR GROUND PENETRATING RADAR WERE PERFORMED AS PART OF THIS SURVEY.
- PRIOR TO ANY DESIGN OR CONSTRUCTION, THE PROPER UTILITY AGENCIES MUST BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FOR FIELD LOCATIONS.
- THIS SURVEY IS NOT VALID WITHOUT THE EMBOSSED OR INKED SEAL OF THE PROFESSIONAL.



"TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

**LANGAN**

Langan CT, Inc.  
555 Long Wharf Drive  
New Haven, CT 06511

T: 203.562.5771 F: 203.789.6142 www.langan.com

Andrew G. Ives DATE SIGNED  
PROFESSIONAL LAND SURVEYOR  
CT STATE LIC. NO. 70286

Project  
**16 COOTE HILL ROAD**  
TOWN OF SHERMAN  
CONNECTICUT

Drawing Title  
**BOUNDARY & TOPOGRAPHIC SURVEY**

Project No.  
**140223401**

Date  
**AUGUST 27, 2020**

Drawn By  
**RLH**

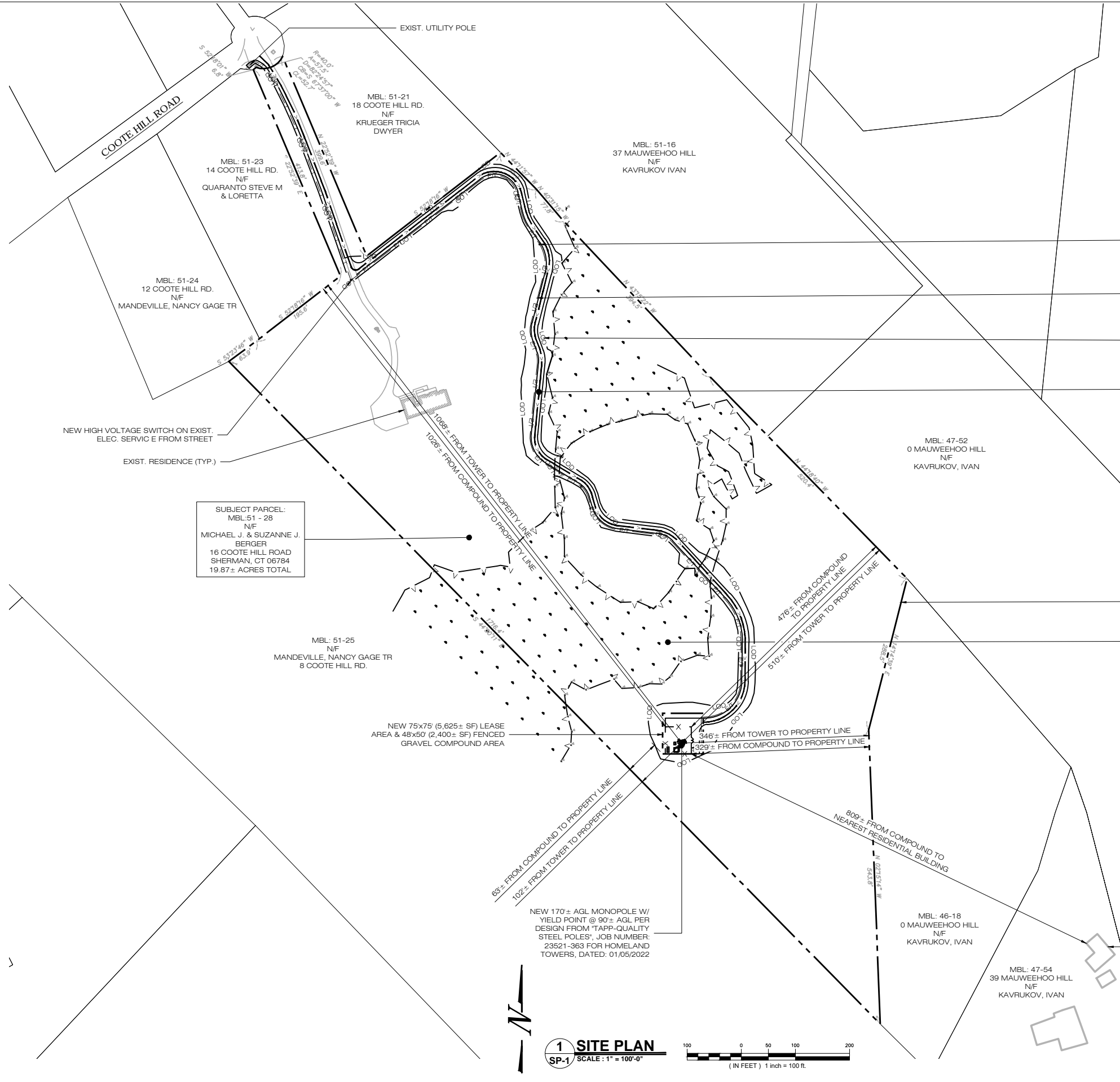
Checked By  
**AGI**

Drawing No.  
**VB101**

Sheet 1 of 1

Date	Description	No.
1/26/2021	ADDITIONAL TOPO. ADDED	1
REVISIONS		





Homeland Towers 16 Coote Hill Road Sherman, CT 1000' RESIDENTIAL BUILDING LIST			
PARCEL ID	STREET ADDRESS	BUILDING TYPE	DISTANCE FROM COMPOUND* (ft±)
47-54	39 Mauweehoo Hill	Single Family	809'

\*Information gathered from Sherman Assessor's Database & CTECO Ortho Aerial Images

- NEW 36" DIA. ELEC. SILO NO MORE THAN 500' APART, AS REQUIRED PER ELEC. COMPANY (TYP.)
- 4 NEW UNDERGROUND ELEC. SERVICE FROM NEW HIGH VOLTAGE SWITCH (APPROX. 1,680'±) & TELCO SERVICE FROM EXIST. UTILITY POLE (APPROX. 2,075'±)
- PROJECT LIMITS OF DISTURBANCE = 67,000± SF (1.54± ACRES)
- 2 COMPOUND ACCESS FROM COOTE HILL RD., ALONG EXIST. PAVED DRIVEWAY (APPROX. 415'±) & NEW GRAVEL ACCESS DRIVEWAY (APPROX. 1,635'±)

SUBJECT PARCEL:  
MBL: 51 - 28  
N/F  
MICHAEL J. & SUZANNE J. BERGER  
16 COOTE HILL ROAD  
SHERMAN, CT 06784  
19.87± ACRES TOTAL

**1 SITE PLAN**  
SP-1 SCALE: 1" = 100'-0"  
100 0 50 100 200  
(IN FEET) 1 inch = 100 ft.

**H**  
HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS**  
TECHNOLOGY CORPORATION  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

D&M DOCUMENTS		
NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONALS OF RECORD**  
PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385  
**DEVELOPER: HOMELAND TOWERS, LLC**  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**  
SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

**SITE PLAN & ABUTTERS MAP**

SHEET NUMBER:  
**SP-1**

MAP REFERENCES:  
1. "BOUNDARY & TOPOGRAPHIC SURVEY, 16 COOTE HILL ROAD, SHERMAN, CT", VB101; PREPARED BY LANGAN CT, INC., 55 LONG WHARF DRIVE, NEW HAVEN, CT 06511. DATED: AUGUST 27, 2020, REVISED JANUARY 26, 2021.

ACCESS DRIVE																	
NO.	BEARING	DELTA(A)	LENGTH	TANGENT	RADIUS	NO.	BEARING	DELTA(A)	LENGTH	TANGENT	RADIUS	NO.	BEARING	DELTA(A)	LENGTH	TANGENT	RADIUS
L1	N52°18'15.83"E		297.56'			C5		25°27'37"	22.22'	11.30'	50.0'	L10	S42°43'20.88"E		143.03'		
C1		114°25'39"	99.86'	77.63'	50.0'	L6	S5°47'28.51"W		131.94'			C10		43°33'21"	95.02'	49.94'	125.0'
L2	S13°16'05.41"E		37.51'			C6		64°30'45"	56.30'	31.56'	50.0'	L11	S0°50'00.15"W		71.73'		
C2		21°10'46"	27.72'	14.02'	75.0'	L7	S58°43'16.27"E		71.43'			C11		89°10'00"	116.72'	73.92'	75.0'
L3	S34°26'51.08"E		34.35'			C7		41°38'09"	36.33'	19.01'	50.0'	L12	N90°00'00.00"W		131.64'		
C3		48°57'31"	64.09'	34.15'	75.0'	L8	S17°05'07.15"E		21.27'								
L4	S14°30'39.58"W		95.37'			C8		66°00'57"	57.61'	32.48'	50.0'						
C4		34°10'48"	29.83'	15.37'	50.0'	L9	S83°06'04.00"E		74.79'								
L5	S19°40'08.22"E		23.44'			C9		40°22'43"	35.24'	18.39'	50.0'						

NOTE:  
90 TREES WILL NEED TO BE REMOVED IN CONSTRUCTION OF THE FACILITY.

6"-10" DIA.	23 TREES
10"-14" DIA.	19 TREES
>14" DIA.	48 TREES

**SITE AREAS & VOLUMES OF EARTHWORK**

SITEWORK ENTAILS APPROXIMATELY 968 CUBIC YARDS OF EXCAVATION AND 1,663 CUBIC YARDS OF FILL. THE COMPOUND WILL IMPORT APPROXIMATELY 712 CUBIC YARDS OF CLEAN BROKEN STONE. THE UTILITY TRENCH FROM THE DEMARCS TO THE COMPOUND WILL EXCAVATE APPROXIMATELY 323 CUBIC YARDS OF MATERIAL THAT WILL BE USED TO BACKFILL THE TRENCH.

COMPOUND AREA SLOPES:  
EXISTING - 5%-10%  
PROPOSED - 3%-5%

TOTAL AREA OF DISTURBANCE = 67,000± SF

STORMWATER VELOCITY:  
PRIOR TO GROUND COVER < 3.0 FT/SEC  
FOLLOWING GROUND COVER < 3.0 FT/SEC

STORMWATER VOLUME:  
PROPOSED IMPERVIOUS AREA = 4,158 SF  
WATER QUALITY STD VOLUME (1") = 347 CF  
STORAGE VOLUME (6" DEPTH, 40% VOIDS) = 530 CF

GROUND COVER TO BE ESTABLISHED AS FOLLOWS (U.O.N.)  
- WHITE CLOVER @ 0.20#/- SF  
- TALL FESCUE @ 0.45#/- SF  
- RYEGRASS @ 0.10#/- SF

**HOMELAND TOWERS, LLC**  
9 HARMONY STREET  
2ND FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**

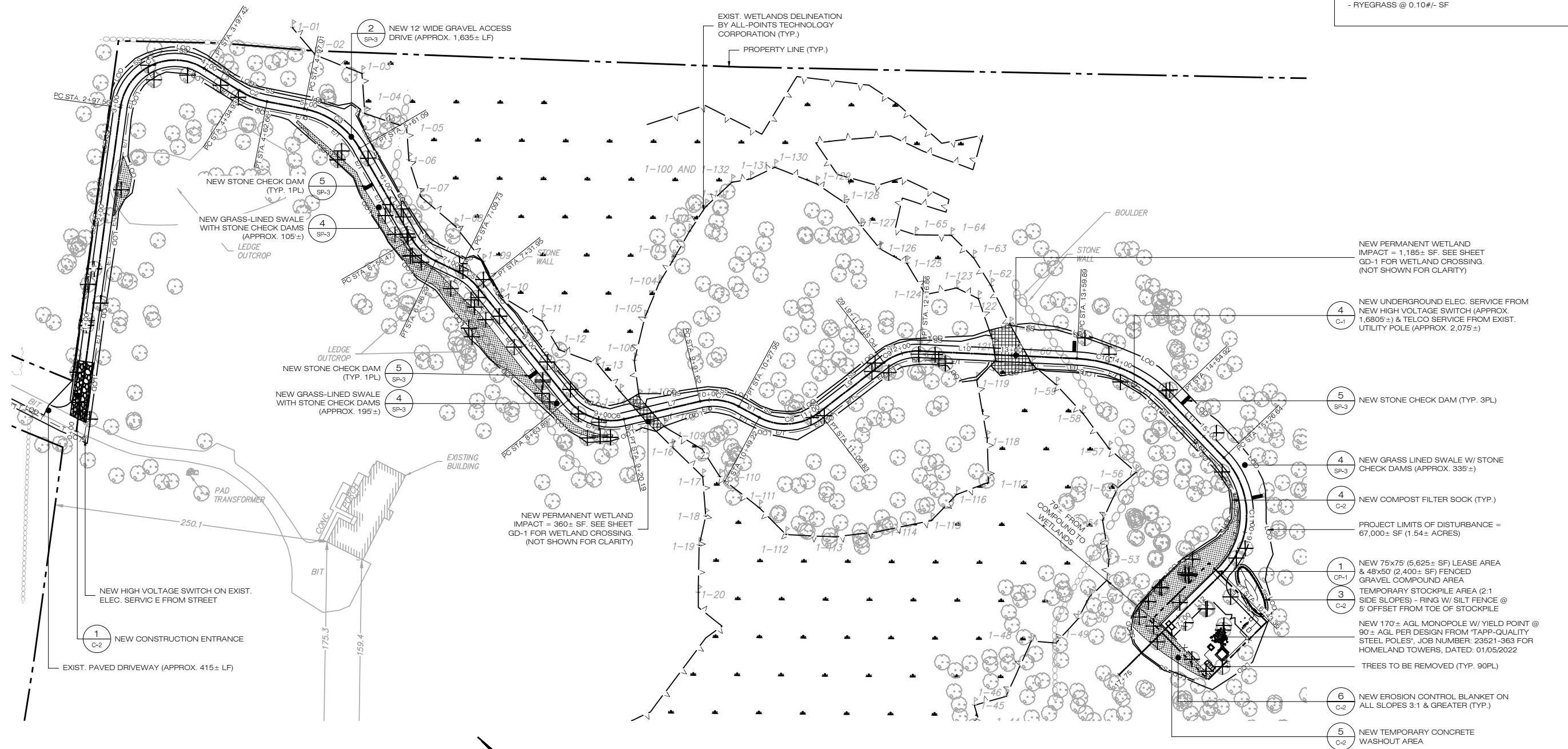
**340 MOUNT KEMBLE AVENUE**  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**

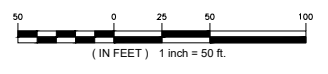
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		



**1 PARTIAL SITE PLAN**  
SP-2 SCALE: 1" = 50'-0"



MAP REFERENCES:  
1. "BOUNDARY & TOPOGRAPHIC SURVEY, 16 COOTE HILL ROAD, SHERMAN, CT", VB101; PREPARED BY LANGAN CT, INC., 55 LONG WHARF DRIVE, NEW HAVEN, CT 06511. DATED: AUGUST 27, 2020, REVISED JANUARY 26, 2021.

**DESIGN PROFESSIONALS OF RECORD**

PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

**DEVELOPER: HOMELAND TOWERS, LLC**  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**

SITE ADDRESS: SHERMAN, CT 06784

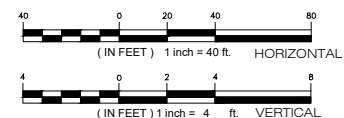
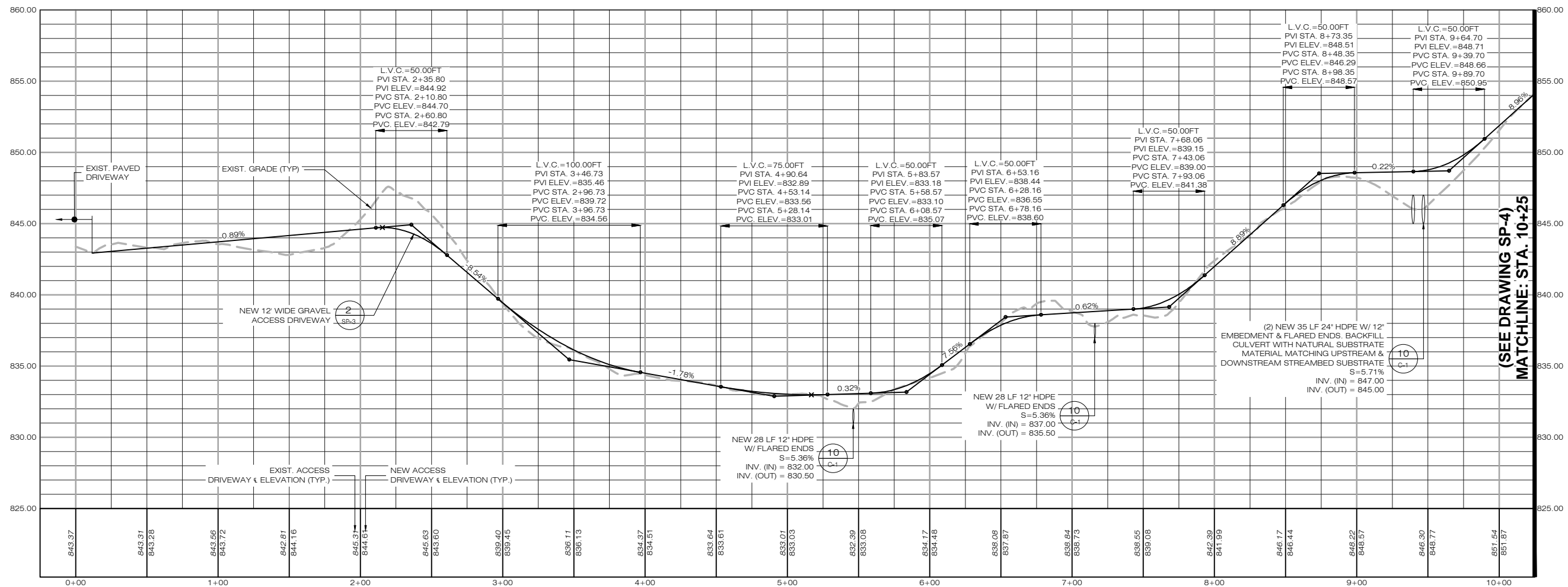
APT FILING NUMBER: CT283390

DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

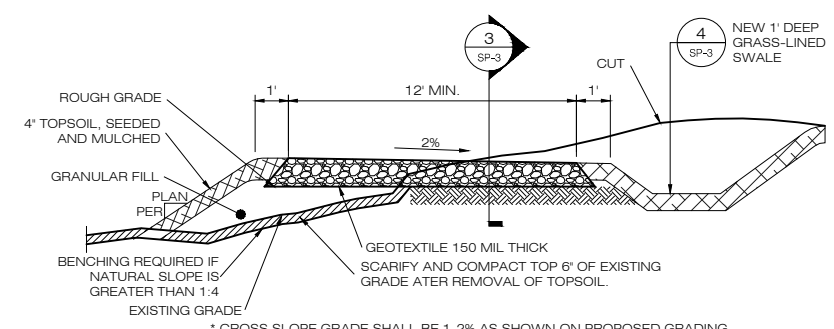
SHEET TITLE:  
**PARTIAL SITE PLAN**

SHEET NUMBER:  
**SP-2**



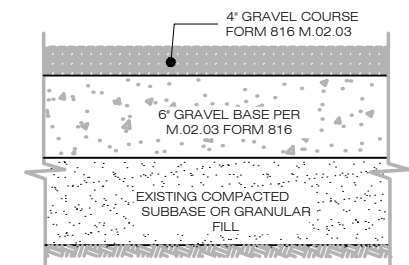


**1 ACCESS DRIVEWAY PROFILE**  
 SP-3 SCALE: HORIZONTAL: 1" = 40'-0"  
 VERTICAL: 1" = 4'-0"

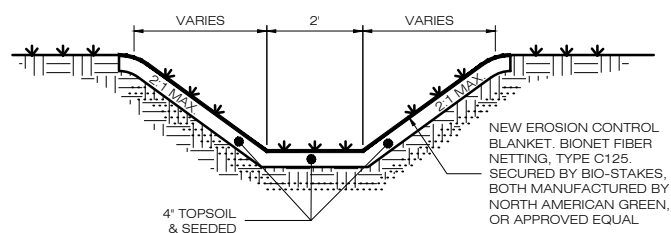


\* CROSS SLOPE GRADE SHALL BE 1-2% AS SHOWN ON PROPOSED GRADING  
 \* WHERE CUT OR FILL EMBANKMENTS ARE STEEPER THAN 3:1 USE A STAPLED IN PLACE, BIODEGRADABLE EROSION CONTROL BLANKET OR A BONDED FIBER MATRIX HYDROSEED APPLICATION.

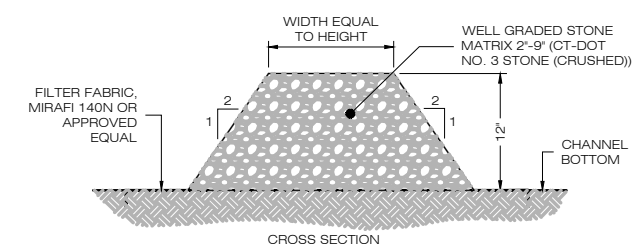
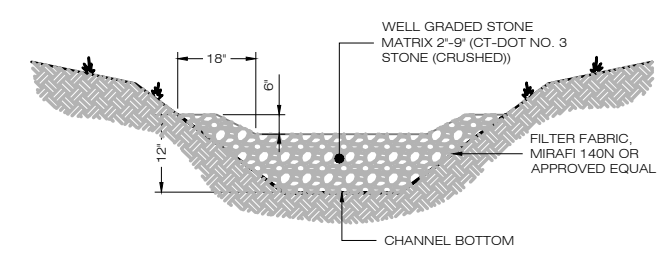
**2 TYPICAL ROAD CROSS SECTION**  
 SP-3 SCALE: N.T.S.



**3 GRAVEL ROAD/PARKING SECTION**  
 SP-3 SCALE: N.T.S.



**4 GRASS LINED SWALE**  
 SP-3 SCALE: N.T.S.



**5 STONE CHECK DAM**  
 SP-3 SCALE: N.T.S.

**HOMELAND TOWERS, LLC**  
 9 HARMONY STREET  
 2nd FLOOR  
 DANBURY, CT 06810  
 (203) 297-6345

**at&t**  
 340 MOUNT KEMBLE AVENUE  
 MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**  
 567 VAUXHALL STREET EXTENSION - SUITE 311  
 WATERFORD, CT 06385 PHONE: (860)-663-1697  
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONALS OF RECORD**  
 PROF: ROBERT C. BURNS P.E.  
 COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
 ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385  
 DEVELOPER: HOMELAND TOWERS, LLC  
 ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**  
 SITE ADDRESS: SHERMAN, CT 06784  
 APT FILING NUMBER: CT283390  
 DATE: 01/18/22 DRAWN BY: CSH  
 CHECKED BY: RCB

**ACCESS DRIVE PROFILE & DETAILS**

SHEET NUMBER:  
**SP-3**



HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345



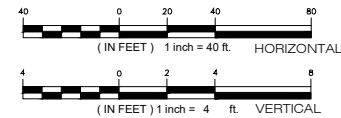
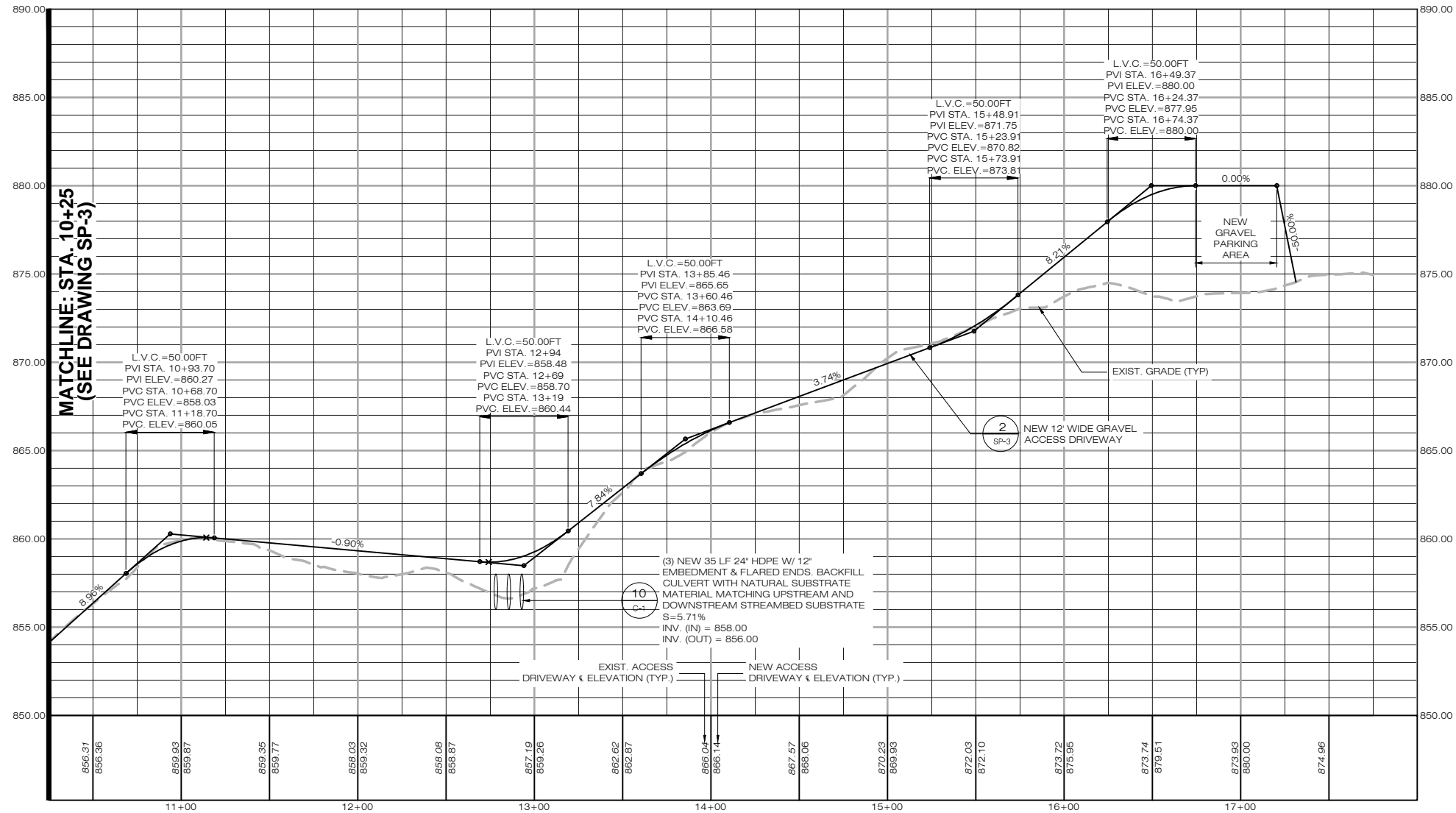
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		



**1 ACCESS DRIVEWAY PROFILE**  
SCALE: HORIZONTAL: 1" = 40'-0"  
VERTICAL: 1" = 4'-0"

**DESIGN PROFESSIONALS OF RECORD**

PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**

SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784

APT FILING NUMBER: CT283390

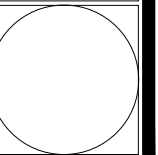
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

SHEET TITLE:

**ACCESS DRIVE PROFILE**

SHEET NUMBER:

**SP-4**





HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345



340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONALS OF RECORD**

PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**

SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784

APT FILING NUMBER: CT283390

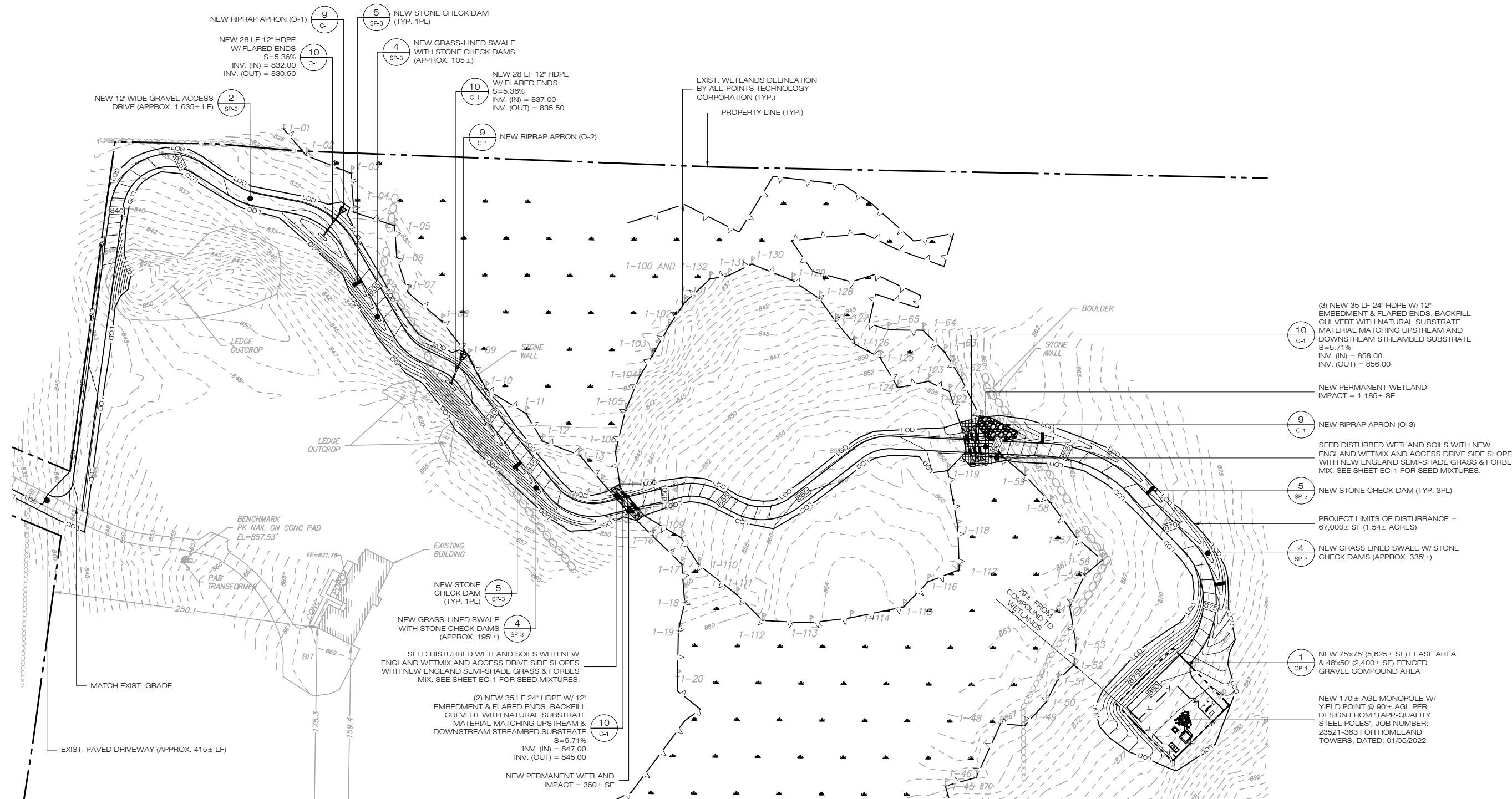
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

SHEET TITLE:

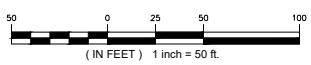
**GRADING & DRAINAGE PLAN**

SHEET NUMBER:

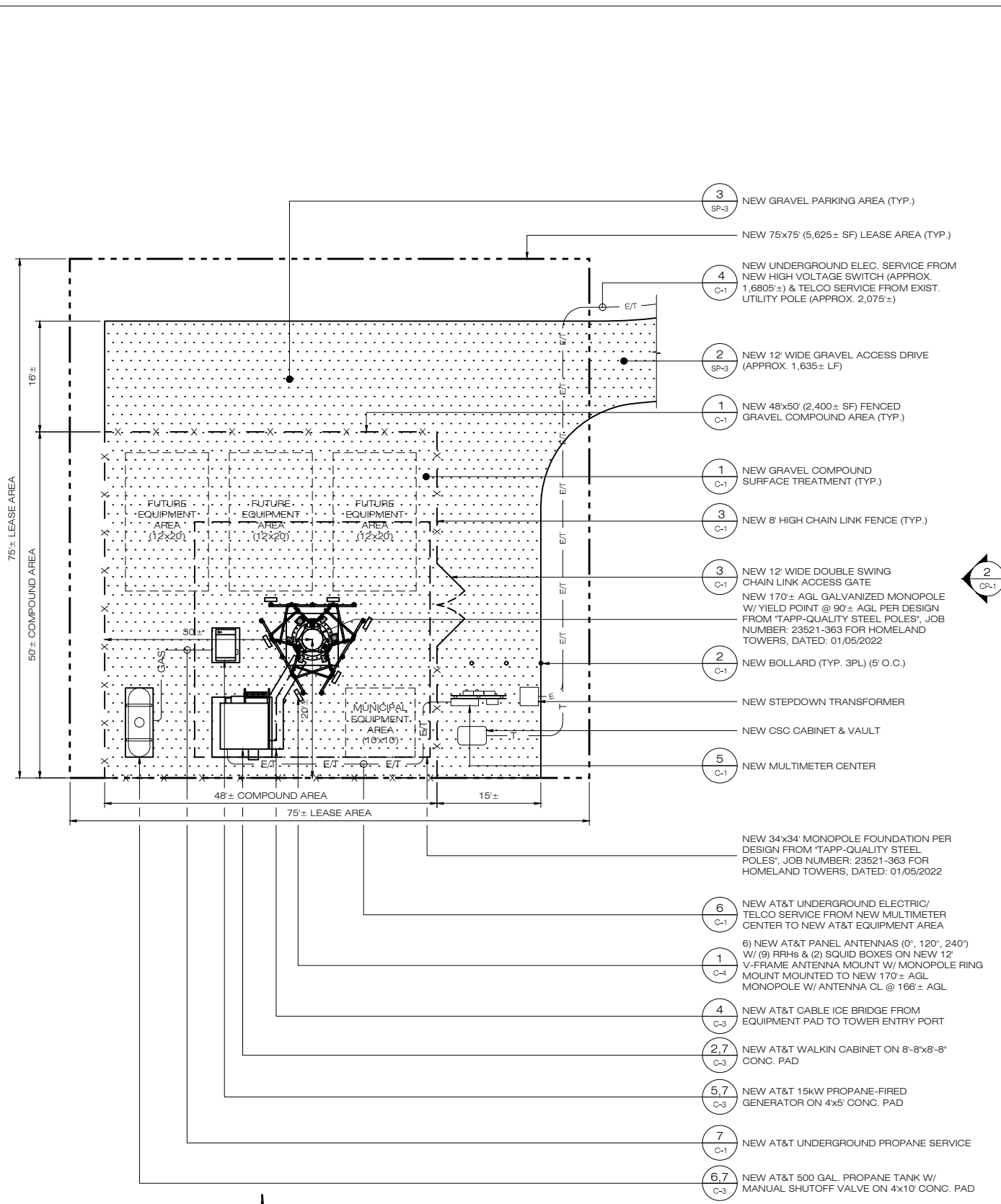
**GD-1**



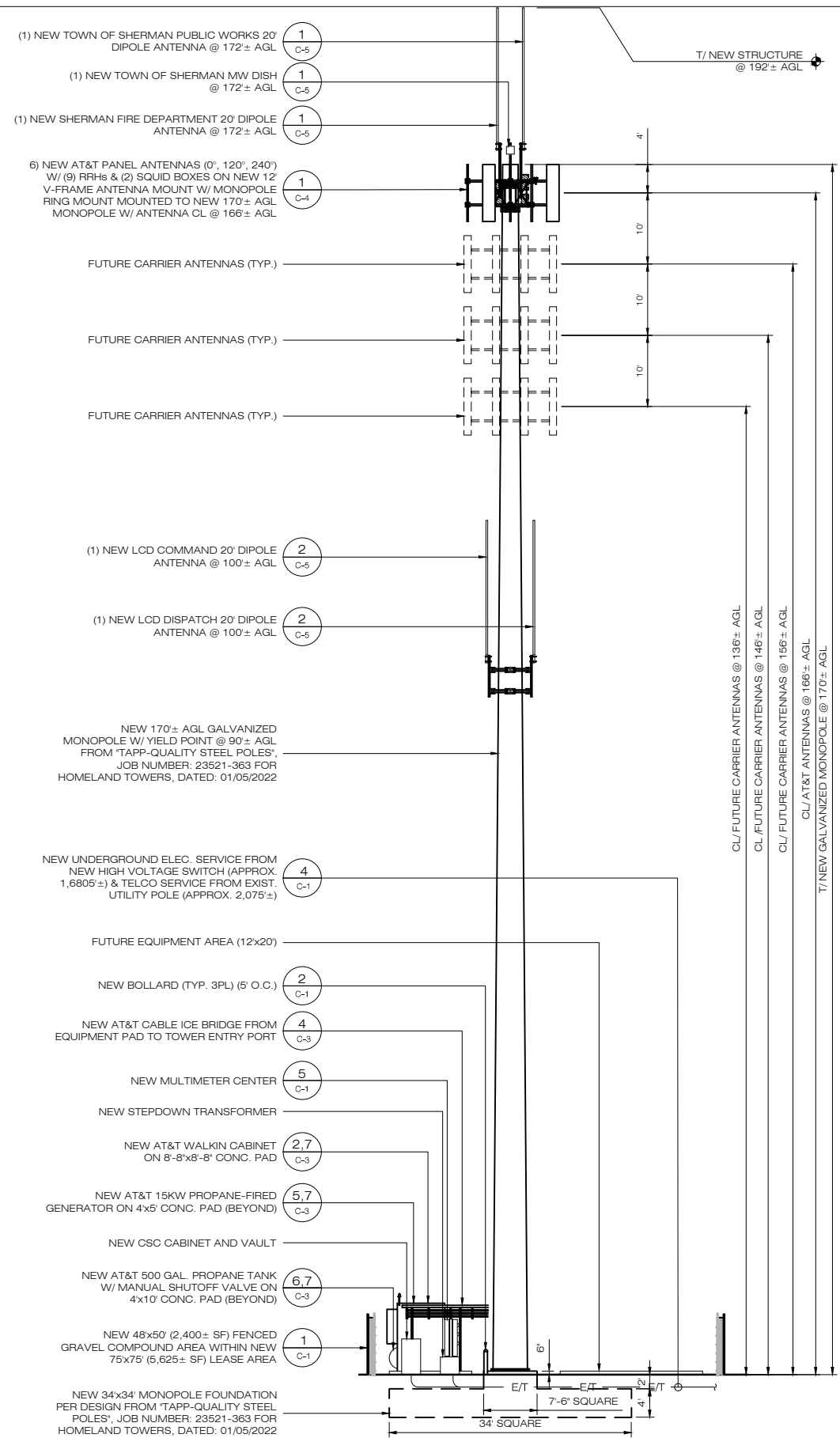
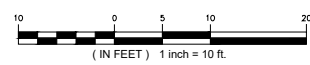
**1 GRADING & DRAINAGE PLAN**  
GD-1 SCALE: 1" = 50'-0"



MAP REFERENCES:  
1. "BOUNDARY & TOPOGRAPHIC SURVEY, 16 COOTE HILL ROAD, SHERMAN, CT", VB101; PREPARED BY LANGAN CT, INC., 55 LONG WHARF DRIVE, NEW HAVEN, CT 06511. DATED: AUGUST 27, 2020, REVISED JANUARY 26, 2021.



**1 COMPOUND PLAN**  
CP-1 SCALE: 1" = 10'-0"



**2 EAST ELEVATION**  
CP-1 SCALE: 1/2" = 1'-0"



**HOMELAND TOWERS, LLC**  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

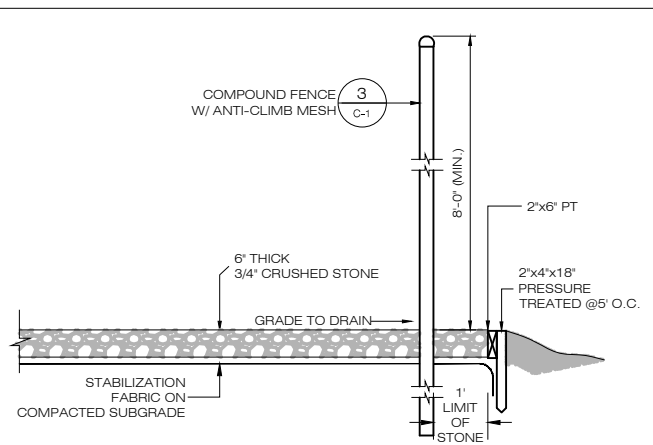
**DESIGN PROFESSIONALS OF RECORD**  
PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

**DEVELOPER: HOMELAND TOWERS, LLC**  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

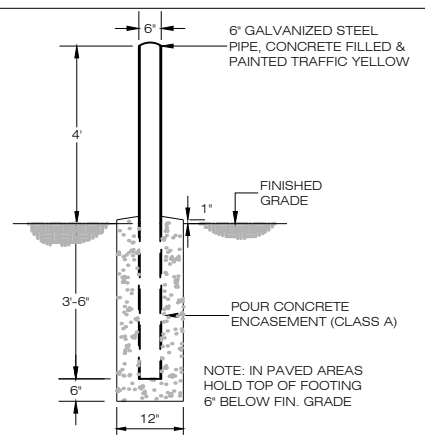
**HOMELAND TOWERS SHERMAN II**  
SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

**SHEET TITLE:**  
COMPOUND PLAN AND ELEVATION

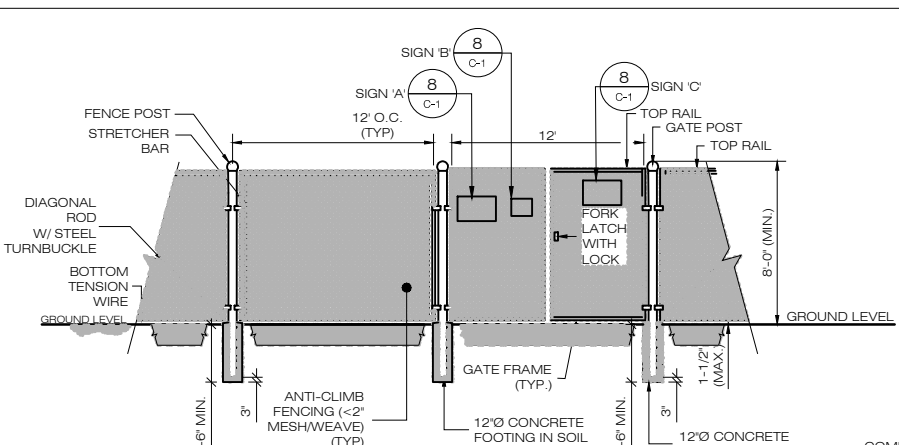
**SHEET NUMBER:**  
CP-1



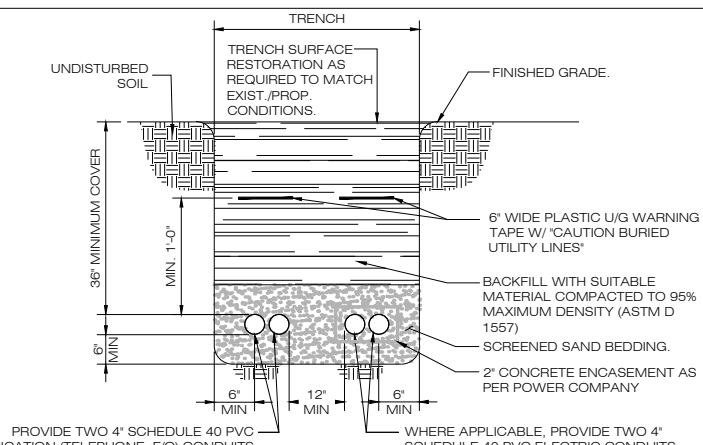
**1 COMPOUND DETAIL**  
C-1 SCALE: N.T.S.



**2 BOLLARD DETAIL**  
C-1 SCALE: N.T.S.



**3 CHAIN-LINK FENCING & FENCE GATE DETAIL**  
C-1 SCALE: N.T.S.

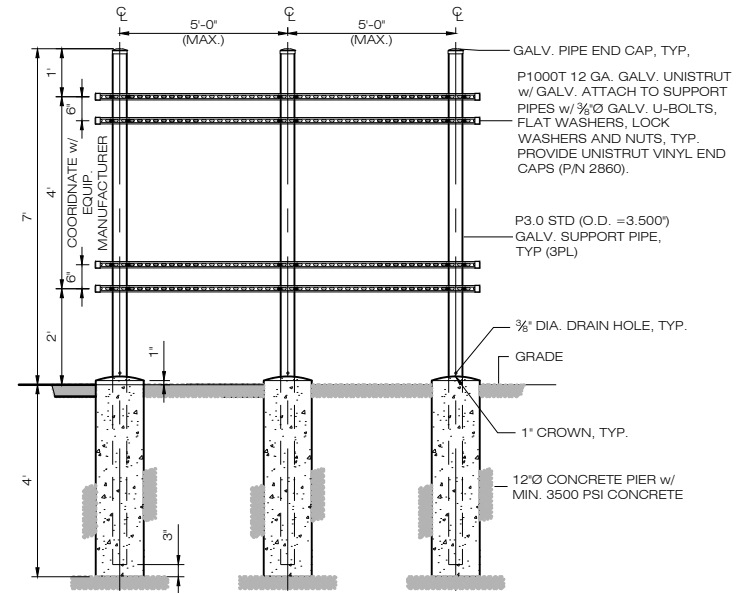


PROVIDE TWO 4" SCHEDULE 40 PVC COMMUNICATION (TELEPHONE, F/O) CONDUITS WITH 200 LB MIN. TENSILE STRENGTH PULL TAPE. TELEPHONE COMPANY WILL SUPPLY AND INSTALL TELEPHONE LINES.

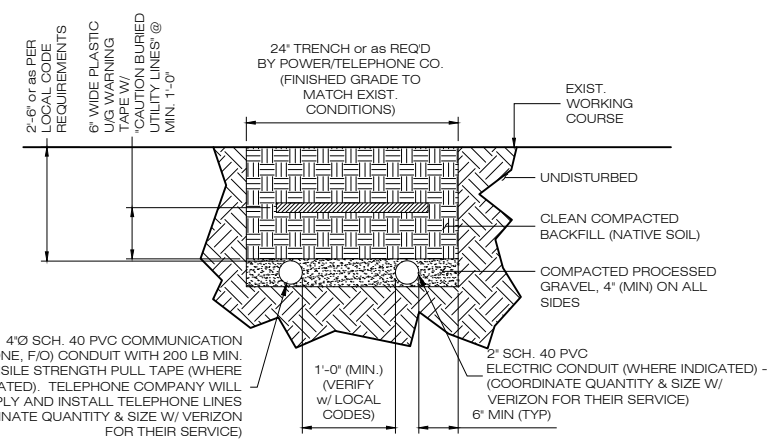
WHERE APPLICABLE, PROVIDE TWO 4" SCHEDULE 40 PVC ELECTRIC CONDUITS (1-ACTIVE FOR UTILITY PRIMARY FEEDER AND 1-SPARE WITH PULL ROPE)

NOTES:  
1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DERBIES OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED.  
2. CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.  
3. EXISTING PAVEMENT SHALL BE SAW-CUT PRIOR TO TRENCH EXCAVATION

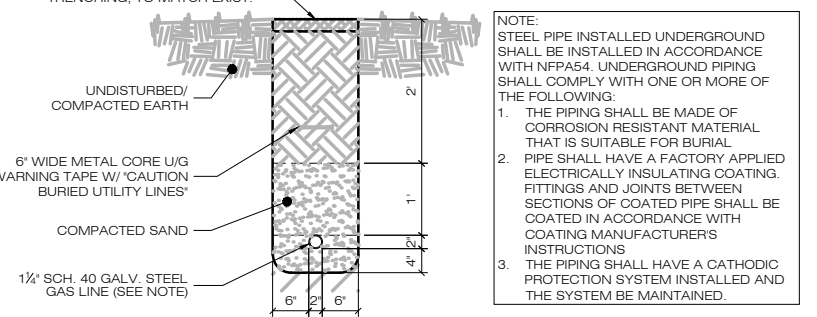
**4 PRIMARY UTILITY TRENCH**  
C-1 SCALE: N.T.S.



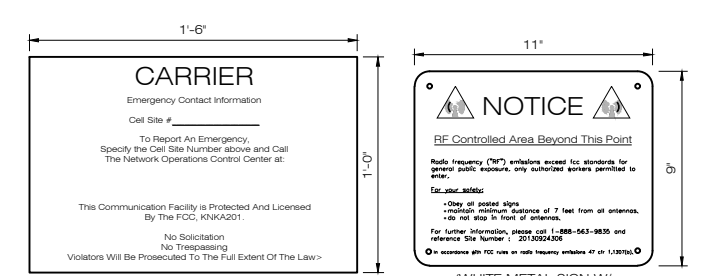
**5 UTILITY BACKBOARD FRAME DETAIL**  
C-1 SCALE: N.T.S.



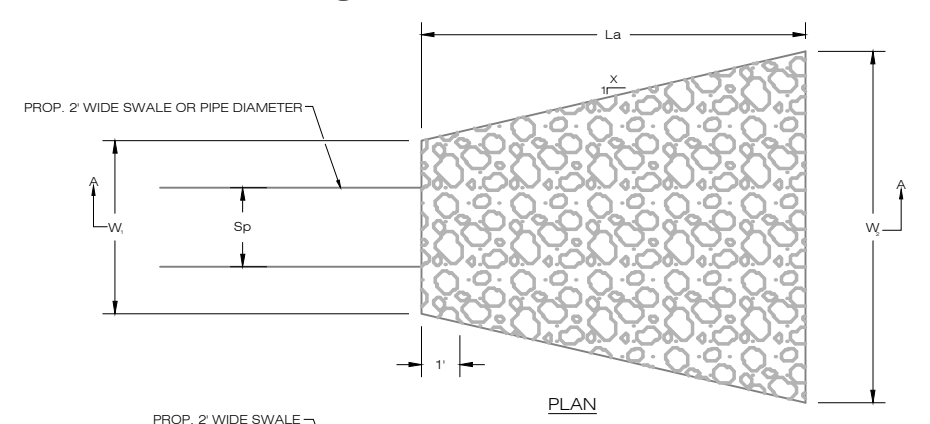
**6 SECONDARY TRENCH DETAIL**  
C-1 SCALE: N.T.S.



**7 PROPANE GAS TRENCH**  
C-1 SCALE: N.T.S.



**8 TYPICAL SIGNAGE**  
C-1 SCALE: N.T.S.



SECTION A-A

LEGEND  
Sp= INSIDE PIPE DIAMETER  
La= LENGTH OF RIPRAP APRON  
d= 12" MODIFIED RIPRAP  
18" INTERMEDIATE RIPRAP  
36" STANDARD RIPRAP

OUTLET	SWALE WIDTH/ PIPE DIAMETER Sp (FT)	APRON LENGTH La (FT)	APRON INITIAL WIDTH W1 (FT)	APRON TERMINAL WIDTH W2 (FT)	RIPRAP SPECIFICATION
O-1	1	5	3	6.5	MODIFIED
O-2	1	5	3	6.5	MODIFIED
O-3	2	19	6	25	MODIFIED

**9 RIPRAP APRON**  
C-1 SCALE: N.T.S.

RECOMMENDED MIN. TRENCH WIDTH

PIPE DIA.	MIN. TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

NOTES:  
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, 'STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS', LATEST EDITION.  
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.  
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.  
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS II, III OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm), 6" (150mm) FOR 30"-60" (750mm-900mm).  
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS II, III OR IV IN THE PIPE ZONE EXTENDING NOT LESS THAN 6' ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.  
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

**10 HDPE STORM DRAINAGE TRENCH DETAIL**  
C-1 SCALE: N.T.S.

**HOMELAND TOWERS, LLC**  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

D&M DOCUMENTS

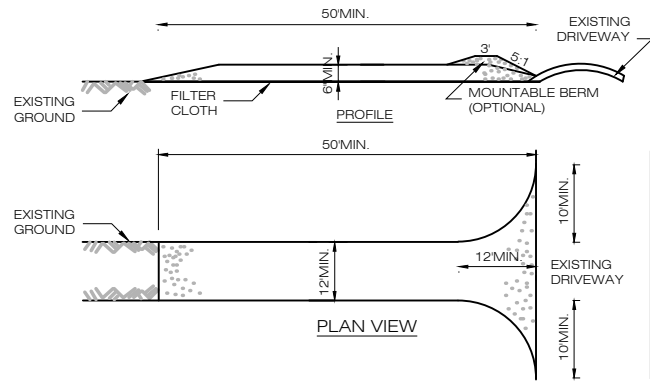
NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD  
**PROF. ROBERT C. BURNS P.E.**  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**  
SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

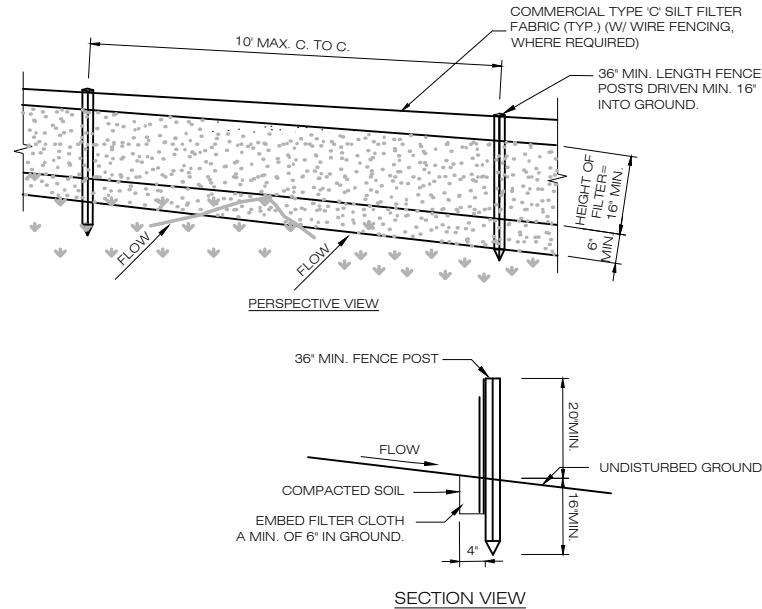
SHEET TITLE: **SITE DETAILS**  
SHEET NUMBER: **C-1**



**CONSTRUCTION SPECIFICATIONS:**

- STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
- GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

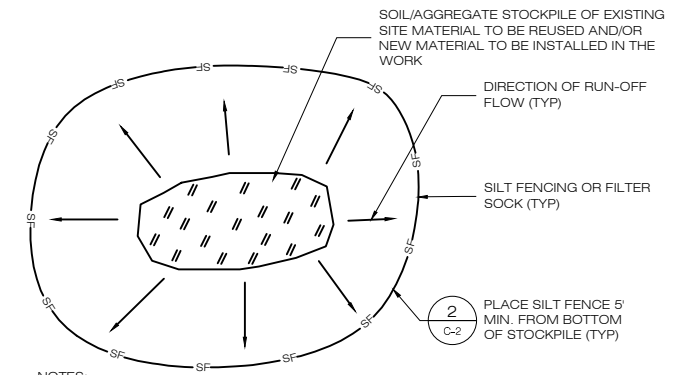
**1 (CE) CONSTRUCTION ENTRANCE DETAIL**  
SCALE : N.T.S.



**CONSTRUCTION SPECIFICATIONS**

- POSTS SHALL BE STEEL EITHER 'T' OR 'U' TYPE OR HARDWOOD.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
- PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN 'BULGES' DEVELOP IN THE SILT FENCE.

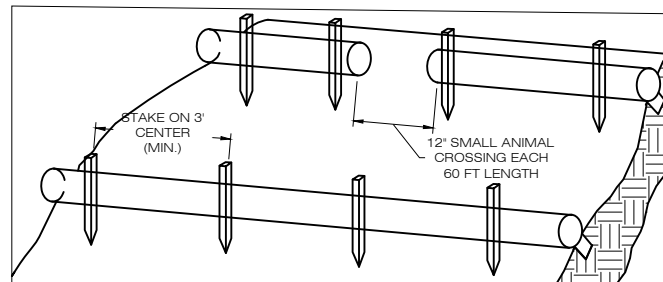
**2 GEOTEXTILE SILT FENCE DETAIL**  
SCALE : N.T.S.



**NOTES:**

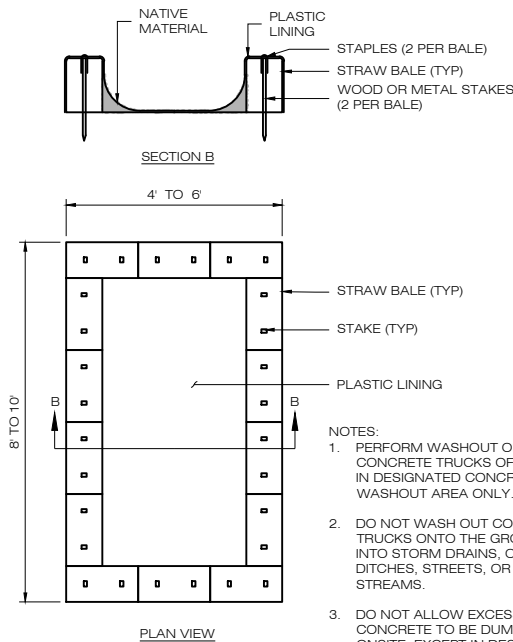
- ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
- SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
- RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
- STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- ANY SOIL IN STOCKPILES IN EXCESS OF SEVEN (7) DAYS SHALL BE SEEDED AND MULCHED OR COVERED.

**3 TEMPORARY STOCKPILE DETAIL**  
SCALE : N.T.S.



- BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2'-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP SLOPE FROM THE ANCHOR TRENCH.
- PLACE THE SOCK IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE SOCK ON THE UPHILL SIDE. SOCKS SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT SOCKS TIGHTLY ABUT. EVERY 60 FT THE SOCK ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT SOCK.
- SECURE THE SOCK WITH 18-24" (45.7-61 CM) STAKES EVERY 3-4' (0.9 - 1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK LEAVING AT LEAST 2-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE SOCK. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

**4 COMPOST FILTER SOCK SEDIMENTATION CONTROL BARRIER**  
SCALE : N.T.S.



**NOTES:**

- PERFORM WASHOUT OF CONCRETE TRUCKS OFFSITE OR IN DESIGNATED CONCRETE WASHOUT AREA ONLY.
- DO NOT WASH OUT CONCRETE TRUCKS ONTO THE GROUND, OR INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
- DO NOT ALLOW EXCESS CONCRETE TO BE DUMPED ONSITE, EXCEPT IN DESIGNATED CONCRETE WASHOUT AREA.

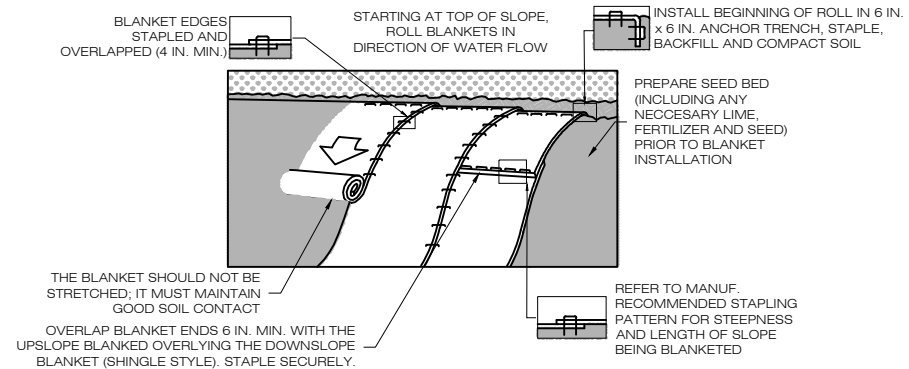
**5 CONCRETE WASHOUT DETAIL**  
SCALE : N.T.S.

**SEQUENCE OF CONSTRUCTION**

- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPs EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12' APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12' PORTION OF RECPs BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12' APART ACROSS THE WIDTH OF THE RECPs.
- ROLL THE RECPs DOWN HORIZONTALLY ACROSS THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
- THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH APPROXIMATELY 2' - 5' OVERLAP DEPENDING ON THE RECPs TYPE.
- CONSECUTIVE RECPs SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12' APART ACROSS ENTIRE RECPs WIDTH.

**NOTES:**

- PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
- BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.



**6 EROSION CONTROL BLANKET STEEP SLOPES**  
SCALE : N.T.S.

**HOMELAND TOWERS, LLC**  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONALS OF RECORD**  
PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

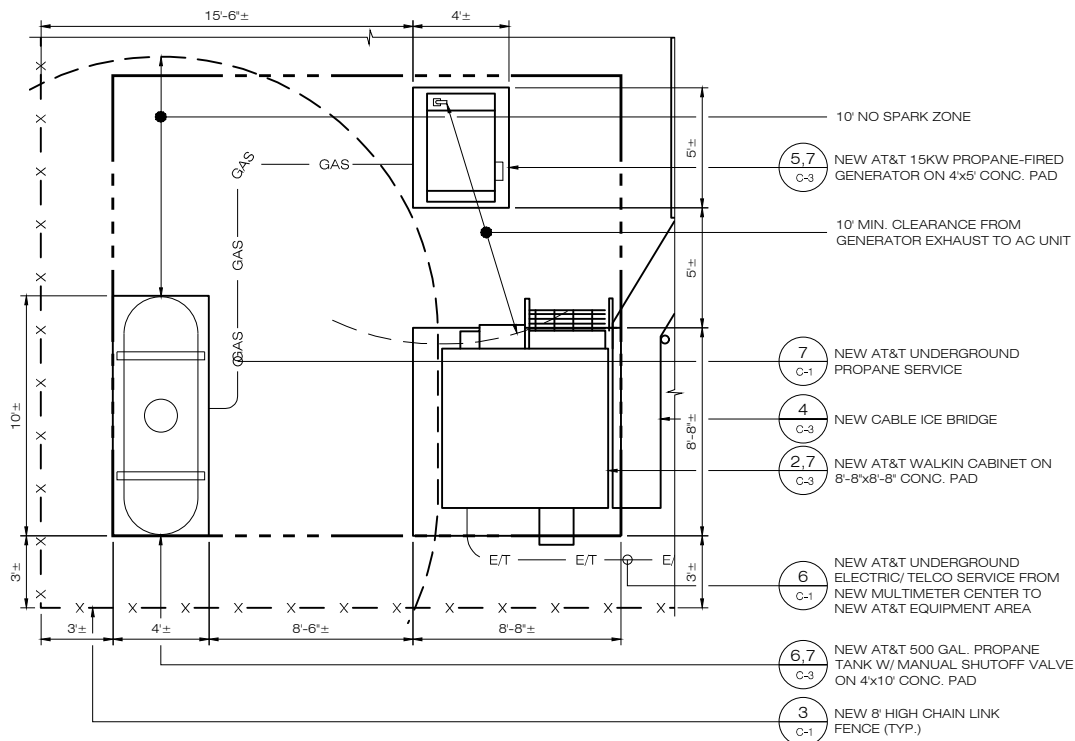
**DEVELOPER: HOMELAND TOWERS, LLC**  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**  
SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

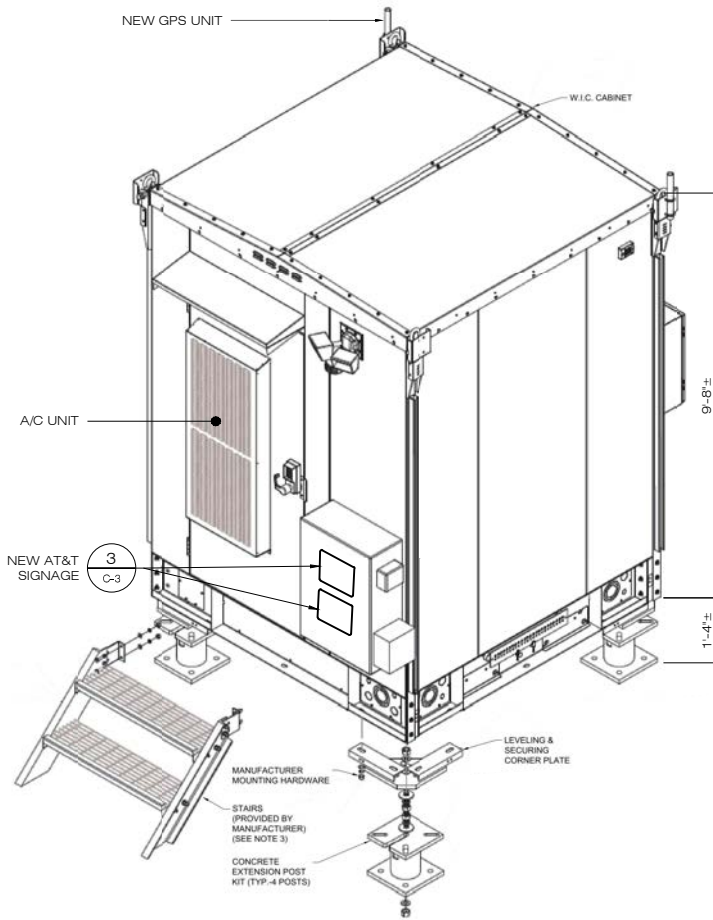
**SHEET TITLE:**  
SITE DETAILS

**SHEET NUMBER:**  
C-2

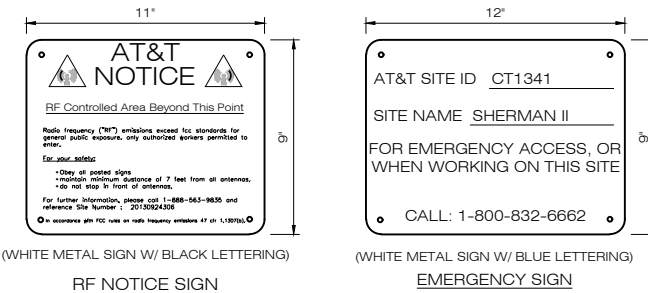




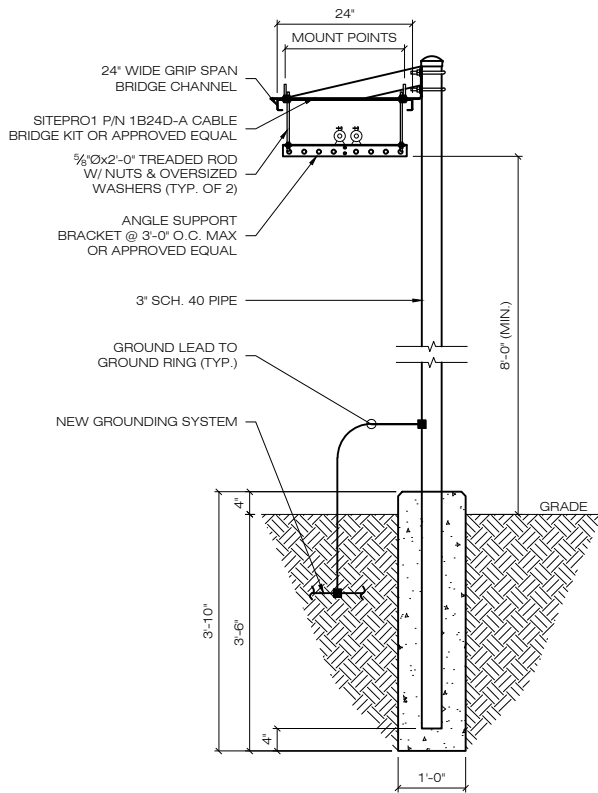
**1 AT&T EQUIPMENT AREA**  
C-3 SCALE: 1/4" = 1'-0"



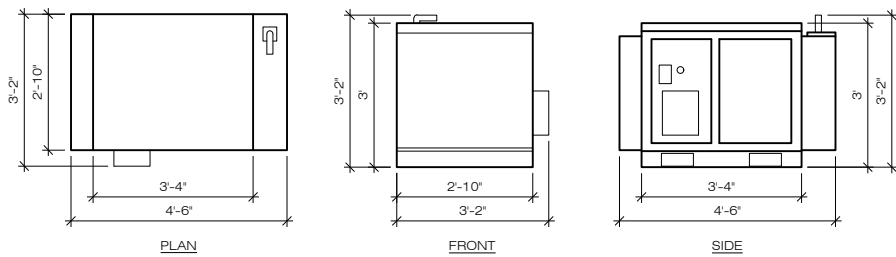
**2 AT&T WALKIN CABINET**  
C-3 SCALE: N.T.S.



**3 TYPICAL SIGNAGE**  
C-3 SCALE: N.T.S.

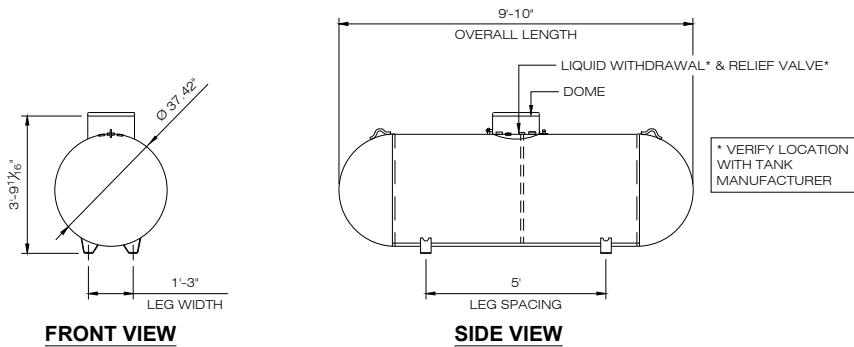


**4 CABLE BRIDGE DETAIL**  
C-3 SCALE: N.T.S.



**POLAR POWER INC.**  
15kW PROPANE DC POWER GENERATOR  
MODEL #8340-100-LP-15-03, 120/240V, 1Ø, 60Hz  
AL ENCLOSURE - KUBOTA DG972 W/ SUMP  
DRY WEIGHT = 608lbs  
CONFORMS TO UL STD 2000  
CERTIFIED TO CSA STD C22.2 No. 100

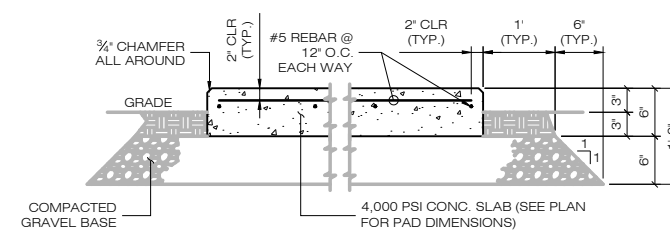
**5 GENERATOR**  
C-3 SCALE: N.T.S.



**6 ABOVE GROUND PROPANE TANK DETAIL**  
C-3 SCALE: N.T.S.

500 USWG AMSE VIII, DIV. 1 ABOVE GROUND LPG TANK

NOTE: PROVIDE TANK MANUFACTURER SHOP DRAWING FOR REVIEW BY ENGINEER OF RECORD PRIOR TO PURCHASE



**7 CONCRETE PAD**  
C-3 SCALE: N.T.S.

**HOMELAND TOWERS, LLC**  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONALS OF RECORD**  
PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

**DEVELOPER: HOMELAND TOWERS, LLC**  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**  
SITE ADDRESS: SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

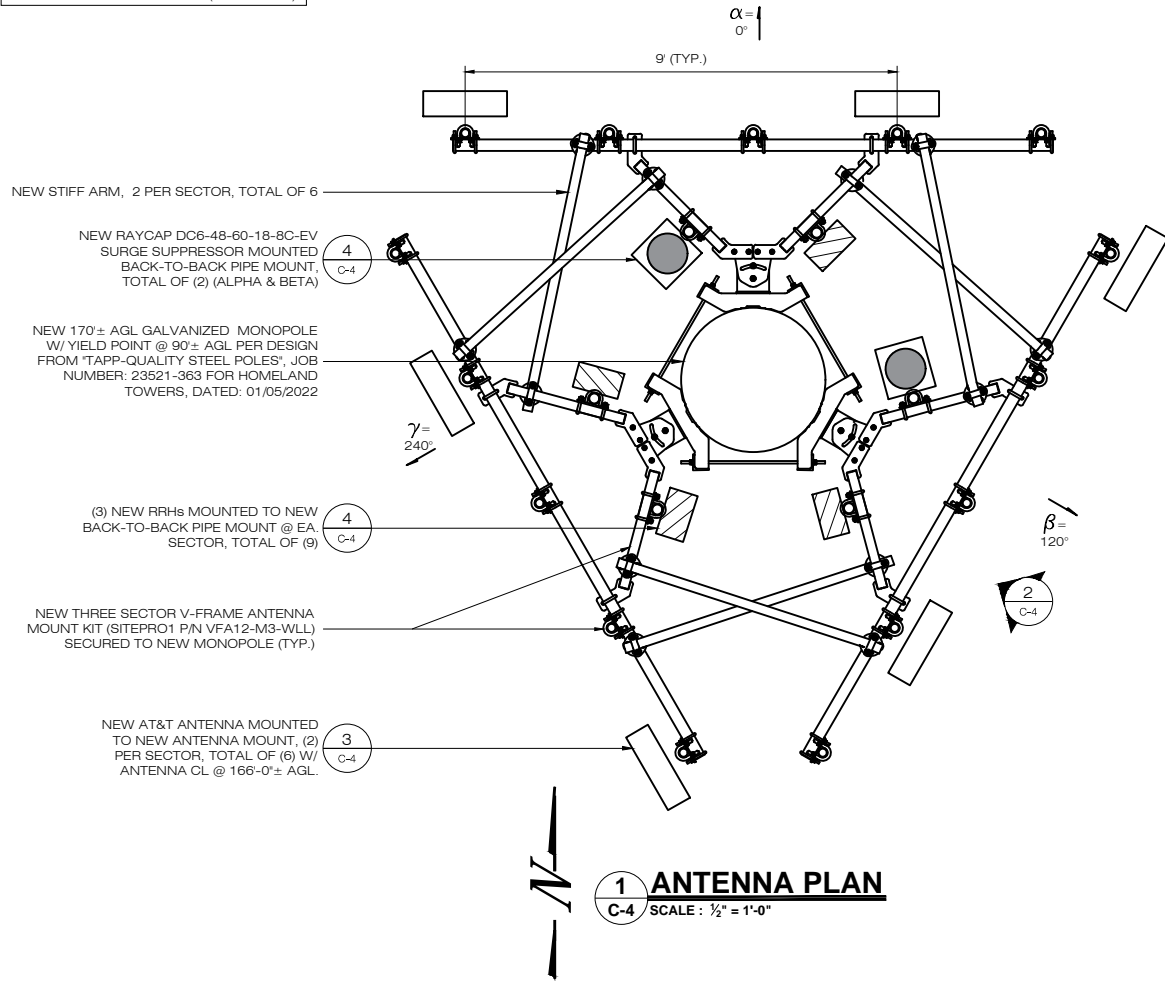
**SHEET TITLE:**  
AT&T EQUIPMENT PLAN & DETAILS

**SHEET NUMBER:**  
C-3



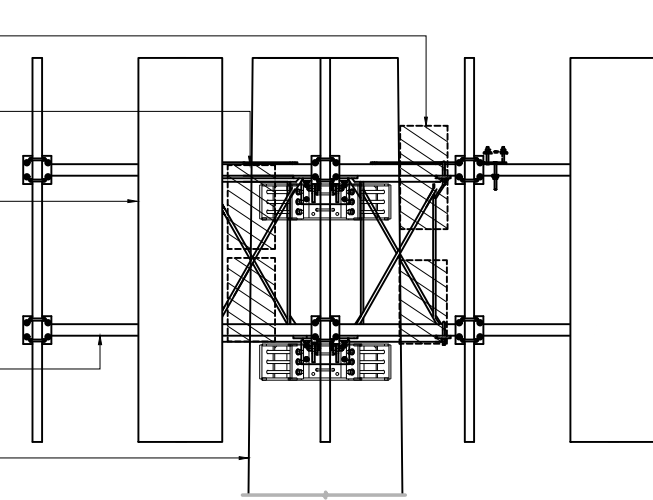
**PAINTING NOTE:**  
ALL ANTENNAS, MOUNTING ASSEMBLIES & APPURTENANCES TO BE PAINTED THE SAME COLOR AS THE TOWER (GRAY-BLUE)

**NOTE:**  
CONTRACTOR TO VERIFY DIAMETER OF MONOPOLE PRIOR TO ORDERING V-FRAME MOUNT & RING MOUNT

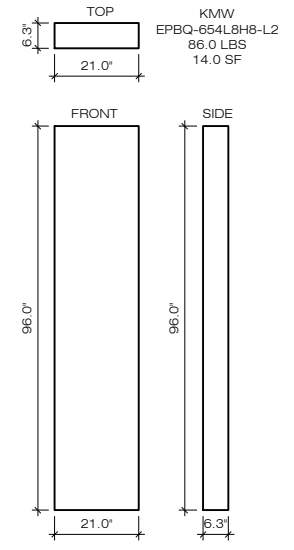


**1 ANTENNA PLAN**  
C-4 SCALE: 1/2" = 1'-0"

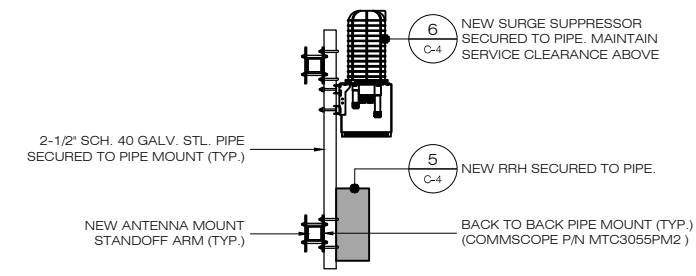
- NEW RAYCAP DC6-48-60-18-8C-EV SURGE SUPPRESSOR MOUNTED BACK-TO-BACK PIPE MOUNT, TOTAL OF (2) (ALPHA & BETA) 4 C-4
- (3) NEW RRHs MOUNTED TO NEW BACK-TO-BACK PIPE MOUNT @ EA. SECTOR, TOTAL OF (9) 4 C-4
- (2) NEW AT&T ANTENNA MOUNTED TO NEW MOUNTING ASSEMBLY AT EACH SECTOR, TOTAL OF (6) 3 C-4
- ANTENNA @ 166'-0" ± AGL
- NEW THREE SECTOR V-FRAME ANTENNA MOUNT KIT (SITEPRO1 P/N VFA12-M3-WLL) FOR (6) NEW AT&T PANEL ANTENNAS CL @ 166' ± AGL
- NEW 170' ± AGL GALVANIZED MONOPOLE W/ YIELD POINT @ 90' ± AGL PER DESIGN FROM "TAPP-QUALITY STEEL POLES", JOB NUMBER: 23521-363 FOR HOMELAND TOWERS, DATED: 01/05/2022



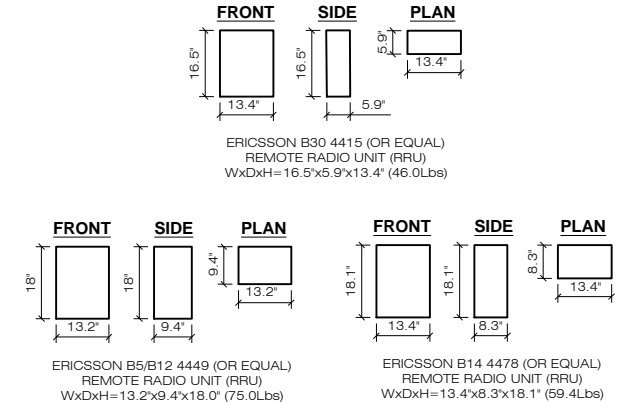
**2 ANTENNA MOUNTING DETAIL**  
C-4 SCALE: 1/2" = 1'-0"



**3 ANTENNA DETAIL**  
C-4 SCALE: 1/2" = 1'-0"

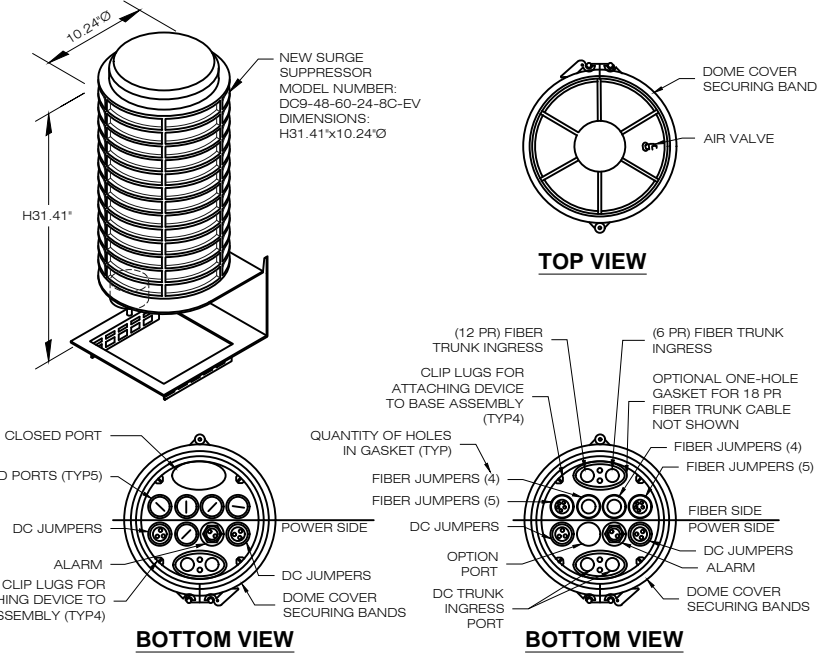


**4 MDB/RRH MOUNT**  
C-4 SCALE: 1/2" = 1'-0"



**5 RRU EQUIPMENT**  
C-4 SCALE: 1/2" = 1'-0"

**NOTES:**  
1. DIMENSIONS SUBJECT TO CHANGE BASED UPON AVAILABILITY AT TIME OF CONSTRUCTION.  
2. MANUFACTURER'S RECOMMENDED RRH CLEARANCES: FRONT: 36"; SIDES: 12"; BOTTOM: 24"  
3. SFPs ARE PROTOCOL SPECIFIC. THE CONNECTIONS BETWEEN RRHs AND BBUs ARE CPRI CONNECTIONS, AND REQUIRE CPRI SFP (ON BOTH ENDS). THE CONNECTIONS BETWEEN BBUs AND 7705 ARE ETHERNET AND REQUIRE ETHERNET SFP (ON BOTH ENDS.)



**NOTES:**  
1. MOUNT PER MANUFACTURER'S SPECIFICATIONS.  
2. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC TO 1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP

**6 TYPICAL SURGE SUPPRESSOR**  
C-4 SCALE: N.T.S.

**HOMELAND TOWERS, LLC**  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345

**at&t**  
340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960

**ALL-POINTS TECHNOLOGY CORPORATION**  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONALS OF RECORD**  
PROF: ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

**DEVELOPER: HOMELAND TOWERS, LLC**  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**  
SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784  
APT FILING NUMBER: CT283390  
DATE: 01/18/22 DRAWN BY: CSH  
CHECKED BY: RCB

**SHEET TITLE:**  
AT&T ANTENNA PLAN & DETAILS

**SHEET NUMBER:**  
C-4



HOMELAND TOWERS, LLC  
 9 HARMONY STREET  
 2nd FLOOR  
 DANBURY, CT 06810  
 (203) 297-6345



340 MOUNT KEMBLE AVENUE  
 MORRISTOWN, NEW JERSEY 07960

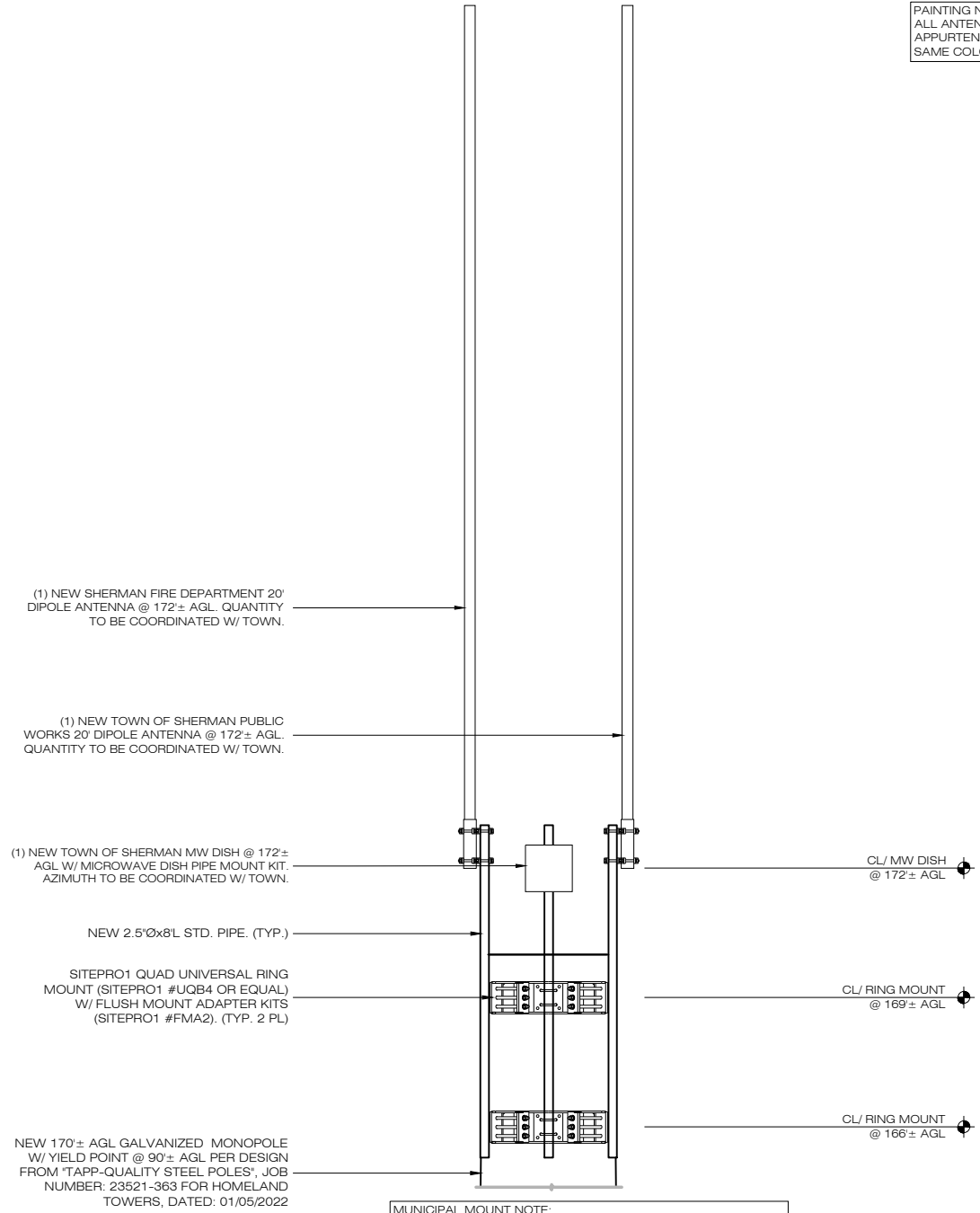


567 VAUXHALL STREET EXTENSION - SUITE 311  
 WATERFORD, CT 06385 PHONE: (860)-663-1697  
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

**D&M DOCUMENTS**

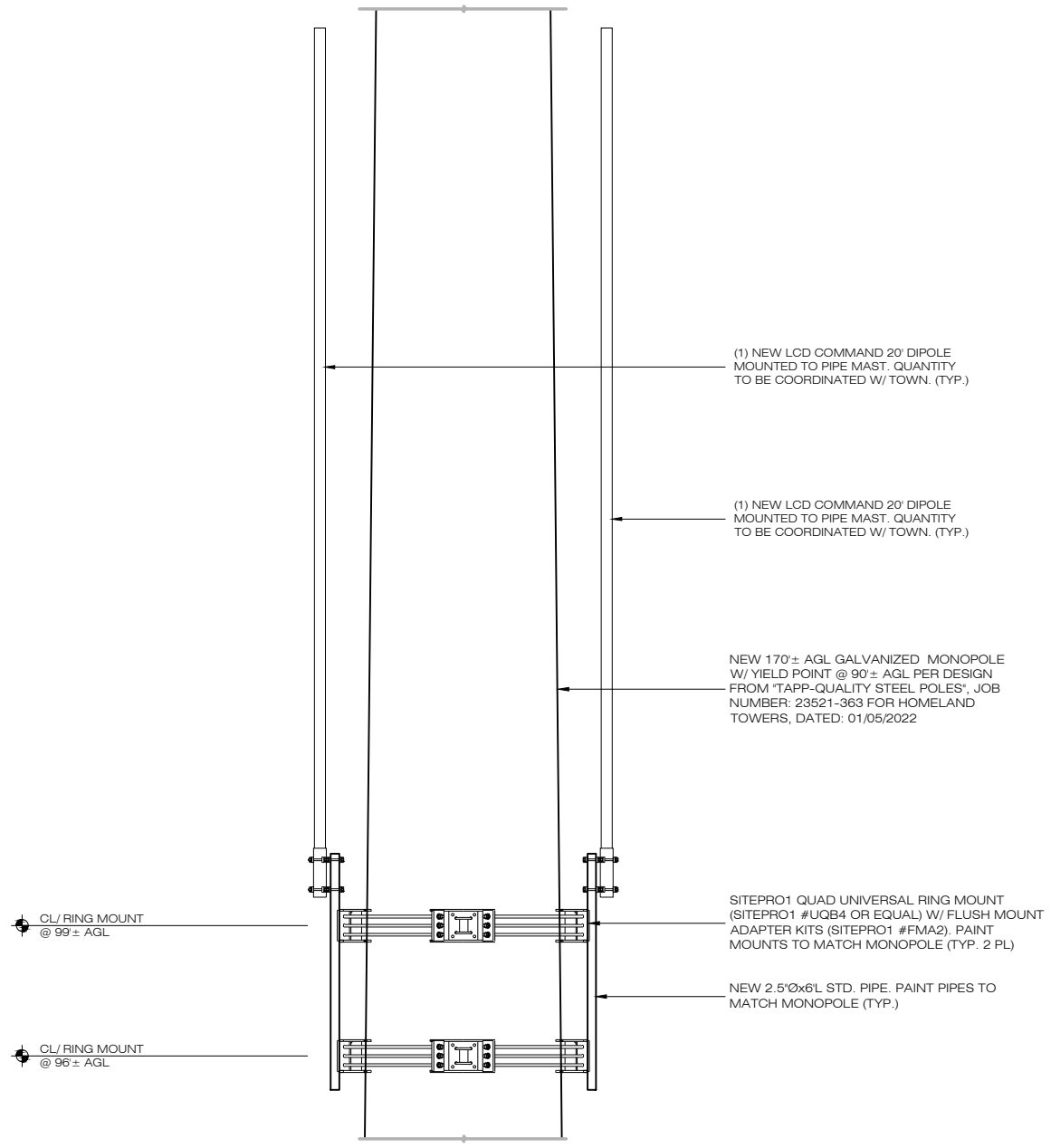
NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

PAINTING NOTE:  
 ALL ANTENNAS, MOUNTING ASSEMBLIES &  
 APPURTENANCES TO BE PAINTED THE  
 SAME COLOR AS THE TOWER (GRAY-BLUE)



MUNICIPAL MOUNT NOTE:  
 THE MUNICIPAL RING MOUNTS TO BE ROTATED 60° TO THE  
 AT&T ANTENNA MOUNT TO ALLOW THE VERTICAL PIPES TO  
 PASS THROUGH THE AT&T ANTENNA MOUNT UNOBSTRUCTED.

**1 MUNICIPAL ANTENNA MOUNT (UPPER)**  
 C-5 SCALE: 1/2" = 1'-0"



**2 MUNICIPAL ANTENNA MOUNT (LOWER)**  
 C-5 SCALE: 1/2" = 1'-0"

**DESIGN PROFESSIONALS OF RECORD**

PROF: ROBERT C. BURNS P.E.  
 COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
 ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC  
 ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

**HOMELAND TOWERS SHERMAN II**

SITE 16 COOTE HILL ROAD  
 ADDRESS: SHERMAN, CT 06784

APT FILING NUMBER: CT283390

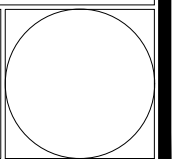
DATE: 01/18/22 DRAWN BY: CSH  
 CHECKED BY: RCB

SHEET TITLE:

**MUNICIPAL ANTENNA PLANS**

SHEET NUMBER:

**C-5**



# EROSION CONTROL NOTES

## EROSION AND SEDIMENT CONTROL PLAN NOTES

1. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF SHERMAN, PERMITTEE, AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
2. THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. SEE CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
3. A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
4. THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANNER.
6. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
7. ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
8. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
9. CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXISTING.
10. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.
11. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
12. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE CONFORMING TO THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.
13. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
14. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
15. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
16. VEGETATIVE ESTABLISHMENT SHALL OCCUR ON ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
17. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.
18. SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX, OR APPROVED EQUAL BY OWNER.

## SEDIMENT & EROSION CONTROL NARRATIVE

1. THE PROJECT INCLUDES THE INSTALLATION OF A 170± AGL GALVANIZED MONOPOLE WITH ASSOCIATED GROUND MOUNTED EQUIPMENT. ALL DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT.
 

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

  - A. CONSTRUCTION OF 170± AGL MONOPOLE.
  - B. CONSTRUCTION OF 48x50' (2,400± SF) FENCED EQUIPMENT COMPOUND W/ GRAVEL SURFACE TREATMENT AND ASSOCIATED UTILITIES.
  - C. CONSTRUCTION OF 1,635± 12' WIDE GRAVEL ACCESS DRIVE.
  - D. CONSTRUCTION OF 8'-8x8'-8" CONCRETE EQUIPMENT PAD, 4x8' CONCRETE EQUIPMENT PAD WITH 500 GALLON PROPANE TANK.
  - E. THE STABILIZATION OF PVIOUSLY DISTURBED AREAS WITH PERMANENT GRASS TREATMENTS.
2. FOR THIS PROJECT, THERE ARE APPROXIMATELY 67,000± SF OF THE SITE BEING DISTURBED.
3. A GEOTECHNICAL ENGINEERING REPORT HAS BEEN COMPLETED FOR THIS PROJECT AND WILL BE AVAILABLE UNDER SEPARATE COVER.
4. IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 12 WEEKS.
5. REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
6. MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
7. DETAILS FOR THE TYPICAL EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON PLAN SHEET C-2 OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
8. CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION AREA:
  - A. STAGED CONSTRUCTION;
  - B. MINIMIZE THE DISTURBED AREAS DURING CONSTRUCTION;
  - C. STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE WITH TEMPORARY OR PERMANENT MEASURES;
  - D. MINIMIZE IMPERVIOUS AREAS;
  - E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.

## SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. CONTRACTOR TO HIRE SURVEYOR FOR PROJECT STAKEOUT AS NEEDED THROUGHOUT CONSTRUCTION ACTIVITIES.

1. CONTACT THE OWNER TO SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE TREES TO BE REMOVED IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
2. CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
3. NOTIFY THE OWNER AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT. NOTIFY CALL BEFORE YOU DIG CONNECTICUT AT (800) 922-4455.
4. CLEAR AND GRUB AS REQUIRED, TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION.
5. INSTALL CONSTRUCTION ENTRANCE.
6. PERFORM THE REMAINING CLEARING AND GRUBBING AS NECESSARY. REMOVE CUT WOOD AND STUMPS. CHIP BRUSH AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE.
7. TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
8. EXCAVATE AND GRADE NEW ACCESS DRIVE, DRAINAGE PIPES & WETLAND CROSSINGS.
9. EXCAVATE AND ROUGH GRADE EQUIPMENT COMPOUND.
10. EXCAVATE FOR TOWER FOUNDATION & EQUIPMENT PADS.
11. FINALIZE ACCESS ROAD GRADES.
12. PREPARE SUBGRADE AND INSTALL FORMS, STEEL REINFORCING, & CONCRETE FOR TOWER FOUNDATION & EQUIPMENT PADS.
13. INSTALL BURIED GROUND RINGS, GROUND RODS, GROUND LEADS, UTILITY CONDUITS & UTILITY EQUIPMENT.
14. BACKFILL TOWER FOUNDATION.
15. ERECT MONOPOLE.
16. INSTALL TELECOMMUNICATIONS EQUIPMENT ON TOWER & COMPOUND.
17. INSTALL COMPOUND GRAVEL SURFACES.
18. FINALIZE GRADES. INSTALL GRAVEL SURFACES.
19. INSTALL FENCING.
20. CONNECT GROUNDING LEADS & LIGHTNING PROTECTION
21. FINAL GRADE AROUND COMPOUND.
22. LOAM & SEED DISTURBED AREAS OUTSIDE COMPOUND, AS REQUIRED.
23. TEST ALL NEW EQUIPMENT.
24. AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE OWNER, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.
25. PERFORM FINAL PROJECT CLEANUP.

THE ESTIMATED TIME FOR THE COMPLETION OF THE WORK IS APPROXIMATELY TWELVE (12) WEEKS. THE EXACT PROCESS MAY VARY DEPENDING ON THE CONTRACTORS & SUBCONTRACTORS AVAILABILITY TO COMPLETE WORK & WEATHER DELAYS.

## CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR

### E&S MEASURE

CONSTRUCTION ENTRANCE

HAY BALES

SILT FENCE/FILTER SOCKS

SILT SACKS

TOPSOIL/BORROW STOCKPILES

WATER BARS

TEMPORARY DIVERSION DITCHES

TEMPORARY SEDIMENT TRAPS/BASINS

TEMPORARY SOIL PROTECTION

### INSPECTION SCHEDULE

DAILY

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

DAILY

DAILY

DAILY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

### MAINTENANCE REQUIRED

PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.

REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE BALE.

REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.

REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE SACK.

REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.

REPAIR/RESHAPE AS NECESSARY. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE WATER BAR.

REPAIR/RESHAPE AS NECESSARY. REVIEW CONDITIONS IF REPETITIVE FAILURES OCCUR.

REMOVE SEDIMENT WHEN IT REACHES 1/2 OF THE MINIMUM REQUIRED WET STORAGE VOLUME.

REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

## NEW ENGLAND WETLAND PLANTS, INC

820 WEST STREET, AMHERST, MA 01002  
 PHONE: 413-548-8000 FAX 413-549-4000  
 EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

### New England Semi-Shade Grass and Forbs Mix

Botanical Name	Common Name	Indicator
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Elymus canadensis</i>	Canada Wild Rye	FACU+
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Liatris spicata</i>	Spiked Gayfeather/Marsh Blazing Star	FAC+
<i>Onoclea sensibilis</i>	Sensitive Fern	FACW
<i>Aster prenanthoides (Symphyotrichum prenanthoide</i>	Zigzag Aster	FAC
<i>Eupatorium fistulosum (Eutrochium fistulosum)</i>	Hollow-Stem Joe Pye Weed	FACW
<i>Eupatorium perfoliatum</i>	Boneset	FACW
<i>Juncus tenuis</i>	Path Rush	FAC
PRICE PER LB. \$87.00 MIN. QUANTITY 1 LBS. TOTAL: \$87.00		APPLY: 30 LBS/ACRE :1450 sq ft/lb

The New England Semi Shade Grass & Forb Mix contains a broad spectrum of native grasses and forbs that will tolerate semi-shade and edge conditions. Always apply on clean bare soil. The mix may be applied by hydro-seeding, by mechanical spreader, or on small sites it can be spread by hand. Lightly rake, or roll to ensure proper seed to soil contact. Best results are obtained with a Spring seeding. Late Spring and early Summer seeding will benefit with a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering will be required. Late Fall and Winter dormant seeding require an increase in the seeding rate. Fertilization is not required unless the soils are particularly infertile. Preparation of a clean weed free seed bed is necessary for optimal results.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.

## NEW ENGLAND WETLAND PLANTS, INC

820 WEST STREET, AMHERST, MA 01002  
 PHONE: 413-548-8000 FAX 413-549-4000  
 EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

### New England Wetmix (Wetland Seed Mix)

Botanical Name	Common Name	Indicator
<i>Carex vulpinoidea</i>	Fox Sedge	OBL
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW
<i>Carex lurida</i>	Lurid Sedge	OBL
<i>Carex lupulina</i>	Hop Sedge	OBL
<i>Poa palustris</i>	Fowl Bluegrass	FACW
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Scirpus atrovirens</i>	Green Bulrush	OBL
<i>Asclepias incarnata</i>	Swamp Milkweed	OBL
<i>Carex crinita</i>	Fringed Sedge	OBL
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Juncus effusus</i>	Soft Rush	FACW+
<i>Aster lateriflorus (Symphyotrichum lateriflorem)</i>	Starved/Calico Aster	FACW
<i>Iris versicolor</i>	Blue Flag	OBL
<i>Glyceria grandis</i>	American Mannagrass	OBL
<i>Mimulus ringens</i>	Square Stemmed Monkey Flower	OBL
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL
PRICE PER LB. \$135.00 MIN. QUANTITY 1 LBS. TOTAL: \$135.00		APPLY: 18 LBS/ACRE :2500 sq ft/lb

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months the seed mix will germinate the following spring. During the first season of growth several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended. New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.



HOMELAND TOWERS, LLC  
 9 HARMONY STREET  
 2nd FLOOR  
 DANBURY, CT 06810  
 (203) 297-6345



340 MOUNT KEMBLE AVENUE  
 MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311  
 WATERFORD, CT 06385 PHONE: (860)-663-1697  
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

## D&M DOCUMENTS

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

## DESIGN PROFESSIONALS OF RECORD

PROF: ROBERT C. BURNS P.E.  
 COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
 ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC  
 ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

## HOMELAND TOWERS SHERMAN II

SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784

APT FILING NUMBER: CT283390

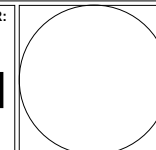
DATE: 01/18/22	DRAWN BY: CSH
	CHECKED BY: RCB

## SHEET TITLE:

## EROSION CONTROL NOTES

SHEET NUMBER:

EC-1





# ENVIRONMENTAL NOTES - RESOURCES PROTECTION MEASURES

## WETLAND, WATERCOURSES, AND RARE SPECIES PROTECTION PROGRAM AND INVASIVE SPECIES CONTROL PLAN

AS A RESULT OF THE PROJECT'S ACCESS ROAD WETLAND/INTERMITTENT WATERCOURSE CROSSINGS, AND ITS LOCATION IN THE VICINITY OF SENSITIVE WETLAND RESOURCES AND RARE SPECIES HABITAT, THE FOLLOWING BEST MANAGEMENT PRACTICES ("BMPs") SHALL BE IMPLEMENTED BY THE CONTRACTOR TO AVOID UNINTENTIONAL IMPACTS TO PROXIMATE WETLAND RESOURCES OR MORTALITY TO RARE AND OTHER WILDLIFE SPECIES DURING CONSTRUCTION ACTIVITIES. BMPs ASSOCIATED WITH THE PROTECTION OF WETLANDS WILL BE IMPLEMENTED REGARDLESS OF THE TIME OF YEAR WHILE SOME OF THE RARE SPECIES PROTECTION MEASURES COINCIDE WITH SPECIES ACTIVITY/INACTIVITY.

LITTLE BROWN BAT (*MYOTIS LUCIFUGUS*), RED BAT (*LASIURUS BOREALIS*), EASTERN BOX TURTLE (*TERRAPENE CAROLINA CAROLINA*), AND EASTERN HOGNOSE SNAKE (*HETERODON PLATIRHINOS*), ALL STATE-LISTED RARE SPECIES AFFORDED PROTECTION UNDER THE CONNECTICUT ENDANGERED SPECIES ACT, ARE KNOWN TO OCCUR ON OR PROXIMITY TO THE SITE. THE RARE SPECIES PROTECTION MEASURES INCLUDED HEREIN SATISFY REQUIREMENTS FROM THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION ("DEEP") WILDLIFE DIVISION IN ACCORDANCE WITH THEIR NATURAL DIVERSITY DATA BASE ("NDDb") DETERMINATION LETTER (NO. 202011003) DATED JANUARY 9, 2021; THIS DETERMINATION IS VALID UNTIL JANUARY 9, 2023 PROVIDED THE SCOPE OF THE PROJECT HAS NOT CHANGED AND WORK HAS BEGUN ON THE PROJECT PRIOR TO THE EXPIRATION DATE.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLIES WITH THE REQUIREMENT FOR THE INSTALLATION OF PROTECTIVE MEASURES AND THE EDUCATION OF ITS EMPLOYEES AND SUBCONTRACTORS PERFORMING WORK ON THE PROJECT SITE. ALL-POINTS TECHNOLOGY CORPORATION, P.C. ("APT") WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT THESE PROTECTION MEASURES ARE IMPLEMENTED PROPERLY AND WILL PROVIDE AN EDUCATION SESSION ON THE PROJECT'S PROXIMITY TO SENSITIVE WETLAND RESOURCES, WETLAND/INTERMITTENT STREAM CROSSINGS, AND RARE SPECIES PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT DEAN GUSTAFSON, SENIOR WETLAND SCIENTIST AT APT, AT LEAST 5 BUSINESS DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. MR. GUSTAFSON CAN BE REACHED BY PHONE AT (860) 552-2033 OR VIA EMAIL AT DGUSTAFSON@ALLPOINTSTECH.COM.

THIS RESOURCES PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS INCLUDING: EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; INSTALLATION OF EROSION CONTROLS; PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION; PROTECTIVE MEASURES; WETLAND CROSSING AND CULVERT INSTALLATION; RARE SPECIES PROTECTION MEASURES; INVASIVE SPECIES CONTROL PLAN; HERBICIDE AND PESTICIDE RESTRICTIONS, AND, REPORTING.

### 1. CONTRACTOR EDUCATION:

a. PRIOR TO WORK ON SITE AND INITIAL DEPLOYMENT/MOBILIZATION OF EQUIPMENT AND MATERIALS, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH APT. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF INFORMATION SUCH AS, BUT NOT LIMITED TO: IDENTIFICATION OF WETLAND RESOURCES PROXIMATE TO WORK AREAS, REPRESENTATIVE PHOTOGRAPHS OF TYPICAL HERPETOFAUNA THAT MAY BE ENCOUNTERED, CONNECTICUT AND FEDERAL LISTING STATUS OF SPECIES THAT COULD BE ENCOUNTERED, TYPICAL SPECIES BEHAVIOR, AND PROPER PROCEDURES IF SPECIES ARE ENCOUNTERED. THE MEETING WILL FURTHER EMPHASIZE THE NON-AGGRESSIVE NATURE OF THESE SPECIES, THE ABSENCE OF NEED TO DESTROY SUCH ANIMALS AND THE NEED TO FOLLOW PROTECTIVE MEASURES AS DESCRIBED IN FOLLOWING SECTIONS. THE CONTRACTOR WILL DESIGNATE ONE OF ITS WORKERS AS THE "PROJECT MONITOR", WHO WILL RECEIVE MORE INTENSE TRAINING ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA.

b. THE CONTRACTOR WILL DESIGNATE A MEMBER OF ITS CREW AS THE PROJECT MONITOR TO BE RESPONSIBLE FOR THE PERIODIC "SWEEPS" FOR HERPETOFAUNA WITHIN THE CONSTRUCTION ZONE EACH MORNING AND FOR ANY GROUND DISTURBANCE WORK. THIS INDIVIDUAL WILL RECEIVE MORE INTENSE TRAINING FROM APT ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA IN ORDER TO PERFORM SWEEPS. ANY HERPETOFAUNA DISCOVERED WOULD BE TRANSLOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.

c. THE CONTRACTOR'S PROJECT MONITOR WILL BE PROVIDED WITH CELL PHONE AND EMAIL CONTACTS FOR APT PERSONNEL TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH HERPETOFAUNA. EDUCATIONAL POSTER MATERIALS WILL BE PROVIDED BY APT AND DISPLAYED ON THE JOB SITE TO MAINTAIN WORKER AWARENESS AS THE PROJECT PROGRESSES.

d. APT WILL ALSO POST CAUTION SIGNS THROUGHOUT THE PROJECT SITE FOR THE DURATION OF THE CONSTRUCTION PROJECT PROVIDING NOTICE OF THE ENVIRONMENTALLY SENSITIVE NATURE OF THE WORK AREA, THE POTENTIAL FOR ENCOUNTERING VARIOUS AMPHIBIANS AND REPTILES AND PRECAUTIONS TO BE TAKEN TO AVOID INJURY TO OR MORTALITY OF THESE ANIMALS.

### 2. EROSION AND SEDIMENTATION CONTROLS/ISOLATION BARRIERS

a. PLASTIC NETTING USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS [WATTLES], REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS AND SMALL MAMMALS. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS THAT WILL BE EXPOSED AT THE GROUND SURFACE AND REPRESENT A POTENTIAL FOR WILDLIFE ENTANGLEMENT WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NETLESS) OR NETTING COMPOSED OF PLANAR WOVEN NATURAL BIODEGRADABLE FIBER TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.

b. INSTALLATION OF EROSION AND SEDIMENTATION CONTROLS, REQUIRED FOR EROSION CONTROL COMPLIANCE AND CREATION OF A BARRIER TO POSSIBLE MIGRATING/DISPERSING WILDLIFE (ONLY APPLICABLE DURING THE SEASONAL RESTRICTION PERIOD AND WILL BE INSTALLED AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR), SHALL BE PERFORMED BY THE CONTRACTOR IF ANY SOIL DISTURBANCE OCCURS OR HEAVY MACHINERY IS ANTICIPATED TO BE USED ON SLOPES. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION. IN ADDITION, WORK ZONES IN PROXIMITY TO WETLAND RESOURCES WILL BE INSPECTED PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION TO ENSURE THE AREA IS FREE OF HERPETOFAUNA AND OTHER WILDLIFE AND SATISFACTORILY INSTALLED. THE INTENT OF THE BARRIER IS TO SEGREGATE THE MAJORITY OF THE WORK ZONE FROM MIGRATING/DISPERSING HERPETOFAUNA AND OTHER WILDLIFE SPECIES. OFTEN TIMES COMPLETE ISOLATION OF A WORK ZONE IS NOT FEASIBLE DUE TO ACCESSIBILITY NEEDS AND LOCATIONS OF STAGING/MATERIAL STORAGE AREAS, ETC. IN THOSE CIRCUMSTANCES, THE BARRIERS WILL BE POSITIONED TO DEFLECT MIGRATING/DISPERSAL ROUTES AWAY FROM THE WORK ZONE TO MINIMIZE POTENTIAL ENCOUNTERS WITH HERPETOFAUNA/WILDLIFE AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR.

c. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIALS SHALL BE STORED WITHIN 100 FEET OF WETLAND RESOURCES.

d. ALL SILT FENCING OR OTHER POTENTIAL BARRIERS TO SAFE HERPETOFAUNA MIGRATION SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS SO THAT WILDLIFE MOVEMENT BETWEEN UPLANDS AND WETLANDS IS NOT RESTRICTED.

### 3. PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION

a. CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO WETLAND RESOURCES AND RARE SPECIES HABITAT.

b. A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.

c. THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.

#### 1. PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING

1. REFUELING OF VEHICLES OR MACHINERY SHALL OCCUR A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES AND SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.

2. ANY FUEL OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES.

#### ii. INITIAL SPILL RESPONSE PROCEDURES

1. STOP OPERATIONS AND SHUT OFF EQUIPMENT.
2. REMOVE ANY SOURCES OF SPARK OR FLAME.
3. CONTAIN THE SOURCE OF THE SPILL.
4. DETERMINE THE APPROXIMATE VOLUME OF THE SPILL.
5. IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.
6. ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.

#### iii. SPILL CLEAN UP & CONTAINMENT

1. OBTAIN SPILL RESPONSE MATERIALS FROM THE ON-SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
2. LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
3. ISOLATE AND ELIMINATE THE SPILL SOURCE.
4. CONTACT THE APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.

5. CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS.

#### iv. REPORTING

1. COMPLETE AN INCIDENT REPORT.
2. SUBMIT A COMPLETED INCIDENT REPORT TO LOCAL, STATE AND FEDERAL AGENCIES, AS NECESSARY, INCLUDING THE CONNECTICUT SITING COUNCIL.

### 4. WETLAND PROTECTIVE MEASURES

a. A THOROUGH COVER SEARCH OF THE CONSTRUCTION AREA WILL BE PERFORMED BY APT'S ENVIRONMENTAL MONITOR FOR HERPETOFAUNA PRIOR TO AND FOLLOWING INSTALLATION OF THE SILT FENCING BARRIER TO REMOVE ANY SPECIES FROM THE WORK ZONE PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES. ANY HERPETOFAUNA DISCOVERED WOULD BE TRANSLOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED. PERIODIC INSPECTIONS WILL BE PERFORMED BY APT'S ENVIRONMENTAL MONITOR THROUGHOUT THE DURATION OF THE CONSTRUCTION.

b. ANY STORMWATER MANAGEMENT FEATURES, RUTS OR ARTIFICIAL DEPRESSIONS THAT COULD HOLD WATER CREATED INTENTIONALLY OR UNINTENTIONALLY BY SITE CLEARING/CONSTRUCTION ACTIVITIES WILL BE PROPERLY FILLED IN AND PERMANENTLY STABILIZED WITH VEGETATION TO AVOID THE CREATION OF VERNAL POOL "DECOY POOLS" THAT COULD INTERCEPT AMPHIBIANS POTENTIALLY MOVING THROUGH THE PROJECT AREA. STORMWATER MANAGEMENT FEATURES SUCH AS LEVEL SPREADERS WILL BE CAREFULLY REVIEWED IN THE FIELD TO ENSURE THAT STANDING WATER DOES NOT ENDURE FOR MORE THAN A 24-HOUR PERIOD TO AVOID CREATION OF DECOY POOLS AND MAY BE SUBJECT TO FIELD DESIGN CHANGES. ANY SUCH PROPOSED DESIGN CHANGES WILL BE REVIEWED BY THE DESIGN ENGINEER TO ENSURE STORMWATER MANAGEMENT FUNCTIONS ARE MAINTAINED.

c. EROSION CONTROL MEASURES WILL BE REMOVED NO LATER THAN 30 DAYS FOLLOWING FINAL SITE STABILIZATION SO AS NOT TO IMPEDE MIGRATION OF HERPETOFAUNA OR OTHER WILDLIFE.

### 5. WETLAND CROSSINGS, CULVERT INSTALLATION & RESTORATION

a. THE CONTRACTOR SHALL CONTACT APT A MINIMUM OF 5 BUSINESS DAYS PRIOR TO CONSTRUCTION OF THE TWO WETLAND CROSSINGS IN ORDER TO MONITOR CONSTRUCTION ACTIVITIES IN AND ADJACENT TO WETLANDS AND THE INSTALLATION OF THE CULVERTS.

b. INSTALLATION OF THE CULVERT INVERT ELEVATIONS SHALL CONFORM TO THE PROJECT SITE PLANS AND ASSOCIATED DETAILS ALLOWING FOR SLIGHT FIELD ADJUSTMENTS BASED ON EXISTING ELEVATIONS WITHIN THE WETLAND SYSTEM TO ENSURE THAT THE CROSSINGS AND CULVERTS WILL NOT IMPEDE OR ADVERSELY IMPACT CONVEYANCE OF EXISTING SURFACE FLOWS THROUGH THE WETLAND SYSTEM.

c. CULVERTS SHALL MATCH EXISTING WETLAND/INTERMITTENT WATERCOURSE GRADIENT (SLOPE) AND WATERCOURSE CHANNEL PROFILES.

d. CULVERTS SHALL BE EMBEDDED 12 INCHES BELOW THE GRADE OF THE WETLAND/STREAMBED AND BE FILLED WITH NATURAL BOTTOM SUBSTRATE MATCHING THE CHARACTERISTICS OF THE SUBSTRATE IN THE NATURAL STREAM CHANNEL/WETLAND.

e. ANY EXPOSED/DISTURBED WETLAND SOILS RESULTING FROM THE WETLAND CROSSING SHALL BE SEEDED WITH A NEW ENGLAND WET SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR APPROVED EQUIVALENT) AT THE MANUFACTURERS RECOMMENDED SEED RATE. SIDE SLOPES AT THE WETLAND CROSSING SHALL BE SEEDED WITH A NEW ENGLAND CONSERVATION/WILDLIFE SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR APPROVED EQUIVALENT) AT THE MANUFACTURERS RECOMMENDED SEED RATE. MULCH SEEDED AREAS WITH NON-WOVEN NATURAL FIBER EROSION CONTROL BLANKET OR 2 TO 3 INCHES OF CLEAN STRAW MULCH, AS APPROPRIATE.

### 6. RARE BATS SITE MANAGEMENT MEASURES (TREE CLEARING RESTRICTION)

a. TREE CLEARING IS RESTRICTED TO OCCUR ONLY BETWEEN NOVEMBER 1ST THROUGH MARCH 30TH, DURING THE BAT'S NON-ROOSTING PERIOD, WHEN BATS WOULD NOT BE PRESENT ON THE SITE.

### 7. HOGNOSE SNAKE PROTECTION MEASURES

a. PRIOR TO WORK ON SITE, THE CONTRACTOR SHALL ATTEND AN ENVIRONMENTAL AWARENESS TRAINING SESSION AT THE PRE-CONSTRUCTION MEETING WITH APT. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF AN INTRODUCTORY MEETING WITH APT PROVIDING PHOTOS OF HOGNOSE SNAKES AND EMPHASIZING THE NON-AGGRESSIVE NATURE OF THESE SNAKES, THE ABSENCE OF NEED TO DESTROY ANIMALS THAT MIGHT BE ENCOUNTERED.

b. THE ENVIRONMENTAL AWARENESS TRAINING SESSION WILL ALSO FOCUS ON MEANS TO DISCRIMINATE BETWEEN THE SPECIES OF CONCERN AND OTHER NATIVE SPECIES TO AVOID UNNECESSARY "FALSE ALARMS". ENCOUNTERS WITH ANY SPECIES OF SNAKES WILL BE DOCUMENTED.

c. THE CONTRACTOR WILL BE PROVIDED WITH CELL PHONE AND EMAIL CONTACTS FOR THE APT ENVIRONMENTAL MONITOR TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH HOGNOSE SNAKE OR OTHER SNAKE SPECIES. EDUCATIONAL POSTER MATERIALS WILL BE PROVIDED BY APT AND DISPLAYED ON THE JOB SITE TO MAINTAIN WORKER AWARENESS AS THE PROJECT PROGRESSES.

d. APT WILL MONITOR THE REMOVAL OF LOGS, STUMPS AND OTHER MATERIAL CURRENTLY LOCATED AT THE CONSTRUCTION SITE WHICH MAY SERVE AS COVER FOR HOGNOSE SNAKES. MATERIAL WILL BE CAREFULLY REMOVED TO AVOID INJURY TO ANY POSSIBLE SNAKES THAT MAY BE USING THIS MATERIAL FOR COVER. ANY OBSERVATIONS OF SNAKES WILL BE REPORTED.

e. IF A SNAKE IS FOUND, IT SHALL BE IMMEDIATELY MOVED, UNHARMED, AND PLACED JUST OUTSIDE OF THE ISOLATION BARRIER IN THE SAME APPROXIMATE DIRECTION IT WAS MOVING. SINCE WILD SNAKES CAN BE SOMETIMES DIFFICULT TO HANDLE WITHOUT INJURY BY AN UNTRAINED INDIVIDUAL, APT WILL PROVIDE SNAKE HANDLING TRAINING TO A DEDICATED MEMBER OF THE CONTRACTOR.

f. PRIOR TO THE START OF CONSTRUCTION EACH DAY, THE CONTRACTOR SHALL SEARCH THE ENTIRE WORK AREA FOR SNAKES. SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR DURING EARLY MORNING AND EVENING HOURS SO THAT POSSIBLE BASKING OR FORAGING SNAKES ARE NOT HARMED BY CONSTRUCTION ACTIVITIES.

### 8. TURTLE PROTECTION MEASURES

a. PRIOR TO CONSTRUCTION AND FOLLOWING INSTALLATION OF ISOLATION BARRIERS, THE CONSTRUCTION AREA WILL BE SWEEP BY APT AND ANY TURTLES OCCURRING WITHIN THE WORK AREA WILL BE RELOCATED TO SUITABLE HABITAT OUTSIDE OF THE ISOLATION BARRIERS.

b. PRIOR TO THE START OF CONSTRUCTION EACH DAY, THE CONTRACTOR SHALL SEARCH THE ENTIRE WORK AREA FOR TURTLES.

c. IF A TURTLE IS FOUND, IT SHALL BE IMMEDIATELY MOVED, UNHARMED, BY BEING CAREFULLY GRASPED IN BOTH HANDS, ONE ON EACH SIDE OF THE SHELL, BETWEEN THE TURTLE'S FORELIMBS AND THE HIND LIMBS, AND PLACED JUST OUTSIDE OF THE ISOLATION BARRIER IN THE SAME APPROXIMATE DIRECTION IT WAS HEADING. THESE ANIMALS ARE PROTECTED BY LAW AND NO TURTLES SHOULD BE RELOCATED FROM THE PROPERTY.

d. SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR DURING EARLY MORNING AND EVENING HOURS SO THAT POSSIBLE BASKING OR FORAGING TURTLES ARE NOT HARMED BY CONSTRUCTION ACTIVITIES.

e. THE CONTRACTOR SHALL BE PARTICULARLY DILIGENT DURING THE MONTHS OF MAY AND JUNE WHEN TURTLES ARE ACTIVELY SELECTING NESTING SITES WHICH RESULTS IN AN INCREASE IN TURTLE MOVEMENT ACTIVITY.

f. NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED IN ANY TURTLE HABITAT.

g. WHEN FELLING TREES ADJACENT TO BROOKS AND STREAMS, CUT THEM TO FALL AWAY FROM THE WATERWAY AND DO NOT DRAG TREES ACROSS THE WATERWAY OR REMOVE STUMPS FROM BANKS.

h. AVOID AND LIMIT ANY EQUIPMENT USE WITHIN 100 FEET OF WETLANDS AND NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED IN ANY TURTLE HABITAT OR WITHIN 100 FEET OF WETLANDS.

i. SPECIAL PRECAUTIONS MUST BE TAKEN TO AVOID DEGRADATION OF WETLAND HABITATS, PARTICULARLY ALONG STREAM RIPARIAN CORRIDORS.

### 9. INVASIVE SPECIES CONTROL PLAN

THE SETTING FOR THE PROPOSED FACILITY CONSISTS PRIMARILY OF A MATURE FOREST WITH NATIVE TREES, SHRUBS AND FORBS THAT CONTAINS MINIMAL INVASIVE PLANT SPECIES, PARTICULARLY WITHIN THE INTERIOR OF THE SUBJECT PROPERTY WHERE THE PROPOSED FACILITY AND ACCESS ARE PROPOSED. AS SUCH, CERTAIN PRECAUTIONS ARE RECOMMENDED DURING CONSTRUCTION IN ORDER TO AVOID/MINIMIZE THE IMPORTATION OF INVASIVE PLANT SEEDS/MATERIAL THAT COULD COLONIZE THE INTERIOR OF THIS FOREST COMMUNITY AND DIMINISH ITS WILDLIFE HABITAT VALUE. PROPOSED SOIL DISTURBANCES DURING CONSTRUCTION PROVIDE AN OPPORTUNITY FOR INVASIVE PLANTS TO GAIN A FOOTHOLD AND SPREAD INTO THE SURROUNDING FORESTED HABITAT. THIS CAN OCCUR THROUGH THE IMPORTATION OF SOIL THAT CONTAINS INVASIVE PLANT SEED STOCK OR CARRIED BY CONSTRUCTION EQUIPMENT THAT HAS PICKED UP SOIL WITH INVASIVE SEED STOCK. THE INVASIVE SPECIES PLAN INCLUDES THE FOLLOWING:

a. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING TO REVIEW THE REQUIREMENTS OF THE INVASIVE SPECIES CONTROL PLAN PRIOR TO MOBILIZATION OF EQUIPMENT, VEHICLES, MATERIALS, ETC. ONTO THE PROPERTY.

b. PRIOR TO ENTRY ONTO THE PROPERTY, ALL EQUIPMENT AND VEHICLES SHALL BE PRESSURE WASHED BY THE CONTRACTOR AT ITS STORAGE YARD IN ORDER TO REMOVE ANY LOOSE SOIL THAT MAY BE CARRYING INVASIVE PLANT SEEDS.

c. NO TOPSOIL SHALL BE IMPORTED ONTO THE PROPERTY.

d. ANY CLEAN FILL MATERIAL IMPORTED ONTO THE PROPERTY SHALL BE FREE OF WEED SEEDS.

e. USE OF HAYBALES IS PROHIBITED ON THIS PROJECT. NATURAL EROSION CONTROL MATERIALS SHALL BE EITHER STRAW BALES OR STRAW- OR COMPOST-FILLED SOCKS/WATTLES.

f. TOPSOIL REMOVED FROM THE PROPOSED ACCESS DRIVE AND FACILITY COMPOUND SHALL BE RETAINED AND TEMPORARILY STOCKPILED ON THE PROPERTY TO RESTORE AND PERMANENTLY STABILIZE DISTURBED AREAS. TEMPORARILY STOCKPILED TOPSOIL SHALL BE IMMEDIATELY SEEDED WITH EITHER ANNUAL RYE OR WINTER RYE IF IT WILL NOT BE USED WITHIN ONE (1) WEEK.

g. ALL RESTORED AREAS WILL BE INSPECTED DURING THE GROWING SEASON FOR TWO (2) YEARS FOLLOWING ESTABLISHMENT OF PERMANENT VEGETATION TO MONITOR FOR POSSIBLE COLONIZATION BY INVASIVE PLANTS SPECIES. INVASIVE PLANTS ARE THOSE LISTED AS NON-NATIVE INVASIVE WOODY PLANTS BY THE CONNECTICUT INVASIVE PLANT WORKING GROUP.

h. IF INVASIVE WOODY PLANTS ARE IDENTIFIED TO HAVE MORE THAN 10% AERIAL COVERAGE IN THE RESTORED AREAS, A CONTROL PLAN FOR REMOVAL OF THE INVASIVE WOODY PLANTS WILL BE IMPLEMENTED.

### 10. HERBICIDE AND PESTICIDE RESTRICTIONS

a. THE USE OF HERBICIDES AND PESTICIDES AT THE FACILITY SHALL BE AVOIDED WHEN POSSIBLE. IN THE EVENT HERBICIDES AND/OR PESTICIDES ARE REQUIRED AT THE FACILITY, THEIR USE WILL BE USED IN ACCORDANCE WITH CURRENT INTEGRATED PEST MANAGEMENT ("IPM") PRINCIPLES WITH PARTICULAR ATTENTION TO MINIMIZE APPLICATIONS WITHIN 100 FEET OF WETLAND OR WATERCOURSE RESOURCES. NO APPLICATIONS OF HERBICIDES OR PESTICIDES ARE ALLOWED WITHIN ACTUAL WETLAND OR WATERCOURSE RESOURCES.

### 11. REPORTING

a. COMPLIANCE MONITORING REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) DOCUMENTING EACH APT INSPECTION WILL BE SUBMITTED BY APT TO HOMELAND TOWERS FOR COMPLIANCE VERIFICATION. ANY OBSERVATIONS OF HERPETOFAUNA, IMPACTS, OR CORRECTIVE ACTIONS WILL BE INCLUDED IN THE REPORTS.

b. FOLLOWING COMPLETION OF THE CONSTRUCTION PROJECT, APT WILL PROVIDE A COMPLIANCE MONITORING SUMMARY REPORT TO HOMELAND TOWERS DOCUMENTING IMPLEMENTATION OF THE RESOURCES PROTECTION PROGRAM AND MONITORING OBSERVATIONS. HOMELAND TOWERS WILL PROVIDE A COPY OF THE COMPLIANCE MONITORING SUMMARY REPORT TO THE CONNECTICUT SITING COUNCIL FOR COMPLIANCE VERIFICATION.

c. ANY OBSERVATIONS OF RARE SPECIES WILL BE REPORTED TO CTDEEP BY APT, WITH PHOTO-DOCUMENTATION (IF POSSIBLE) AND WITH SPECIFIC INFORMATION ON THE LOCATION AND DISPOSITION OF THE ANIMAL.



HOMELAND TOWERS, LLC  
9 HARMONY STREET  
2nd FLOOR  
DANBURY, CT 06810  
(203) 297-6345



340 MOUNT KEMBLE AVENUE  
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

### D&M DOCUMENTS

NO	DATE	REVISION
0	01/18/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

### DESIGN PROFESSIONALS OF RECORD

PROF. ROBERT C. BURNS P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC  
ADDRESS: 9 HARMONY STREET 2ND FLOOR DANBURY, CT 06810

### HOMELAND TOWERS SHERMAN II

SITE ADDRESS: 16 COOTE HILL ROAD SHERMAN, CT 06784

APT FILING NUMBER: CT283390

DATE: 01/18/22	DRAWN BY: CSH
	CHECKED BY: RCB

### SHEET TITLE:

## ENVIRONMENTAL NOTES

### SHEET NUMBER:

N-2

