

KENNETH C. BALDWIN

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Also admitted in Massachusetts  
and New York

March 24, 2022

Melanie A. Bachman, Esq.  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: **Docket No. 494 - Application of Cellco Partnership d/b/a Verizon Wireless For A Certificate Of Environmental Compatibility And Public Need For The Construction, Maintenance And Operation Of A Wireless Telecommunications Facility Off Chestnut Hill Road in Wolcott, Connecticut**

**Development and Management Plan Submission**

Dear Ms. Bachman:

Enclosed please find fifteen (15) copies of the following:

1. Final Development and Management (“D&M”) Plans prepared by Nexius for the approved telecommunications facility off Chestnut Hill Road, Wolcott, Connecticut, incorporating the Council’s conditions of approval. Also enclosed are three (3) full size (24” x 36”) sets of D&M plans.
2. Tower and Foundation design and calculations (P1 Fall Zone Letter; P1 Permit Drawing; P1 Pole Slab DWG; P1 Pole Slab Calculations; and P1 Pole Form Calculations) dated February 15, 2022, prepared by Valmont Structures.
3. Geotechnical Engineering Report prepared by S. W. Cole Engineering, Inc. dated November 10, 2021.

Melanie A. Bachman, Esq.  
March 24, 2022  
Page 2

Together, this information constitutes the final D&M Plan submission for the approved telecommunications facility off Chestnut Hill Road in Wolcott, Connecticut.

We respectfully request that this information be reviewed, and this matter be placed on the next available Siting Council agenda for approval. Please feel free to contact me if you have any questions or require additional information. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

KCB/kmd  
Enclosures  
Copy to:

Thomas G. Dunn, Mayor  
Tim Parks, Verizon Wireless  
Daniel Patrick, Esq. (AT&T Counsel)



CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581

SITE NAME:  
**WOLCOTT\_SOUTH\_CT**

LOCATION CODE:  
**469936**

SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716**



Know what's below.  
Call before you dig.

PREPARED BY:  
**nexius**  
A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:  
**verizon**  
CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581



Digitally signed by Jordan D Phillips  
PE  
E-001010  
E-jordan.phillips@nexius.com  
C:\Program Files\VeriSign\VeriSign Software, Inc.\  
CA\MyE\_Certificates\Jordan D Phillips  
PE  
Location: Shelton, CT, MA  
Reason: I am the author of this  
document.  
Contact Info: (248) 709-0642  
Date: 2022.03.23 16:44:53-0400'

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DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE  
PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES  
ARE DEEMED "NOT TO SCALE".

**SITE INFORMATION**

SITE NAME: WOLCOTT\_SOUTH\_CT  
LOCATION CODE: 469936  
SITE ADDRESS: CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
COUNTY: NEW HAVEN COUNTY  
LATITUDE: 41° 35' 24.03" N (NAD83)  
LONGITUDE: 73° 00' 31.02" W (NAD83)  
GROUND LEVEL: 786' A.M.S.L. (NAVD83)  
PROPERTY OWNER: PAL PROPERTIES, LLC  
1141 WOLCOTT HILL ROAD  
WOLCOTT, CT 06716  
STRUCTURE TYPE: 120'-0"± MONOPOLE  
HIGHEST APPURTENANCE: 125'-0"± LIGHTNING ROD

**GENERAL NOTES AND APPLICABLE CODES**

- THIS IS AN UNSTAFFED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION.
  - HANDICAPPED ACCESS IS NOT REQUIRED.
  - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
  - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
- CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
- DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.
  - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE (IBC 2015)
  - ELECTRICAL CODE: NATIONAL ELECTRIC CODE 2017

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS::

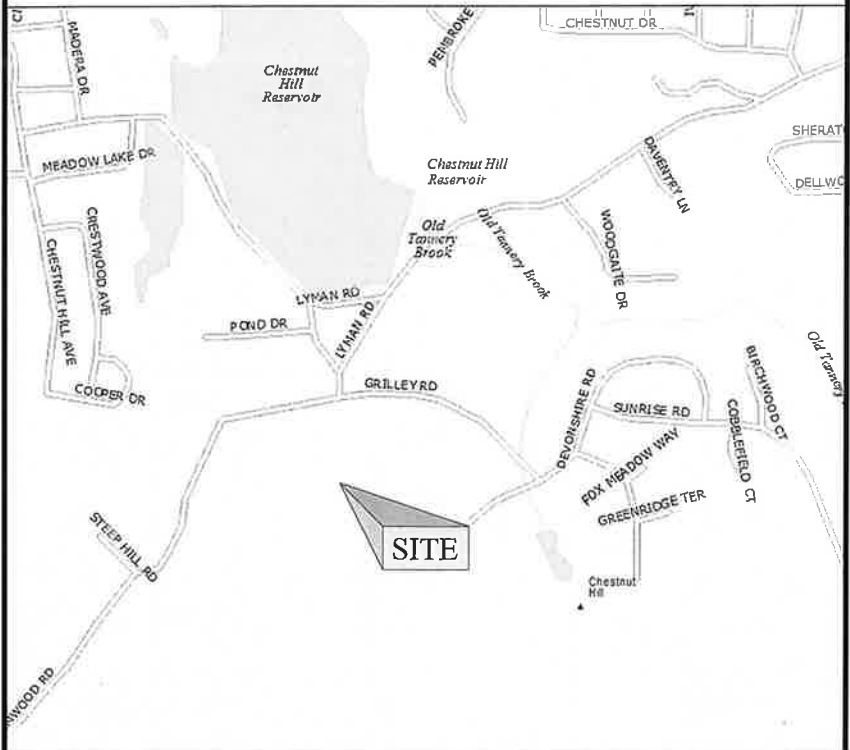
  - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
  - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION.
  - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)
    - TIA 222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES AND ANTENNAS WITH ADDENDUM.
    - TIA 607, GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES.
  - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
    - IEEE 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUNDING SYSTEM.
    - IEEE 1100 (2005) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT.
    - IEEE C62.41.1, RECOMMENDED PRACTICES ON CHARACTERIZATION OF SURGES IN LOW VOLTAGE (1000V OR LESS) AC POWER CIRCUITS.
  - TELCORDIA, GR-1275, GENERAL INSTALLATION REQUIREMENTS.
  - TELCORDIA, GR-1503, COAXIAL CONNECTORS.
  - ANSI T1.311, TELECOMMUNICATIONS - DC POWER SYSTEMS - TELECOMMUNICATIONS ENVIRONMENT PROTECTION.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

**SHEET INDEX**

SHEET NUMBER	SHEET DESCRIPTION
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GN-1	GENERAL NOTES
C-1	ABUTTERS PLAN
C-2	EXISTING CONDITIONS PLAN
C-3	TREE SURVEY
OS-1	OVERALL SITE PLAN
A-1	COMPOUND PLAN
A-2	TOWER ELEVATION, DETAILS & NOTES
A-3	EQUIPMENT PAD DETAILS
A-4	SITE DETAILS
A-5	CANOPY DETAILS
SP-1	PARTIAL SITE PLAN
SP-2	SITE DETAILS
SP-3	SITE DETAILS
SP-4	ACCESS DRIVEWAY PROFILE
EC-1	EROSION CONTROL NOTES
N-1	ENVIRONMENTAL NOTES
E-1	ELECTRICAL NOTES & DETAILS
E-2	POWER RISER DIAGRAM
E-3	GROUNDING DETAILS & NOTES
E-4	GROUNDING PLAN, DETAILS & NOTES

**VICINITY MAP**



**SUBMITTALS**

REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

**SITE INFO:**  
SITE NAME:  
**WOLCOTT\_SOUTH\_CT**  
LOCATION CODE:  
**469936**  
SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

**APPROVALS**

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

LEASING/SITE ACQUISITION: \_\_\_\_\_ DATE: \_\_\_\_\_  
LANDLORD: \_\_\_\_\_ DATE: \_\_\_\_\_  
VZW CM: \_\_\_\_\_ DATE: \_\_\_\_\_  
VZW RF: \_\_\_\_\_ DATE: \_\_\_\_\_

**SHEET TITLE:**  
**TITLE SHEET**

NEXIUS PROJ. NO:  
**VZ11509**

CHECKED BY:  
JP

CHECKED BY DATE:  
01/19/22

SHEET NUMBER:  
**T-1**

PREPARED BY:

**nexius**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581



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**TITLE SHEET**

NEXIUS PROJ. NO:  
**VZ11509**

SHEET NUMBER:

CHECKED BY:  
JP

**GN-1**

CHECKED BY DATE:  
01/19/22

GENERAL CONSTRUCTION NOTES:

- THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL DRAWINGS HAVE BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION." THE CONTRACTOR SHALL CONTACT NEXIUS, INC. TO ENSURE THAT THEY HAVE THE LATEST SET OF CONSTRUCTION DRAWINGS PRIOR TO COMMENCING ANY WORK WHATSOEVER.
- ADA COMPLIANCE: THE FACILITY IS A NORMALLY UNOCCUPIED MOBILE RADIO FACILITY.
- THESE PLANS ARE INTENDED TO BE USED TO DIRECT THE PROPOSED LAYOUT. DRAWINGS SHOULD NOT BE SCALED UNLESS OTHERWISE NOTED. PLANS, ELEVATIONS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
- THESE PLANS ARE DESIGNED TO REFLECT OBSERVED FIELD CONDITIONS. CERTAIN CONDITIONS ARE ASSUMED TO COMPLY WITH GENERAL STANDARD CONSTRUCTION DESIGN METHODS AND PRINCIPLES, AND THE CONTRACTOR SHALL NOTE THAT NOT ALL AREAS OF STRUCTURAL ATTACHMENT HAVE BEEN OPENED OR SPECIFICALLY VERIFIED. THE CONTRACTOR IS THEREFORE REQUESTED TO NOTIFY THE ENGINEER IMMEDIATELY SHOULD ENCOUNTERED FIELD CONDITIONS VARY FROM THOSE DEPICTED ON THE DRAWINGS. NEXIUS, INC. WILL ISSUE FIELD CHANGE DIRECTION IF REQUIRED.
- ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK PERFORMED AND MATERIALS INSTALLED TO BE IN STRICT CONFORMANCE, AS A MINIMUM STANDARD, WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION. ELECTRICAL SYSTEMS SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE, AND ALL OTHER LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES, AND WITH LOCAL UTILITY COMPANY SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
- THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DIRT, STUMPS, STONES, RUBBISH OR DEBRIS IN ACCORDANCE WITH ALL LOCAL AND ENVIRONMENTAL LAWS. NO MATERIALS OR EQUIPMENT SHALL BE PLACED ANYWHERE ON OR IN THE STRUCTURE WITHOUT MAKING ADEQUATE PROVISIONS TO PROTECT EXISTING PROPERTY. UPON COMPLETION, REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DURING CONSTRUCTION. REPAIR ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES.

SITE WORK GENERAL NOTES:

- THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT LIMITED TO:
  - FALL PROTECTION
  - CONFINED SPACE
  - ELECTRICAL SAFETY
  - TRENCHING & EXCAVATION
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
- THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

SPECIFICATIONS FOR NON-SHRINK GENERAL PURPOSE GROUT:

- ALL NON-SHRINK GENERAL-PURPOSE GROUT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE NON-SHRINK GENERAL-PURPOSE GROUT SHALL BE MECHANICALLY MIXED FOR A MINIMUM OF TEN MINUTES.
- MIX NO MORE GROUT THEN CAN BE PLACED IN 10 TO 15 MINUTES.
- SURFACES TO RECEIVE THE GROUT SHALL BE FREE OF ANY TYPE OF FOREIGN MATERIAL AND BOND INHIBITING MATERIALS. BE SURE REPAIR AREA IS NOT LESS THAN 1/8" IN DEPTH.
- THE SUBSTRATE SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER. MORTAR MUST BE SCRUBBED INTO SUBSTRATE FILLING ALL PORES AND VOIDS.
- TYPICAL PROPERTIES OF THE GROUT SHALL BE AS FOLLOWS:
  - COMPRESSIVE STRENGTH (ASTM C-109 MODIFIED)
    - 1 DAY: 3500 PSI MIN
    - 7 DAY: 6000 PSI MIN
    - 28 DAY: 7000 PSI MIN
  - FLEXURAL STRENGTH (ASTM C-293) @ 28 DAYS: 2000 PSI
- ALL STEEL BEARING PLATES AND MAIN SUPPORT STEEL SHALL BE INSTALLED ONCE THE GROUT HAS BEEN LEVELED AND HAS BEEN CURED FOR A MINIMUM OF 24 HOURS. THE FULL DESIGN EQUIPMENT LOAD SHALL BE INSTALLED AFTER THE GROUT HAS CURED FOR 48 HOURS.
- SHOULD THE CONTRACTOR WISH TO PROPOSE AN ALTERNATIVE GROUT AND METHOD OF WORKING OUTSIDE THESE PARAMETERS, THIS MUST BE PRESENTED TO THE ENGINEER IN WRITING WITH A FULL METHOD STATEMENT, MATERIAL DATA SHEET AND INSTALLATION INSTRUCTIONS FOR HIS/HER APPROVAL.
- FAILURE TO COMPLY WITH THIS SPECIFICATION COULD SERIOUSLY AFFECT THE STABILITY OF THE INSTALLATION.

CONSTRUCTION SPECIFICATIONS:

DIVISION 1 -- GENERAL REQUIREMENTS SECTION 01010 SUMMARY OF WORK:

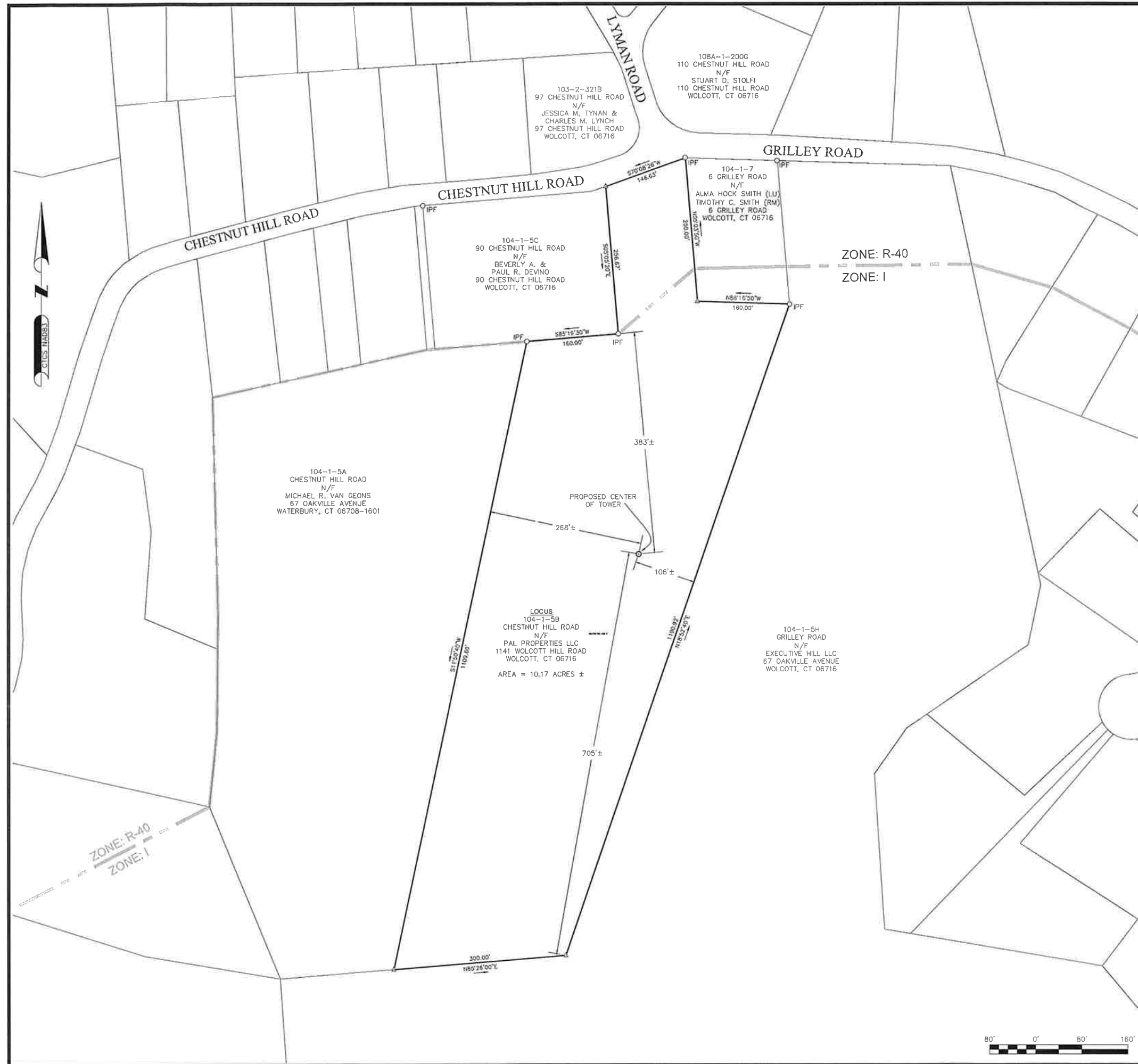
- THE CONTRACTOR SHALL REVIEW AND BECOME FAMILIAR WITH SPECIFICATIONS CONTAINED IN THE BID PACKAGE PREPARED BY NEXIUS, INC. AND THE CLIENT, THE CONTRACTOR SHALL CONTACT NEXIUS, INC. TO ENSURE THAT THEY HAVE THE LATEST SET OF CONSTRUCTION DRAWINGS PRIOR TO COMMENCING ANY WORK WHATSOEVER.
- IN THE EVENT OF A CONFLICT BETWEEN THE BID PACKAGE SPECIFICATIONS AND THESE NOTES, THE PROVISIONS OF THE CLIENTS' SPECIFICATIONS SHALL TAKE PRECEDENCE.
- THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED WORK AND FULLY ACQUAINT THEMSELVES WITH THE CONDITIONS AS THEY EXIST IN ORDER THAT ANY RESTRICTIONS PERTAINING TO THE WORK ARE UNDERSTOOD. ALL AREAS AND DIMENSIONS ARE INDICATED ON THE DRAWINGS AS ACCURATELY AS POSSIBLE, BUT ALL CONDITIONS SHALL BE VERIFIED BY EACH CONTRACTOR AND/OR SUBCONTRACTOR AT THE SITE. THE FAILURE OF THE CONTRACTOR TO EXAMINE OR RECEIVE ANY FORM, INSTRUMENT OR DOCUMENT, OR TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY OBLIGATION WITH RESPECT TO THEIR QUOTED PRICE. THE SUBMISSION OF A QUOTATION SHALL ACKNOWLEDGE THAT THE CONTRACTOR AND THEIR SUBCONTRACTORS HAVE FULLY EXAMINED THE SITE AND KNOW THE EXISTING CONDITIONS AND HAVE MADE PROVISIONS FOR OPERATING UNDER THE CONDITIONS AS THEY EXIST AT THE SITE AND HAVE INCLUDED ALL NECESSARY ITEMS.
- THE GENERAL CONTRACTOR'S RESPONSIBILITIES SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION OF THE EQUIPMENT FOUNDATION, INCLUDING ELECTRICAL SERVICE, TELEPHONE CONDUITS, GROUNDING SYSTEM AND COORDINATION WITH LOCAL UTILITY COMPANIES.
- THE ANTENNA INSTALLERS RESPONSIBILITIES SHALL INCLUDE, BUT NOT BE LIMITED TO, CABLE TRAY INSTALLATION, ROUTING OF CABLES FROM RADIO EQUIPMENT TO ANTENNAS, ASSOCIATED HARDWARE FOR SECURING ANTENNA CABLES, ANTENNA MOUNTS, DETERMINING SUPPLIER OF ANTENNAS, GROUNDING OF ANTENNAS TO GROUNDING SYSTEM, INSTALLING ANTENNAS AND VERIFYING WITH RADIO FREQUENCY ENGINEERS, THE ALIGNMENT, LOCATION, AND PROPER ORIENTATION OF ANTENNAS.
- THE CONTRACTORS SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE BUILDING LANDLORD IN ORDER TO AVOID CONFLICTS WITH CURRENT USE OF THE SITE.
- THE OWNER MAY HAVE WORK PERFORMED UNDER SEPARATE CONTRACTS, CONCURRENTLY, WITH THE WORK OF THIS CONTRACT.
- THE GENERAL CONTRACTOR SHALL PERMIT ACCESS TO THE PROJECT TO THESE CONTRACTORS TO PERFORM THEIR WORK.
- THE CONTRACTOR SHALL CONFORM TO ALL APPLICABLE LOCAL, COUNTY, STATE, AND FEDERAL CODES, LAWS AND REQUIREMENTS, INCLUDING OSHA.
- THE CONTRACTOR SHALL APPLY AND PAY FOR THE CONSTRUCTION PERMIT, CERTIFICATE OF OCCUPANCY AND ALL OTHER REQUIRED PERMITS OR LICENSES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL INSPECTIONS.
- CARE SHALL BE EXERCISED IN PROTECTING THE BUILDING OCCUPANTS DURING THE DEMOLITION AND CONSTRUCTION PERIODS OF THIS PROJECT. EVERY EFFORT SHALL BE MADE TO MAINTAIN A CLEAN OPERATION. DEBRIS SHALL NOT ACCUMULATE. ALL DEBRIS WILL BE DEPOSITED IN A SUITABLE CONTAINER ON A DAILY BASIS AND SHALL BE EMPTIED ON A REGULAR SCHEDULE. THE LOCATION OF THE CONTAINER SHALL BE COORDINATED WITH THE BUILDING MANAGER.
- SAFETY PROCEDURES: ATTENTION IS DIRECTED TO FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH STANDARDS. THE CONSTRUCTION COMPANY AWARDED THIS PROJECT SHALL ENSURE ALL WORKING SURROUNDINGS AND CONDITIONS ARE SANITARY, AND ARE NOT HAZARDOUS OR DANGEROUS TO THE HEALTH OR SAFETY OF THE WORK CREWS OR BUILDING OCCUPANTS. PRECAUTION SHALL BE EXERCISED AT ALL TIMES FOR THE PROTECTION OF PERSONS AND PROPERTY. IT IS MANDATORY THAT THE SAFETY PROVISIONS OF APPLICABLE LOCAL LAWS, OSHA REGULATIONS AND BUILDING AND CONSTRUCTION CODES, BE OBSERVED FOR ALL CONTRACTORS AND ANTENNA RIGGERS.

SECTION 01613 -- DELIVERY, STORAGE AND HANDLING:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROCEDURES AND SCHEDULING ASSOCIATED WITH HOISTING, STAGING, AND ERECTING OF MATERIALS AND EQUIPMENT TO AND/OR UPON THE SITE.
- ALL ELEMENTS OF THE EXISTING SITE, I.E. STRUCTURES, SITE PLANTINGS, ETC. SHALL BE PROTECTED AS NECESSARY FROM SAID ACTIONS. THIS WORK MUST BE DONE IN A SAFE, SECURE NONDESTRUCTIVE MANNER FOR PROTECTING PERSONNEL AND PROPERTY.

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
A.G.L.	ABOVE GROUND LEVEL
A.M.S.L.	ABOVE MEAN SEA LEVEL
E.Q.	EQUAL
GALV.	GALVANIZED
MAX.	MAXIMUM
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
SCH.	SCHEDULE
TYP.	TYPICAL
U/G	UNDERGROUND
U/P	UTILITY POLE
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD



**LEGEND:**

- N/F NOW OR FORMERLY
- 25-4520652 ASSESSOR'S ID
- ▲ CALCULATED POINT
- IRON PIPE/ROD FOUND
- BOUND FOUND
- ⊙ MANHOLE
- ⊞ CATCH BASIN
- ⊘ UTILITY POLE
- LIGHT POLE
- ◇ TREE / BUSH
- LOCUS PROPERTY LINE
- ABUTTERS PROPERTY LINE (±)
- OHW OVERHEAD WIRES
- TREELINE
- CONTOUR LINE
- STONE WALL

- SITE SPECIFIC NOTES:**
- FIELD SURVEY DATE: 12-31-2019 & 05-01-2020
  - HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
  - VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
  - OWNER: PAL PROPERTIES LLC  
1141 WOLCOTT HILL ROAD  
WOLCOTT, CT 06716
  - SITE NAME: WOLCOTT SOUTH CT
  - SITE ADDRESS: CHESTNUT HILL ROAD  
WOLCOTT, CT 06716
  - APPLICANT: CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
20 ALEXANDER DR., 2ND FLOOR  
WALLINGFORD, CT 06492
  - JURISDICTION: TOWN OF WOLCOTT  
NEW HAVEN COUNTY
  - TAX ID: 104-1-5B
  - DEED REFERENCE: BOOK 465 PAGE 301
  - PLAN REFERENCE: N/A
  - ZONING DISTRICT: R-40 & I
  - THE HORIZONTAL DATUM AND VERTICAL DATUM WERE DERIVED FROM AN RTK GPS SURVEY.
  - ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ALL SITE WORK. CALL DIGSAFE 1-800-322-4844 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
  - ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE PROPOSED IMPROVEMENTS ON THIS PROPERTY ARE LOCATED IN AN AREA DESIGNATED AS ZONE X, "AREA OF MINIMAL FLOOD HAZARD". COMMUNITY PANEL NO. 09009 C 0109 H EFFECTIVE DATE: 12-17-2010
  - FIELD SURVEY BY EDM TOTAL STATION & RTK GPS.
  - THIS IS NOT A BOUNDARY SURVEY.
  - ALL PROPERTY LINES SHOWN ARE FROM DEEDS AND PLANS OF RECORD AND THE TOWN OF WOLCOTT GIS AND ARE APPROXIMATE ONLY.
  - WETLANDS SHOWN HEREON WERE DELINEATED BY ALL-POINTS TECHNOLOGY CORPORATION.

**SUBMITTALS**

REV	DATE	DESCRIPTION	BY
1	01/09/2020	SUBMITTED FOR REVIEW	BCF
2	05/11/2020	ADD TOPO AND TREES	BCF

**SITE INFO:**

SITE NAME:  
**WOLCOTT SOUTH CT**

LOCATION CODE:

SITE ADDRESS:  
CHESTNUT HILL ROAD  
WOLCOTT, CT 06716

**SHEET TITLE:**

**ABUTTERS PLAN**

NEXIUS PROJ. NO: SHEET NUMBER:  
**C-1**

CHECKED BY: \_\_\_\_\_

CHECKED BY DATE: 05/11/2020

PREPARED BY:

**nexius**  
TRANSFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:  
300 APOLLO DRIVE, SUITE 7  
CHELMSFORD, MA 01824  
1 (978) 923-7965

APPLICANT:

CELLCO PARTNERSHIP d/b/a  
**verizon**  
20 ALEXANDER DRIVE, 2<sup>ND</sup> FLOOR  
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:

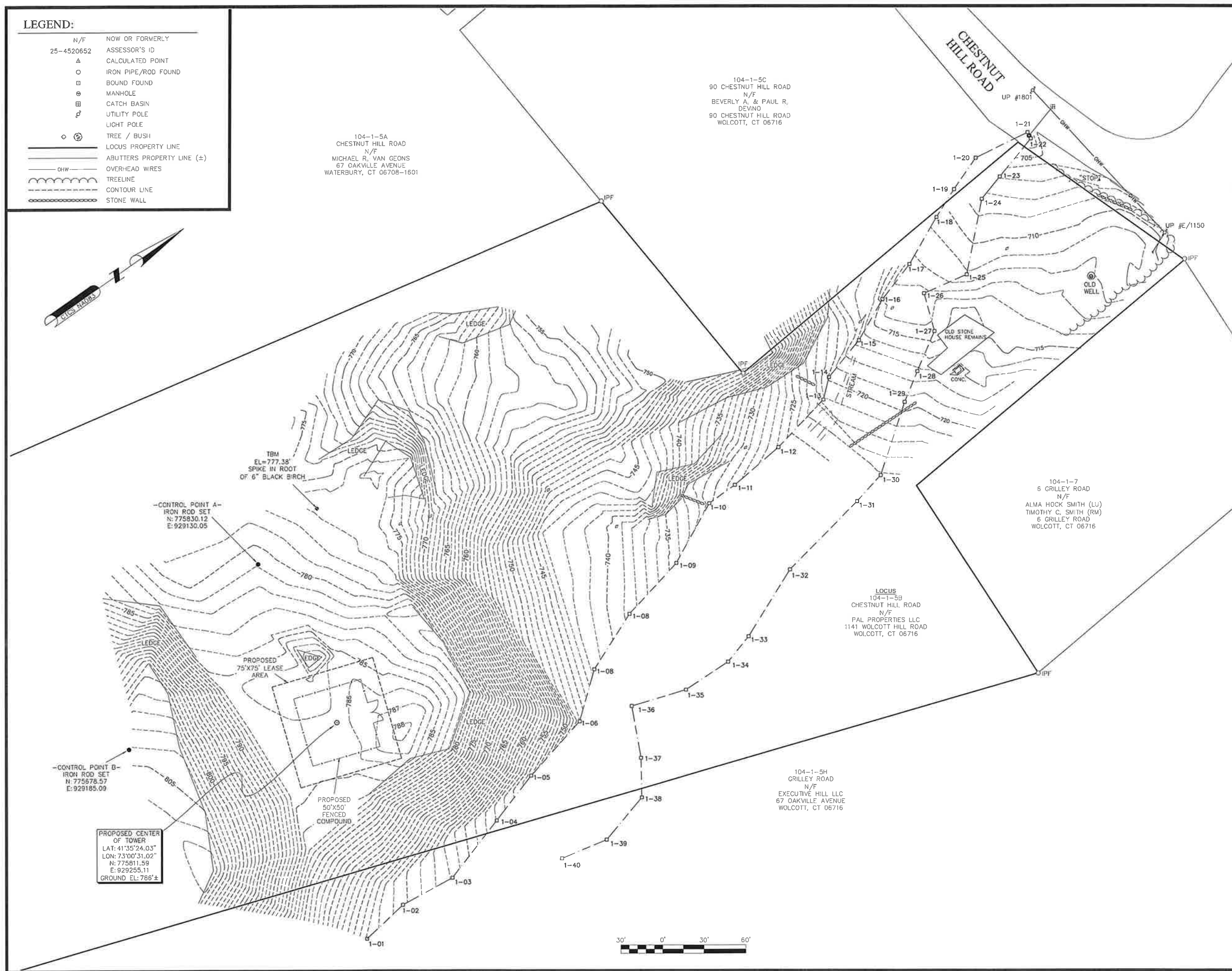
*Charles G. Gidman*  
CHARLES G. GIDMAN, P.L.S. #70103



*Charles G. Gidman*  
CHARLES G. GIDMAN, P.L.S. #70103

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- OHW OVERHEAD WIRES
- TREELINE
- CONTOUR LINE
- STONE WALL



PROPOSED CENTER OF TOWER  
 LAT: 41°35'24.03"  
 LON: 73°00'31.02"  
 N: 775811.59  
 E: 929255.11  
 GROUND EL: 786'±



PREPARED BY:  
**nexius**  
 TRANSFORM YOUR BUSINESS...THROUGH WIRELESS  
 A&E OFFICE:  
 300 APOLLO DRIVE, SUITE 7  
 CHELMSFORD, MA 01824  
 1 (978) 923-7965

APPLICANT:  
 CELLCO PARTNERSHIP d/b/a  
**verizon**  
 20 ALEXANDER DRIVE, 2<sup>ND</sup> FLOOR  
 WALLINGFORD, CT 06492

PROFESSIONAL STAMP:  
  
*Charles G. Goman*  
 CHARLES G. GOMAN, P.L.S. #70103

SUBMITTALS

REV	DATE	DESCRIPTION	BY
1	01/23/2020	SUBMITTED FOR REVIEW	BCF
2	05/11/2020	ADD TOPO AND TREES	BCF

SITE INFO:  
 SITE NAME:  
**WOLCOTT SOUTH CT**  
 LOCATION CODE:  
  
 SITE ADDRESS:  
 CHESTNUT HILL ROAD  
 WOLCOTT, CT 06716

SHEET TITLE:  
**EXISTING CONDITIONS**

NEXIUS PROJ. NO:	SHEET NUMBER:
CHECKED BY: BCF	<b>C-2</b>
CHECKED BY DATE: 05/11/2020	

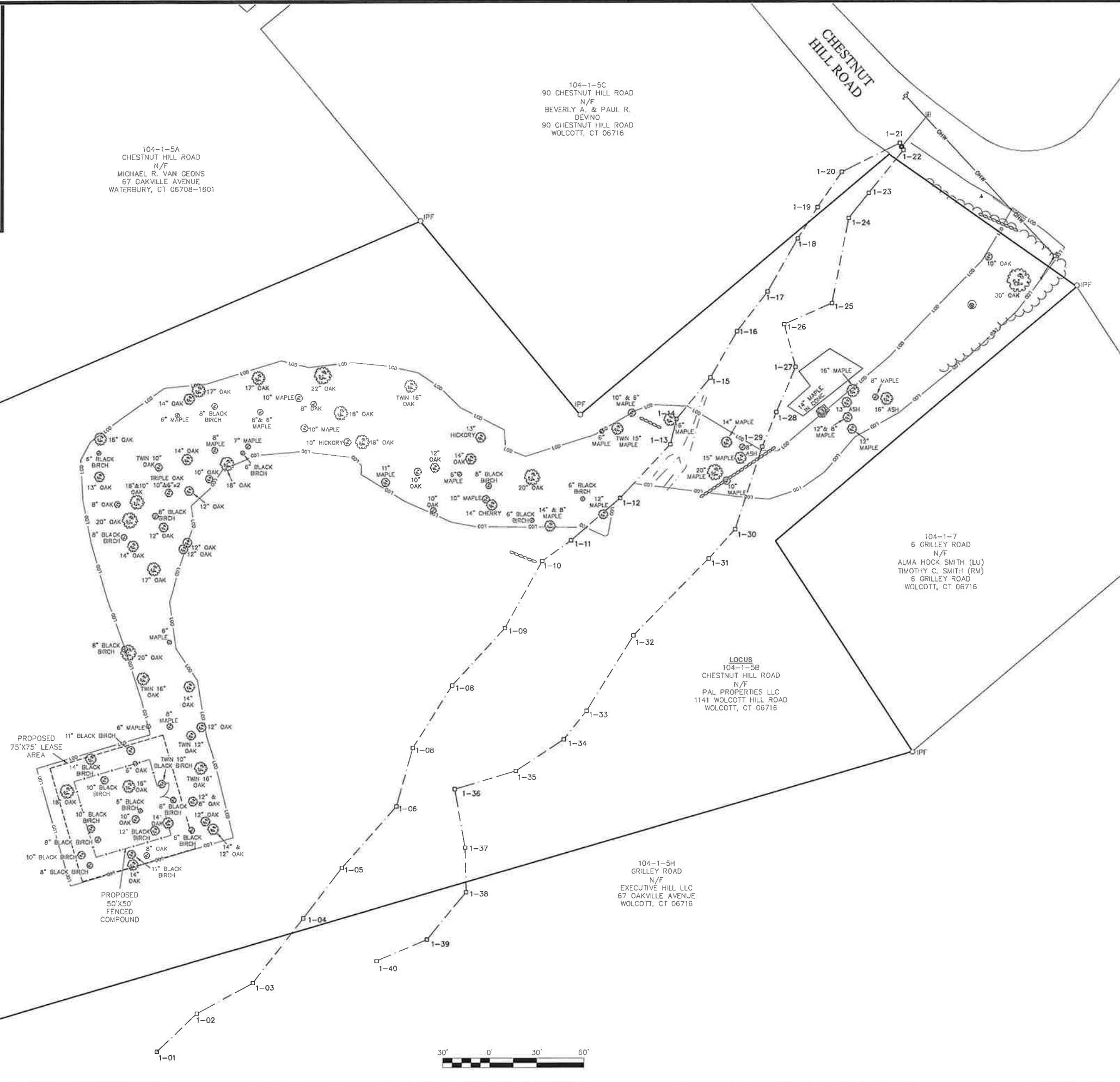


**LEGEND:**

- N/F NOW OR FORMERLY
- 25-4520652 ASSESSOR'S ID
- ▲ CALCULATED POINT
- IRON PIPE/ROD FOUND
- BOUND FOUND
- ⊕ MANHOLE
- ⊞ CATCH BASIN
- ⊕ UTILITY POLE
- ⊕ LIGHT POLE
- ⊕ TREE / BUSH
- LOCUS PROPERTY LINE
- ABUTTERS PROPERTY LINE (±)
- OHW OVERHEAD WIRES
- TREELINE
- LOD LIMIT OF DISTURBANCE
- STONE WALL



NOTE:  
ONLY TREES WITH A 6" DBH OR LARGER THAT FALL WITHIN THE LIMIT OF DISTURBANCE (LOD) ARE SHOWN HEREON



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**nexius**  
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CHELMSFORD, MA 01824  
1 (978) 923-7965

APPLICANT:  
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20 ALEXANDER DRIVE, 2<sup>ND</sup> FLOOR  
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:  
  
*Charles G. Odman*  
CHARLES G. ODMAN, P.L.S. #70103

SUBMITTALS

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SITE NAME:  
**WOLCOTT SOUTH CT**  
LOCATION CODE:  
  
SITE ADDRESS:  
CHESTNUT HILL ROAD  
WOLCOTT, CT 06716

SHEET TITLE:  
**TREE SURVEY**

NEXIUS PROJ. NO: SHEET NUMBER:  
CHECKED BY: BCF  
CHECKED BY DATE: 05/11/2020  
**C-3**

DEVELOPMENT & MANAGEMENT PLANS

NO	DATE	REVISION
0	07/26/21	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD

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

VERIZON AT  
WOLCOTT SOUTH CT

SITE CHESNUT HILL ROAD  
ADDRESS: WOLCOTT, CT 06716

APT FILING NUMBER: NY141NB7300

DRAWN BY: CSH

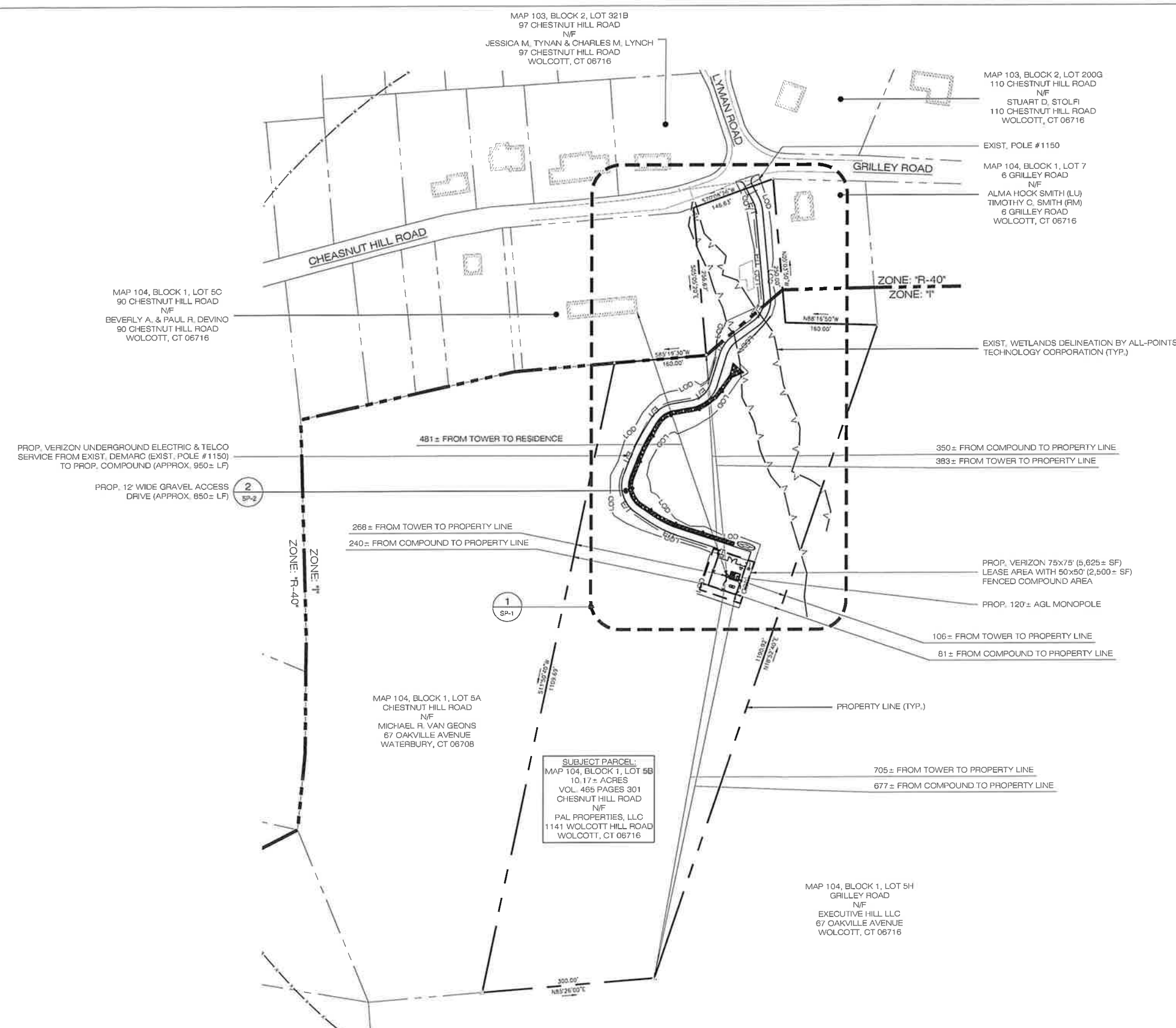
DATE: 07/26/21 CHECKED BY: RCB

SHEET TITLE:

OVERALL SITE PLAN

SHEET NUMBER:

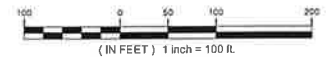
OS-1



SUBJECT PARCEL:  
MAP 104, BLOCK 1, LOT 5B  
10.17± ACRES  
VOL. 465 PAGES 301  
CHESNUT HILL ROAD  
N/F  
PAL PROPERTIES, LLC  
1141 WOLCOTT HILL ROAD  
WOLCOTT, CT 06716

1 OVERALL SITE PLAN

OS-1 SCALE: 1" = 100'-0"



BASE MAPPING FOR SHEETS OS-1 & SP-1 FROM:

- "ABUTTERS PLAN" & "EXISTING CONDITIONS" OF WOLCOTT SOUTH CT, CHESTNUT HILL ROAD, WOLCOTT CT, 06716, PREPARED FOR NEXIUS, PREPARED BY NORTHEAST SURVEY CONSULTANTS, 116 PLEASANT STREET, SUITE 302, EASTHAMPTON, MA 01027, OFFICE: (413) 203-5144
- CONTOUR DATA FROM (CT ECO - CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION & UCONN CENTER FOR LAND USE EDUCATION AND RESEARCH) 2016 USGS QUALITY LEVEL 2 LIDAR.

SITE AREAS & VOLUMES OF EARTHWORK

SITWORK ENTAILS APPROXIMATELY 3,000 CY OF EXCESS MATERIAL. THE COMPOUND AND ROADWAY WILL IMPORT APPROXIMATELY 415 CUBIC YARDS OF CLEAN BROKEN STONE. THE UTILITY TRENCH FROM THE DEMARCO TO THE COMPOUND WILL EXCAVATE APPROXIMATELY 495 CUBIC YARDS OF MATERIAL THAT WILL BE USED TO BACKFILL THE TRENCH.

COMPOUND AREA SLOPES:  
EXISTING - 0%-2%  
PROPOSED - 1.0%

TOTAL AREA OF DISTURBANCE = 48,400± SF

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

STORMWATER VOLUME:  
PROPOSED IMPERVIOUS AREA = 4,120 SF  
WATER QUALITY STD VOLUME (1") = 343 CF  
STORAGE VOLUME (6" DEPTH, 40% VOIDS) = 541 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



PREPARED BY:

**nexus**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581



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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

SITE INFO:

SITE NAME:  
**WOLCOTT\_SOUTH\_CT**  
LOCATION CODE:  
**469936**  
SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

SHEET TITLE:

**COMPOUND PLAN**

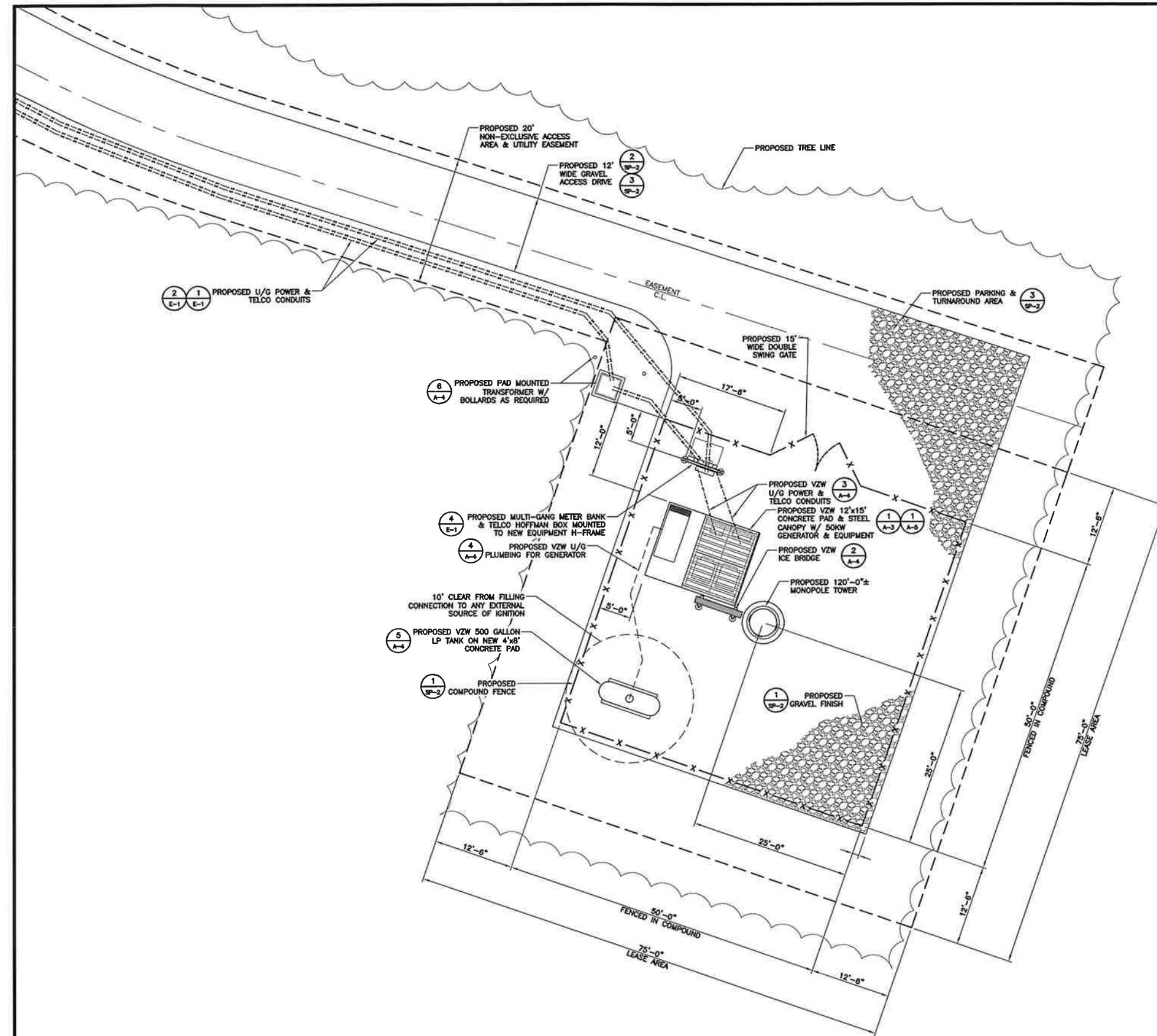
NEXIUS PROJ. NO:  
**VZ11509**

SHEET NUMBER:

CHECKED BY:  
JP

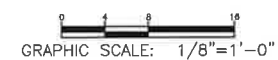
**A-1**

CHECKED BY DATE:  
01/19/22



APPROX. NORTH

**1** COMPOUND PLAN  
SCALE: 1/8" = 1'-0"



GRAPHIC SCALE: 1/8" = 1'-0"

PREPARED BY:

**nexus**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

CELCO PARTNERSHIP d/b/a  
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SITE NAME:  
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LOCATION CODE:  
**469936**  
SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

SHEET TITLE:

**TOWER ELEVATION,  
DETAILS & NOTES**

NEXIUS PROJ. NO:  
**VZ11509**

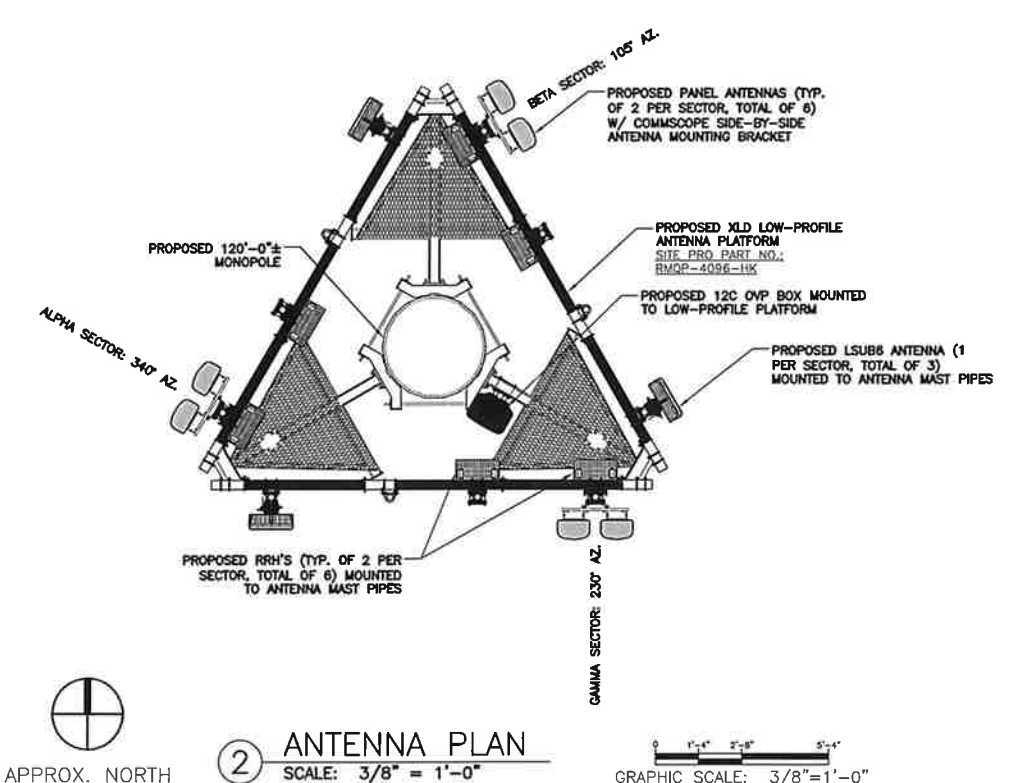
SHEET NUMBER:

CHECKED BY:  
JP

**A-2**

CHECKED BY DATE:  
01/19/22

**NOTE:**  
1. REFER TO LATEST RFDS FOR FINAL ANTENNA CONFIGURATION.



APPROX. NORTH

2 ANTENNA PLAN  
SCALE: 3/8" = 1'-0"

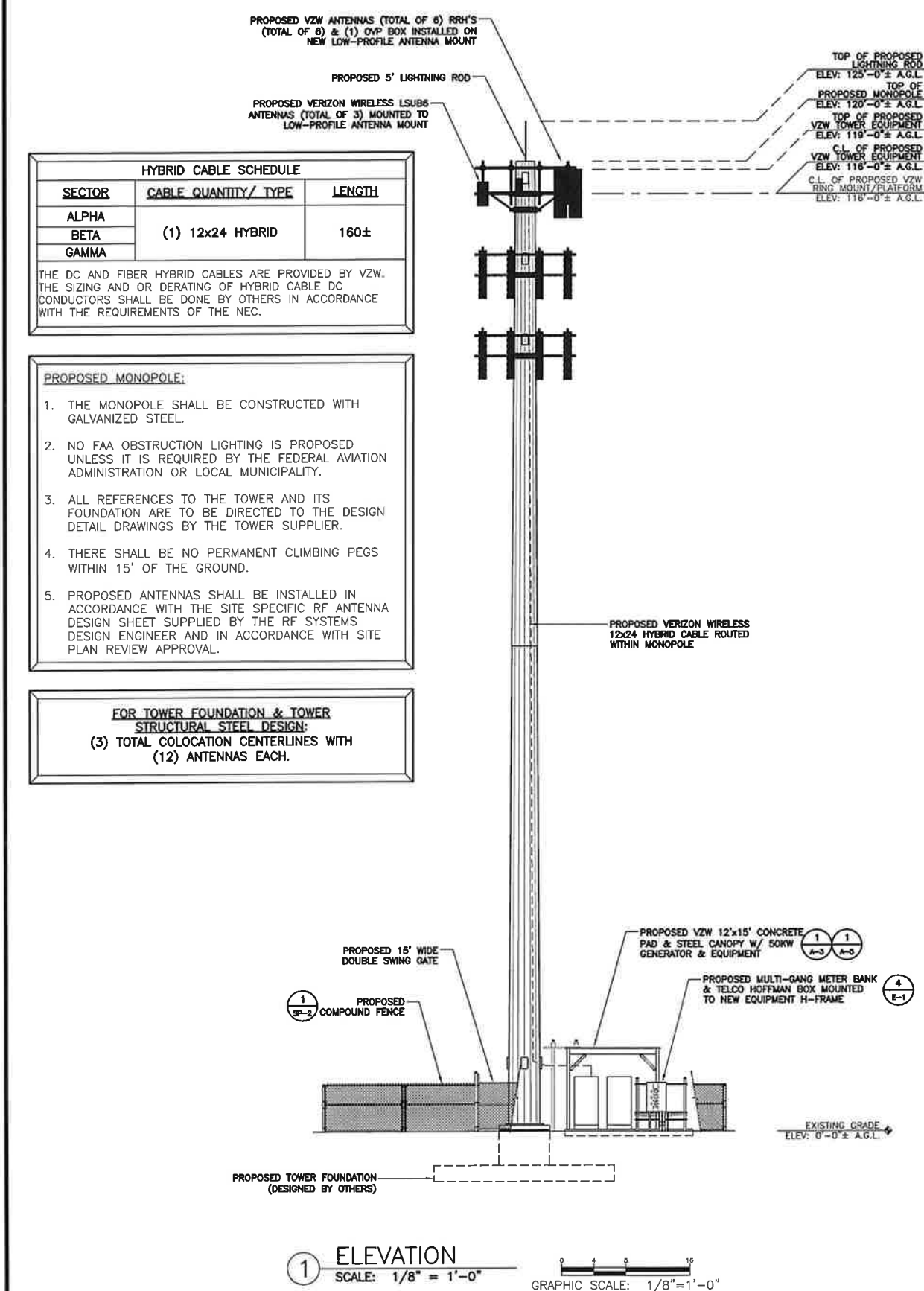
GRAPHIC SCALE: 3/8" = 1'-0"

STRUCTURAL STEEL NOTES:

- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFIRM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION" FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 "STRUCTURAL STEEL", UNLESS OTHERWISE NOTED.
- STEEL TUBING SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRAD B, OR ASTM A53 "PIPE STEEL, BLACK AND HOT DIPPED, ZINC-COATED WELDED AND SEAMLESS", TYPE E OR S, GRADE B. PIPE SIZE INDICATED ARE NOMINAL. ACTUAL ARE OUTSIDE DIAMETER IF LARGER.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE MI., OR EQUAL STRUT MEMBERS SHALL BE 1 5/8" X 1 5/8" X 12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- FIELD CONNECTIONS SHALL BE BOLTED UNLESS OTHERWISE INDICATED. ALL BOLTS FOR STRUCTURAL CONNECTIONS SHALL BE HIGH STRENGTH BOLTS AND CONFORM TO THE LATEST EDITION OF ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS, AND PLAIN HARDENED WASHERS", BOLTS SHALL BE 3/4 INCH DIA. UNLESS OTHERWISE NOTED.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATIONS FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II, OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE (4) INCHES.
- SLEEVE ANCHORS SHALL CONFORM TO FEDERAL SPECIFICATIONS FF-S-325, GROUP II, TYPE 3, CLASS 3, AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR APPROVED EQUAL. INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE (3) INCHES.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2" DIAMETER STAINLESS STEEL ANCHORS ROD WITH NUTS & WASHERS, AN INTERNAL THREADED INSERT, A SCREEN TUBE, AND AN EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE HTE HILTI HIT HY-20 SYSTEM OR ENGINEER APPROVED EQUAL WITH 6" MIN. EMBEDMENT.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
- SUBMIT SHOP DETAIL DRAWINGS OF ALL STRUCTURAL AND MISCELLANEOUS STEEL TO THE ENGINEER FOR APPROVAL, AND INCORPORATE ALL COMMENTS PRIOR TO FABRICATION.
- CONNECTIONS DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO TAKING CORRECTIVE ACTION, ANY SUCH ACTION SHALL REQUIRE PRIOR ENGINEER APPROVAL.
- ALL WORK SHALL BE INSPECTED BY THE ENGINEER DURING AND AT THE COMPLETION OF CONSTRUCTION.

WELDING:

- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE, AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES"



1 ELEVATION  
SCALE: 1/8" = 1'-0"

GRAPHIC SCALE: 1/8" = 1'-0"

HYBRID CABLE SCHEDULE		
SECTOR	CABLE QUANTITY/ TYPE	LENGTH
ALPHA	(1) 12x24 HYBRID	160±
BETA		
GAMMA		

THE DC AND FIBER HYBRID CABLES ARE PROVIDED BY VZW. THE SIZING AND OR DERATING OF HYBRID CABLE DC CONDUCTORS SHALL BE DONE BY OTHERS IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC.

- PROPOSED MONOPOLE:**
- THE MONOPOLE SHALL BE CONSTRUCTED WITH GALVANIZED STEEL.
  - NO FAA OBSTRUCTION LIGHTING IS PROPOSED UNLESS IT IS REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION OR LOCAL MUNICIPALITY.
  - ALL REFERENCES TO THE TOWER AND ITS FOUNDATION ARE TO BE DIRECTED TO THE DESIGN DETAIL DRAWINGS BY THE TOWER SUPPLIER.
  - THERE SHALL BE NO PERMANENT CLIMBING PEGS WITHIN 15' OF THE GROUND.
  - PROPOSED ANTENNAS SHALL BE INSTALLED IN ACCORDANCE WITH THE SITE SPECIFIC RF ANTENNA DESIGN SHEET SUPPLIED BY THE RF SYSTEMS DESIGN ENGINEER AND IN ACCORDANCE WITH SITE PLAN REVIEW APPROVAL.

**FOR TOWER FOUNDATION & TOWER STRUCTURAL STEEL DESIGN:**  
(3) TOTAL COLOCATION CENTERLINES WITH (12) ANTENNAS EACH.

PREPARED BY:

**nexus**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

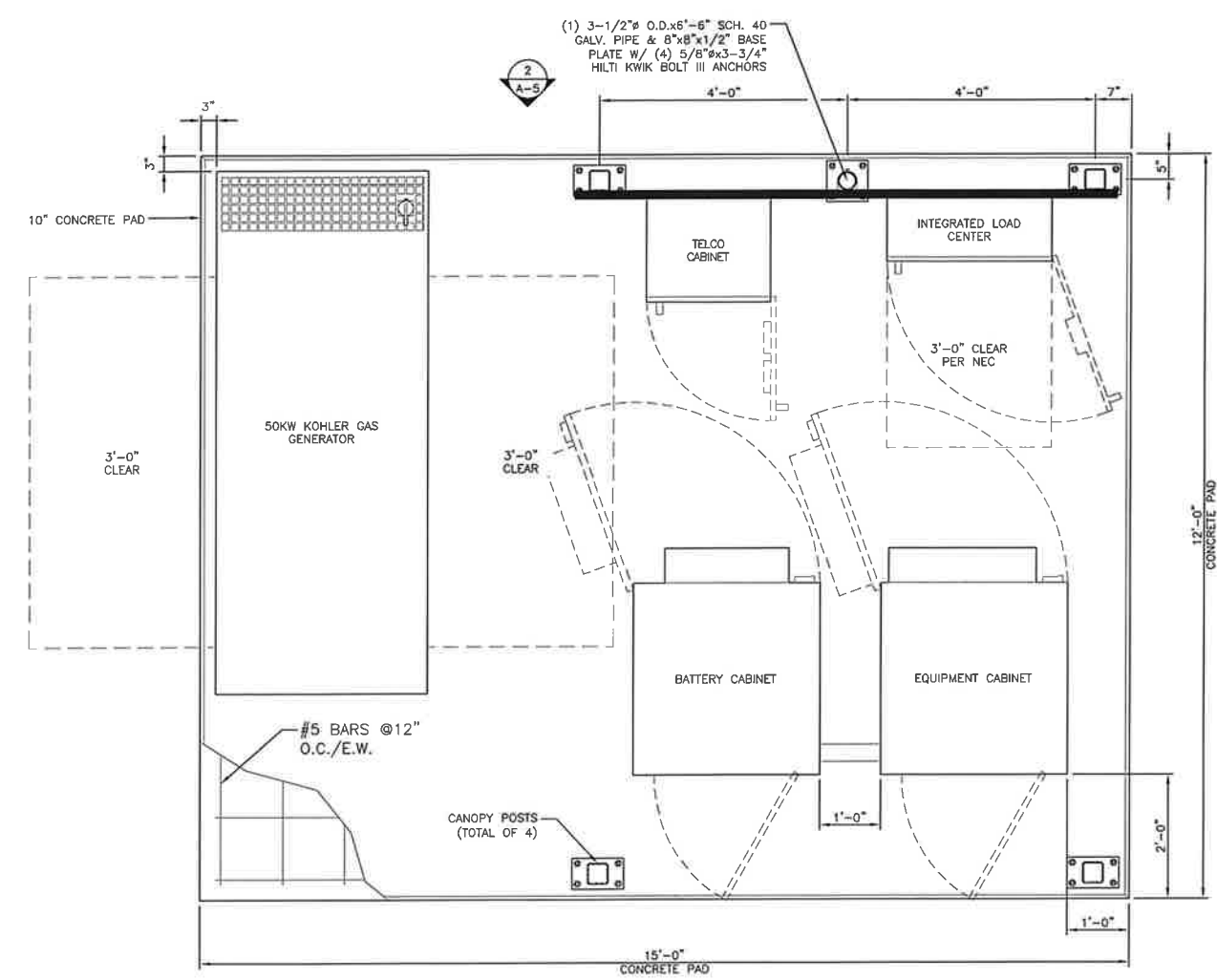
**verizon**

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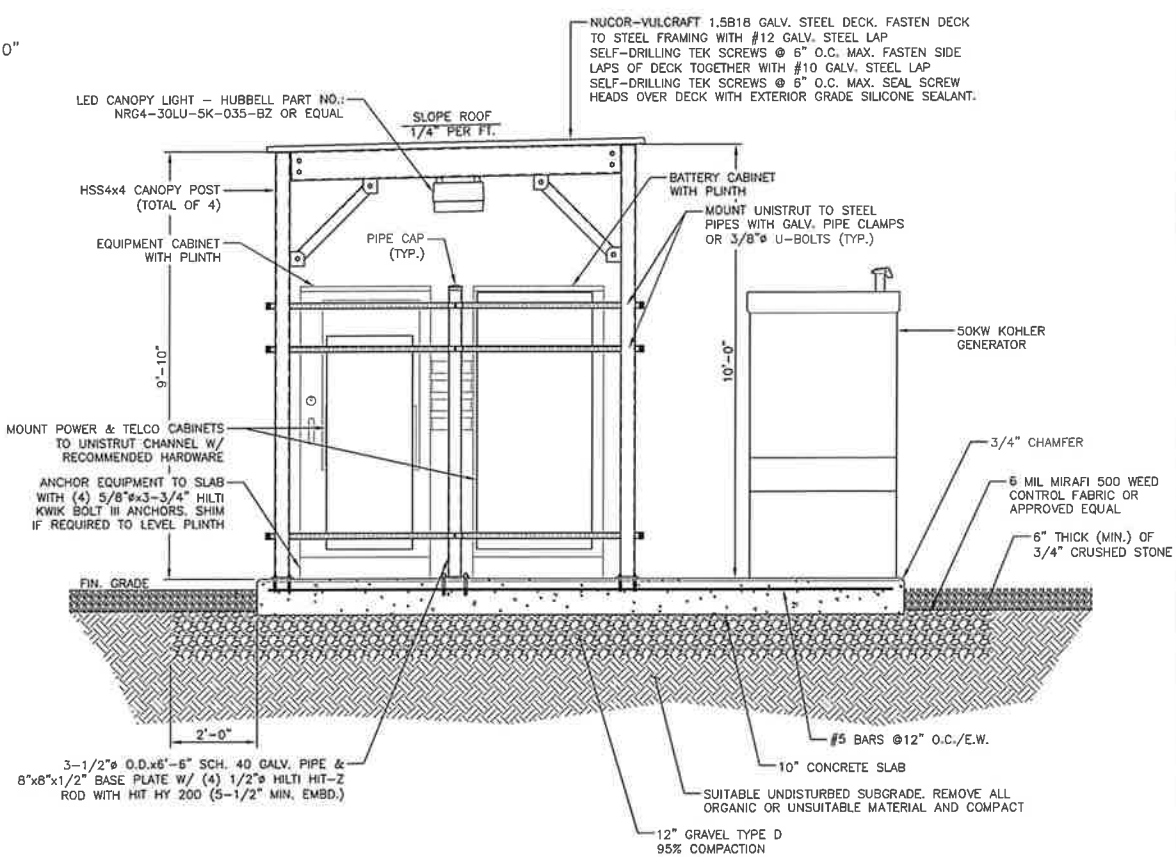


**1 EQUIPMENT PLAN**  
SCALE: 3/4" = 1'-0"



**FOUNDATION NOTES & CONCRETE SPECIFICATIONS**

- FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
- UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
- CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
- REINFORCING BAR TO BE ASTM A615 GRADE 60.
- WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
- ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
- ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.



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



SUBMITTALS			
REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
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SITE INFO:

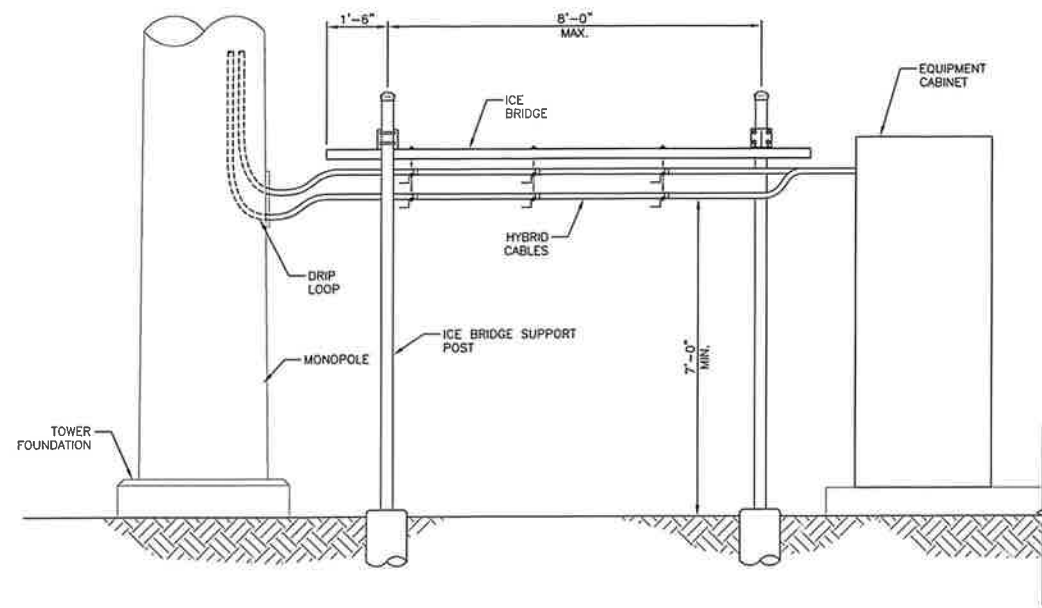
SITE NAME:  
**WOLCOTT\_SOUTH\_CT**

LOCATION CODE:  
**469936**

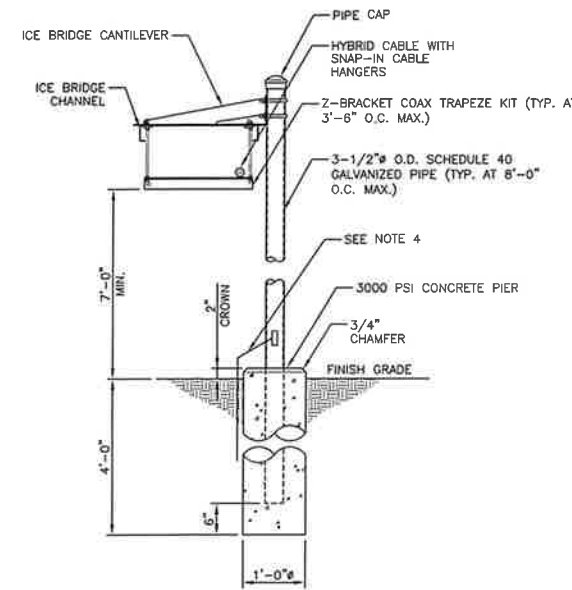
SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

SHEET TITLE:  
**EQUIPMENT PAD  
DETAILS**

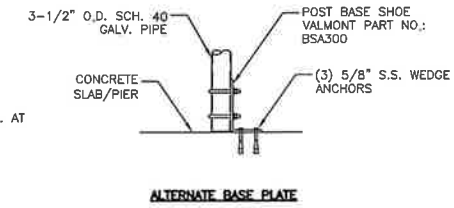
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CHECKED BY: JP	
CHECKED BY DATE: 01/19/22	



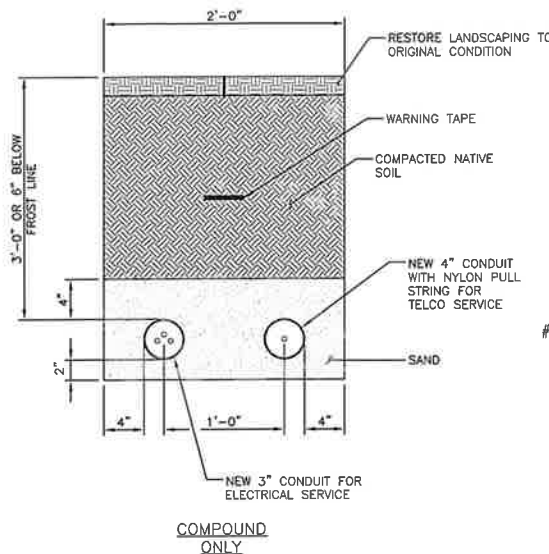
① ICE BRIDGE DETAIL  
SCALE: N.T.S.



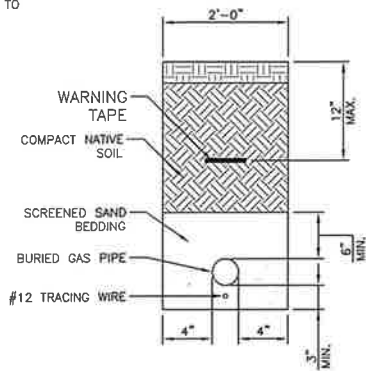
② ICE BRIDGE SUPPORT POST DETAIL  
SCALE: N.T.S.



**NOTE:**  
 1. ALL PARTS SHOWN ARE FROM SITE PRO, OR APPROVED EQUAL.  
 2. ALL STRUCTURAL STEEL & BOLTS ARE TO BE HOT DIPPED/RIGID GALVANIZED OR STAINLESS STEEL.  
 3. ALL BOLTS TO BE FURNISHED W/ WASHERS & NUTS.  
 4. #2 AWG SOLID TINNED COPPER WIRE IN 5/16\"/>

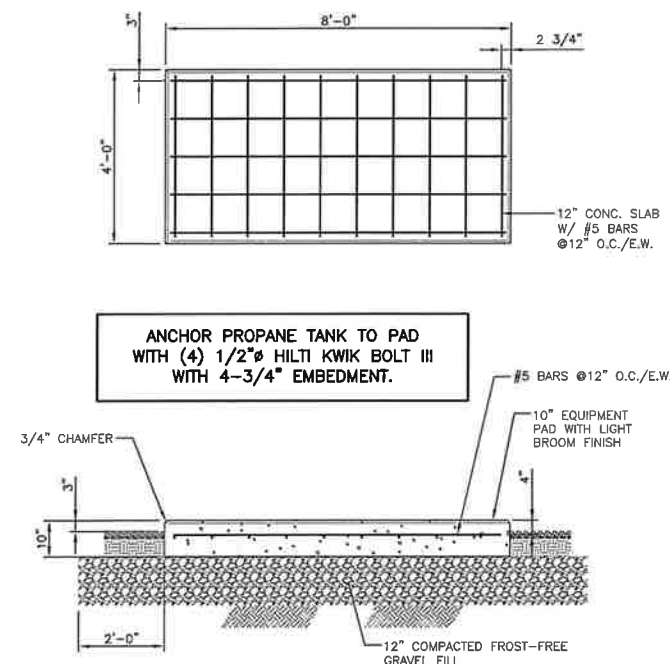


③ UTILITY TRENCH DETAIL  
SCALE: N.T.S.

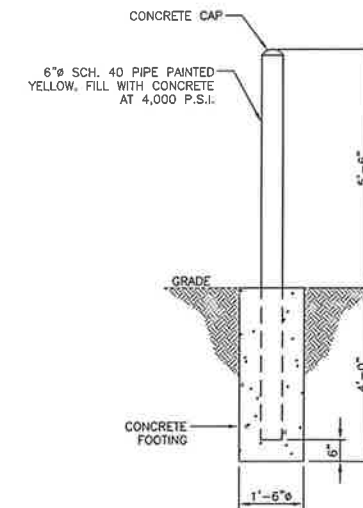


④ GAS PIPING TRENCH DETAIL  
SCALE: N.T.S.

- A MINIMUM OF 1'-0" VERTICAL CLEARANCE & 3'-0" HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN GAS LINE & ALL OTHER STRUCTURES
- MINIMUM COVER OVER THE PIPE SHALL BE MEASURED AS FOLLOWS:
  - IN THE TRAVEL LANE PORTION OF THE ROADWAY MINIMUM COVER SHALL BE 30" FROM THE TOP OF THE PIPE TO THE TOP OF THE TRENCH USING THE SHALLOW SIDE MEASUREMENT.
  - OFF THE TRAVELED PORTION WHEN THE SECTION IS SET LOWER ELEVATION THAN THE TRAVELED WAY, MINIMUM COVER SHALL BE FROM 24" FROM THE TOP OF THE TRENCH USING THE SHALLOW SIDE FOR MEASUREMENT.
  - OFF OF THE TRAVELED WAY, MINIMUM COVER SHALL BE FROM 24" WITH THE ELEVATION TAKEN FROM THE GUTTER LINE.
- MINIMUM COVER OF SERVICE LINES IN PRIVATE PROPERTY SHALL BE 18" WHEN OUTSIDE PAVED AREAS, I.E. PARKING LOT.
- THE BOTTOM OF THE TRENCH MUST BE FREE OF ROCKS, DEBRIS OR WATER THAT COULD DAMAGE THE PIPE OR ITS COATING.
- PRIOR TO LAYING PIPE, A MIN. OF 3" OF SCREENED SAND MUST BE PLACED IN THE BOTTOM OF THE TRENCH. (SCREENED SAND SHOULD BE COMPARABLE TO MASON SAND).
- THE FIRST LAYER OF PIPE PROTECTION MUST BE A MINIMUM OF 4" OF SAND ON THE SIDES & 6" OF SAND ON THE TOP.



⑤ EQUIPMENT CONCRETE PAD DETAIL  
SCALE: N.T.S.



⑥ BOLLARD DETAIL  
SCALE: N.T.S.

PREPARED BY:

**nexus**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

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 LOCATION CODE:  
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 SITE ADDRESS:  
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WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

SHEET TITLE:

SITE DETAILS

NEXIUS PROJ. NO:  
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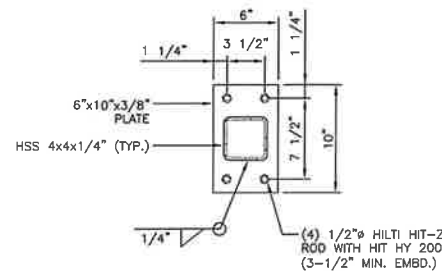
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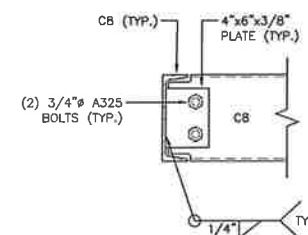
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01/19/22

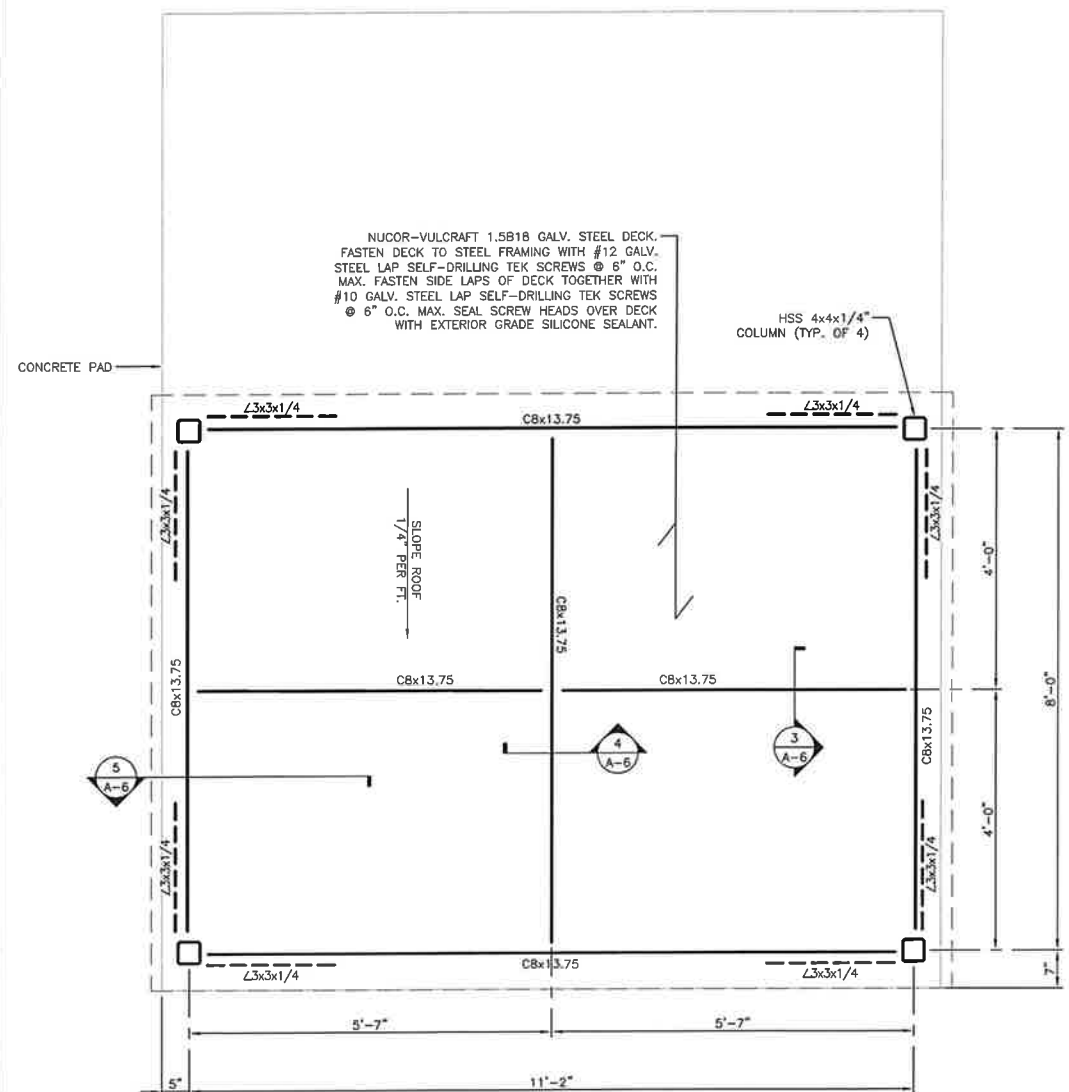
**NOTE:**  
 -ALL STRUCTURAL STEEL IS TO BE GALVANIZED.  
 -ALL BOLTS TO BE FURNISHED W/ WASHERS AND NUTS.



② CANOPY POST DETAIL  
 SCALE: N.T.S.

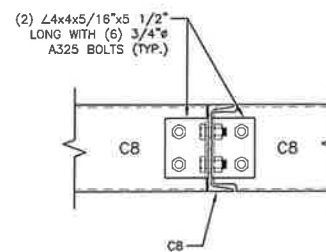


③ CANOPY SECTION  
 SCALE: N.T.S.

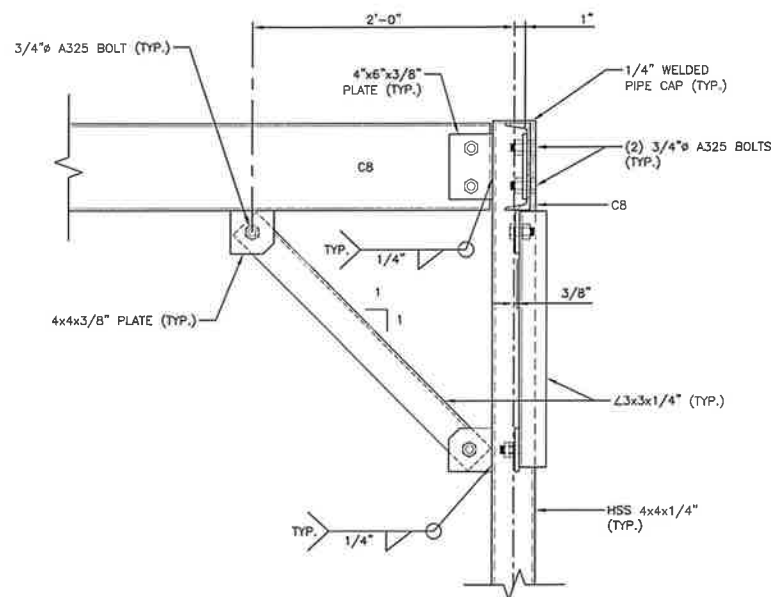


① CANOPY FRAMING PLAN  
 SCALE: 3/4" = 1'-0"

GRAPHIC SCALE: 3/4" = 1'-0"



④ CANOPY SECTION  
 SCALE: N.T.S.



⑤ CANOPY SECTION  
 SCALE: N.T.S.

PREPARED BY:

**nexius**

A&E OFFICE:  
 300 APOLLO DRIVE, 2ND FLOOR  
 CHELMSFORD, MA 01824

APPLICANT:

**verizon**

CELLCO PARTNERSHIP d/b/a  
 VERIZON WIRELESS  
 118 FLANDERS ROAD, 3RD FLOOR  
 WESTBOROUGH, MA 01581



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DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE  
 PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES  
 ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

SITE INFO:

SITE NAME:  
**WOLCOTT\_SOUTH\_CT**  
 LOCATION CODE:  
**469936**  
 SITE ADDRESS:  
**CHESTNUT HILL ROAD  
 WOLCOTT, CT 06716  
 NEW HAVEN COUNTY**

SHEET TITLE:

**CANOPY DETAILS**

NEXIUS PROJ. NO:  
**VZ11509**

SHEET NUMBER:

CHECKED BY:  
 JP

**A-5**

CHECKED BY DATE:  
 01/19/22





20 ALEXANDER DRIVE  
2ND FLOOR  
WALLINGFORD, CT 06492



567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PH: (860) 463-1697  
WWW.ALLPOINTSTECH.COM FAX: (860) 663-0935

DEVELOPMENT & MANAGEMENT PLANS

NO.	DATE	REVISION
0	07/26/21	FOR REVIEW: RCB
1		
2		
3		
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6		

DESIGN PROFESSIONALS OF RECORD

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

VERIZON AT  
WOLCOTT\_SOUTH\_CT

SITE CHESNUT HILL ROAD  
ADDRESS: WOLCOTT, CT 06716

APT FILING NUMBER: NY141NB7300

DRAWN BY: CSH

DATE: 07/26/21 CHECKED BY: RCB

SHEET TITLE:

PARTIAL SITE  
PLAN

SHEET NUMBER:

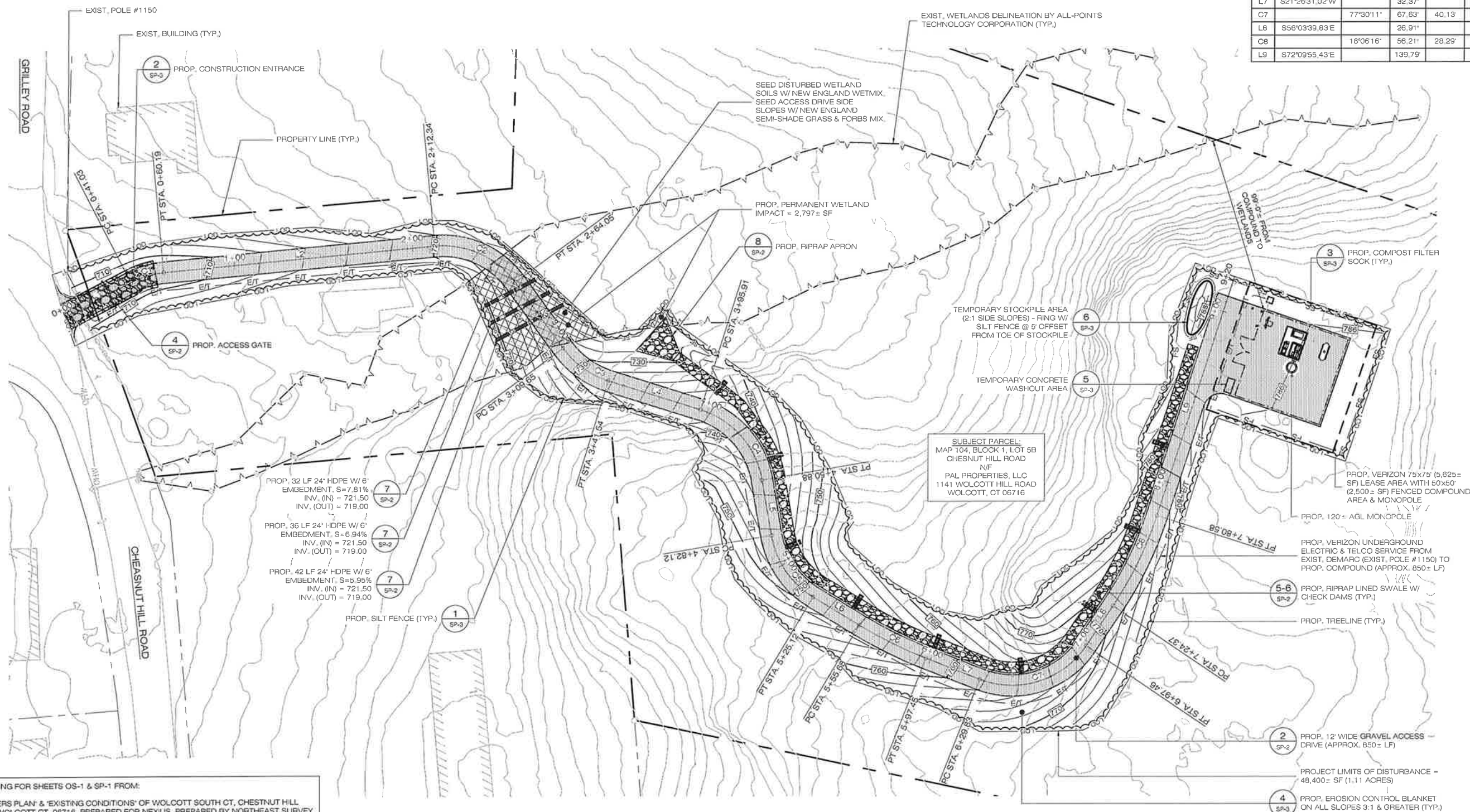
SP-1



LEGEND

- PROPERTY LINE
- WETLAND LINE
- 6' HIGH CHAIN LINK FENCE W/ BARBED WIRE
- FILTER SOCK
- SILT FENCE

ACCESS DRIVE					
NO.	BEARING	DELTA(A)	LENGTH	TANGENT	RADIUS
L1	S27°21'33.73"E		41.03'		
C1		21°57'39"	19.16'	9.70'	50.0'
L2	S5°23'55.03"E		152.15'		
C2		59°14'44"	51.70'	28.43'	50.0'
L3	S53°50'49.10"W		45.61'		
C3		36°32'23"	31.89'	16.51'	50.0'
L4	S17°18'26.58"W		54.38'		
C4		62°59'03"	54.96'	30.63'	50.0'
L5	S80°17'29.14"W		31.24'		
C5		49°16'32"	43.00'	22.93'	50.0'
L6	S31°00'57.09"W		30.56'		
C6		9°34'26"	41.77'	20.94'	250.0'
L7	S21°26'31.02"W		32.37'		
C7		77°30'11"	67.63'	40.13'	50.0'
L8	S56°03'39.83"E		26.91'		
C8		16°06'16"	56.21'	28.23'	200.0'
L9	S72°09'55.43"E		139.79'		



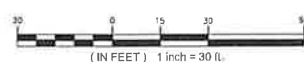
BASE MAPPING FOR SHEETS OS-1 & SP-1 FROM:

- 'ABUTTERS PLAN' & 'EXISTING CONDITIONS' OF WOLCOTT SOUTH CT, CHESTNUT HILL ROAD, WOLCOTT CT, 06716, PREPARED FOR NEXIUS, PREPARED BY NORTHEAST SURVEY CONSULTANTS, 116 PLEASANT STREET, SUITE 302, EASTHAMPTON, MA 01027, OFFICE (413) 203-5144
- CONTOUR DATA FROM (CT ECO - CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION & UCONN CENTER FOR LAND USE EDUCATION AND RESEARCH) 2016 USGS QUALITY LEVEL 2 LIDAR.

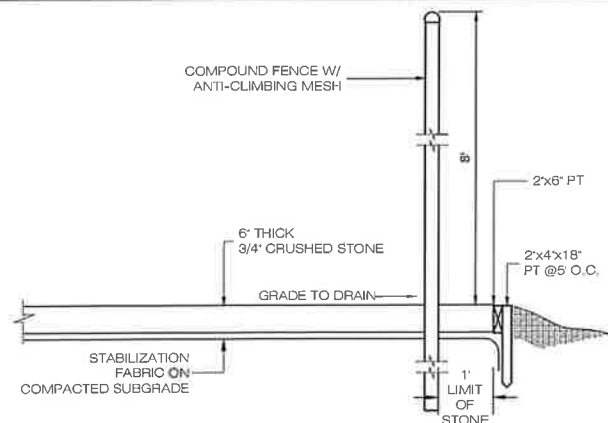


1 PARTIAL SITE PLAN

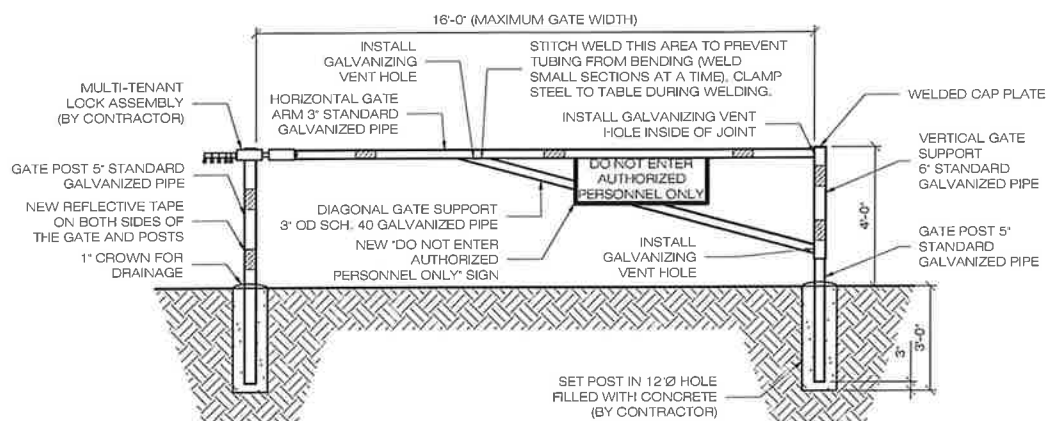
SCALE: 1" = 30'-0"



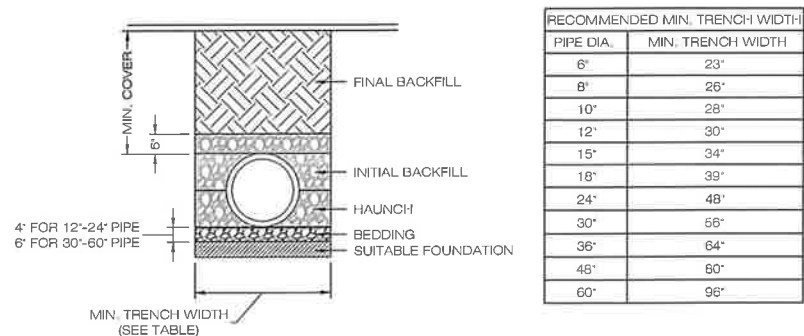




**1 COMPOUND DETAIL**  
SP-2 SCALE: N.T.S.



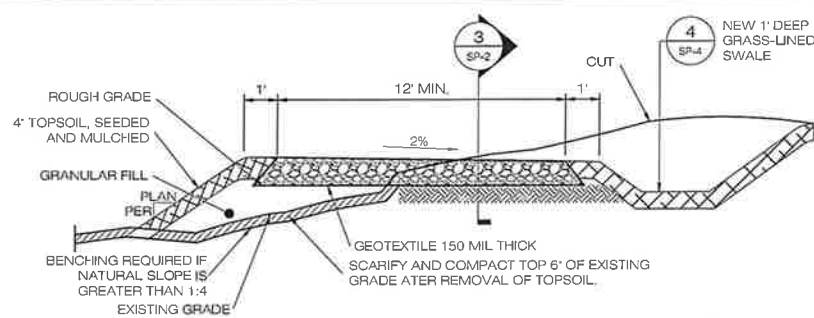
**4 ENTRANCE GATE DETAIL**  
SP-2 SCALE: N.T.S.



**NOTES:**

- 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.
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- 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.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. 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).
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III 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.
- 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.

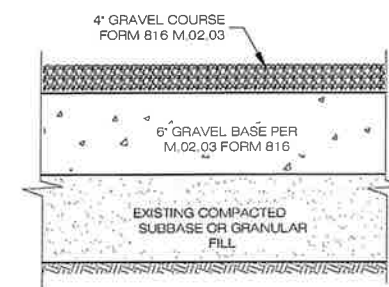
**7 HDPE STORM DRAINAGE TRENCH DETAIL**  
SP-2 SCALE: N.T.S.



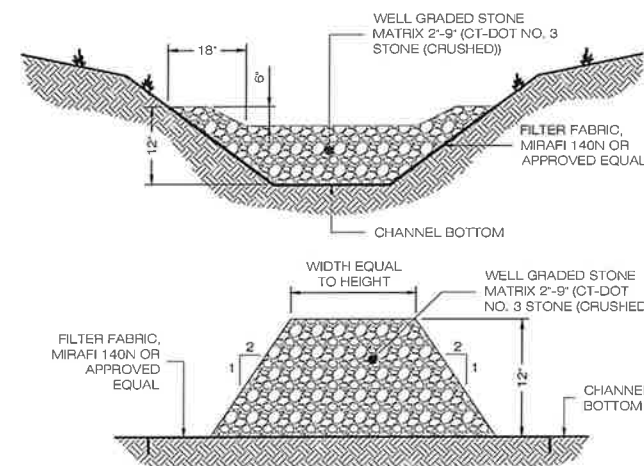
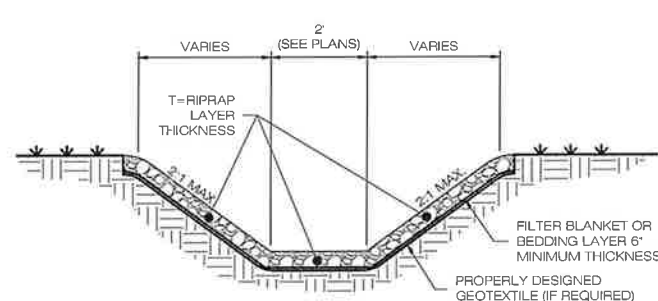
**2 TYPICAL ROAD CROSS SECTION**  
SP-2 SCALE: N.T.S.

- NOTES:**
- T=1.5 TIMES THE MAXIMUM STONE SIZE BUT NOT LESS THAN 12 INCHES.
  - THE TOTAL HEIGHT OF THE LINING IS DEPENDENT UPON THE DESIGN DEPTH OF FLOW PLUS RUNUP DUE TO CHANNEL CURVATURE, PLUS FREEBOARD IN CHANNELS WITH SIGNIFICANT BOTTOM WIDTHS LOW FLOW CHANNELS MAY BE INCORPORATED.
  - SIDE SLOPES STEEPER THAN 2:1 OR SLOPES WITH UNSUITABLE MATERIAL WILL REQUIRE ADDITIONAL ANALYSIS.
  - STONE CHECK DAMS SHALL BE INSTALLED IN ALL SWALES.

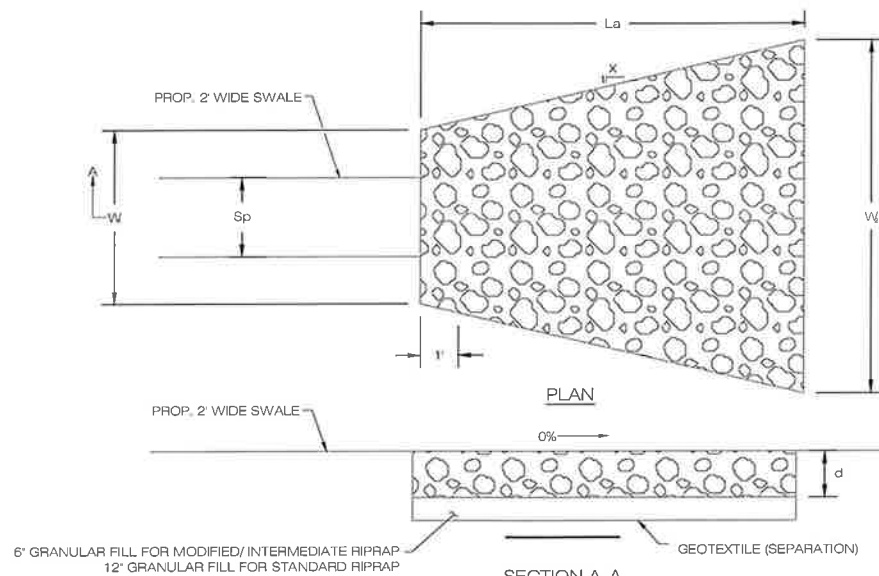
**5 RIPRAP LINED SWALE**  
SP-2 SCALE: N.T.S.



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



**6 STONE CHECK DAM**  
SP-2 SCALE: N.T.S.



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

	X	W <sub>1</sub>	W <sub>2</sub>
TYPE A RIPRAP APRON	3	3Sp	3Sp + 0.7 La
TYPE B RIPRAP APRON	5	3Sp	3Sp + 0.4 La

OUTLET (IN)	SWALE WIDTH Sp (FT)	APRON LENGTH La (FT)	APRON INITIAL WIDTH W1 (FT)	APRON TERMINAL WIDTH W2 (FT)	RIPRAP SPECIFICATION
O-1	2	19	6	25	MODIFIED

**8 RIPRAP APRON**  
SP-2 SCALE: N.T.S.

**DEVELOPMENT & MANAGEMENT PLANS**

NO	DATE	REVISION
0	07/26/21	FOR REVIEW: RCB
1		
2		
3		
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6		

**DESIGN PROFESSIONALS OF RECORD**

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

**VERIZON AT WOLCOTT\_SOUTH\_CT**

SITE CHESNUT HILL ROAD  
ADDRESS: WOLCOTT, CT 06716

APT FILING NUMBER: NY141NB7300

DRAWN BY: CSH

DATE: 07/26/21 CHECKED BY: RCB

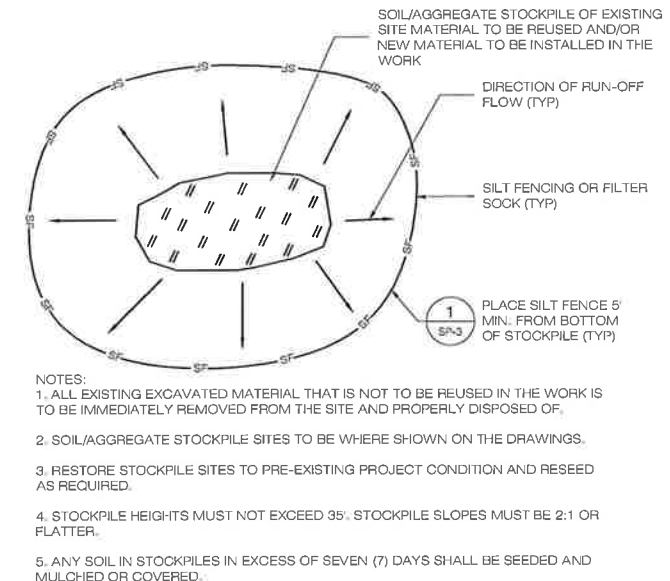
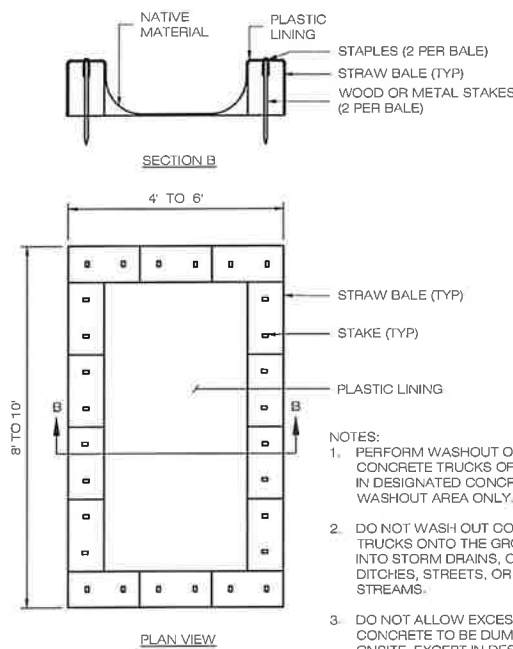
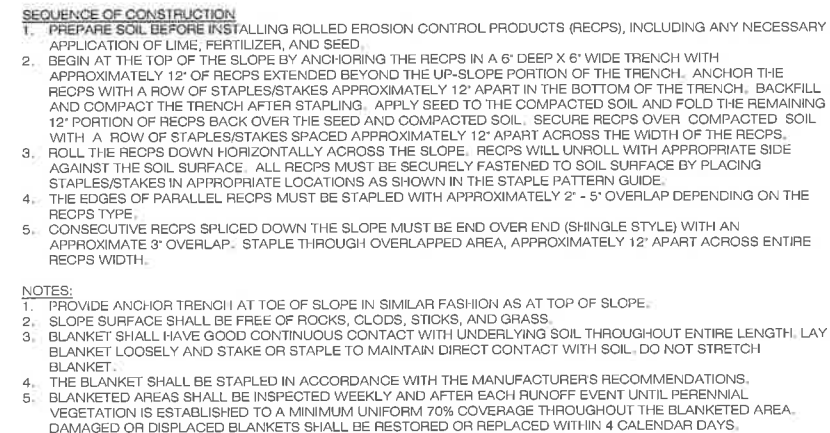
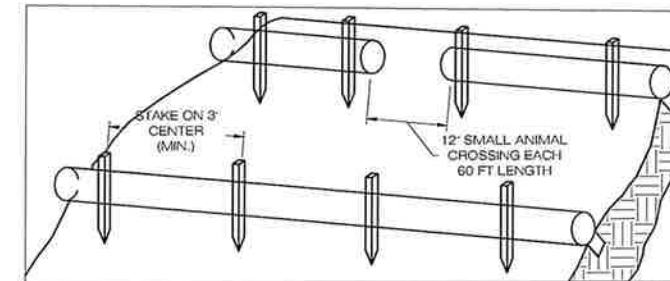
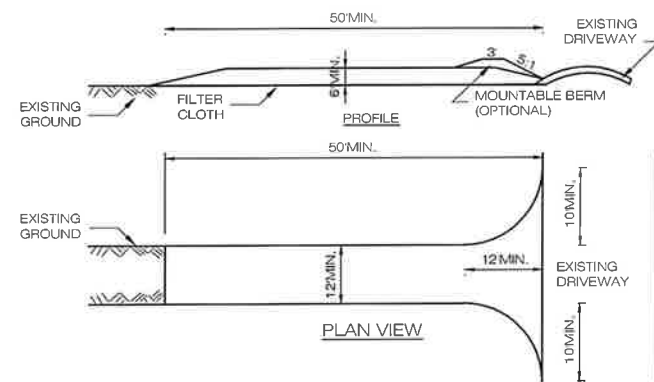
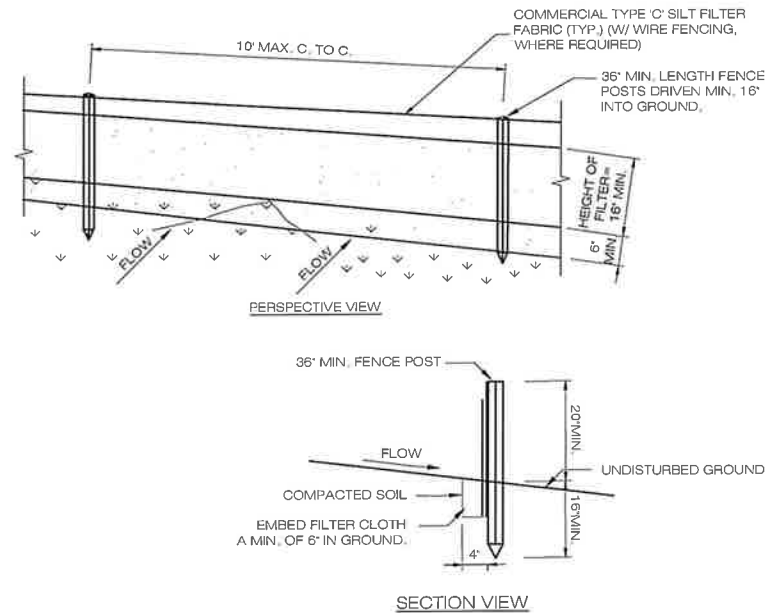
**SHEET TITLE:**

**SITE DETAILS**

SHEET NUMBER:

**SP-2**





NO	DATE	REVISION
0	07/28/21	FOR REVIEW: RCB
1		
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PROF: ROBERT C. BURNS P.E.  
COMP: ALL POINTS TECHNOLOGY CORP.  
ADD: 567 VAUXHALL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385



DEVELOPMENT & MANAGEMENT PLANS

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WOLCOTT\_SOUTH\_CT

SITE CHESNUT HILL ROAD  
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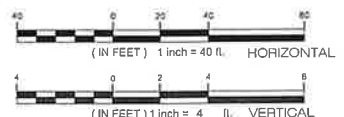
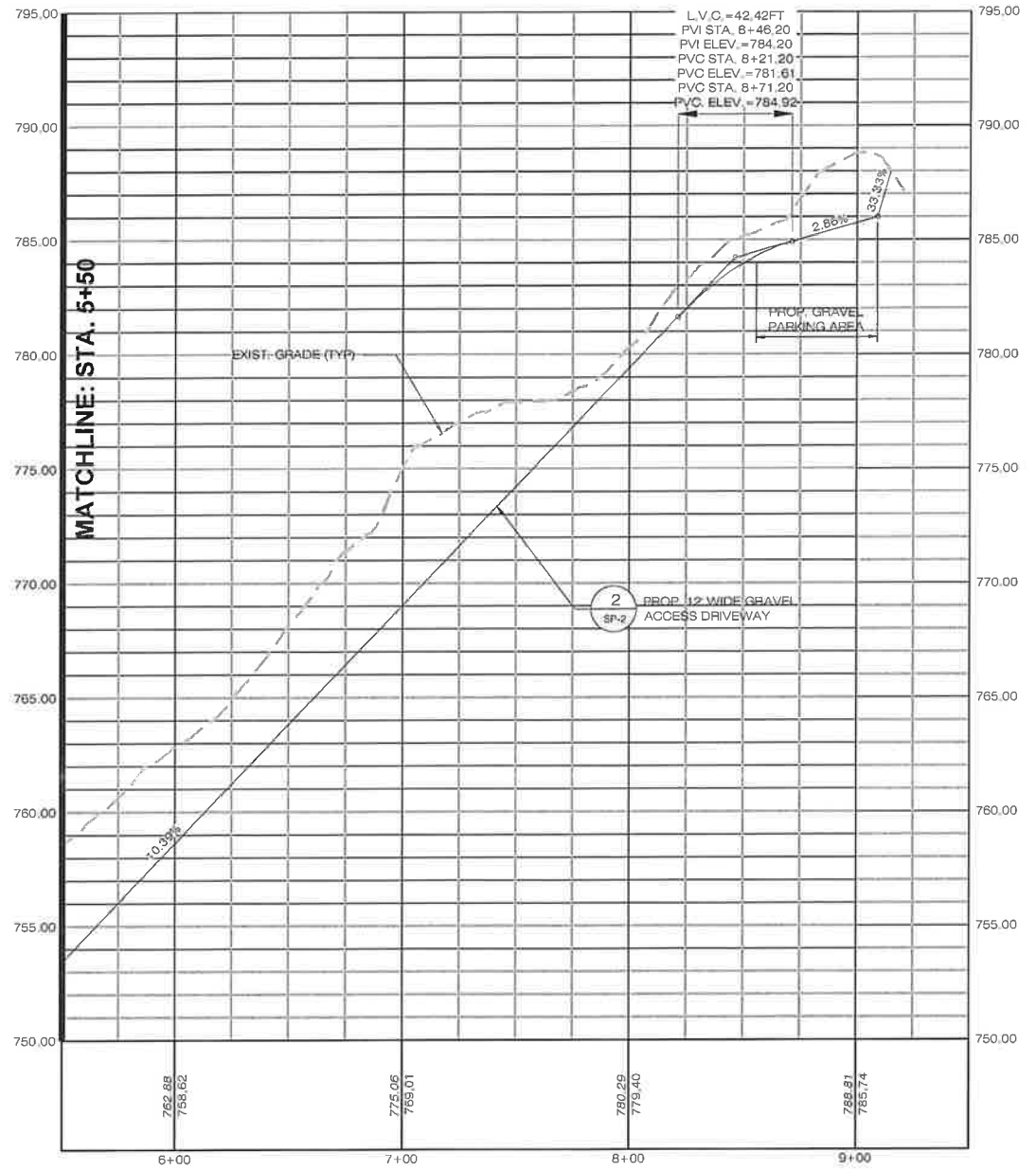
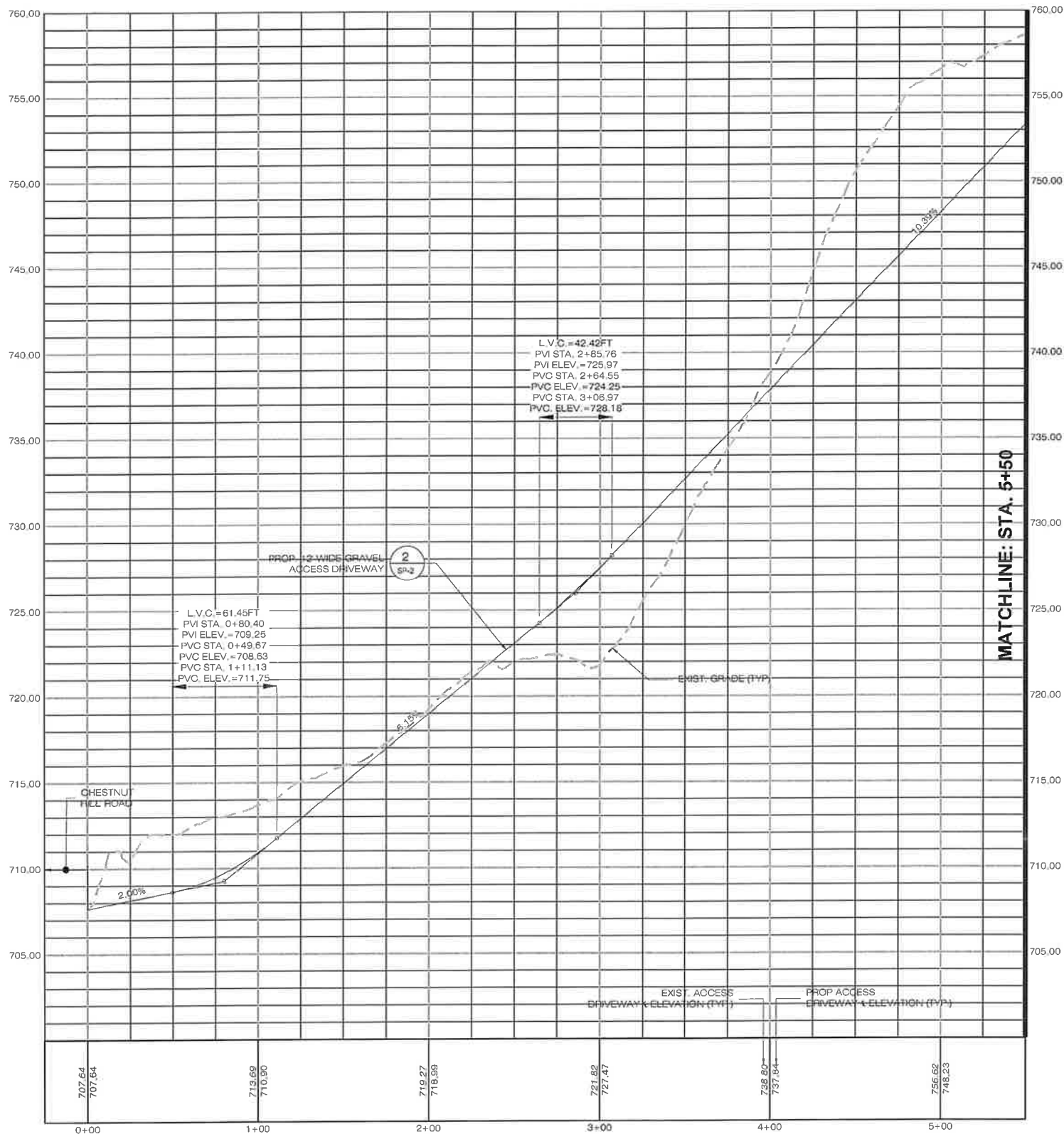
DATE: 07/26/21 CHECKED BY: RCB

SHEET TITLE:

ACCESS DRIVEWAY  
PROFILE

SHEET NUMBER:

SP-4



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

# EROSION CONTROL NOTES

## EROSION AND SEDIMENT CONTROL PLAN NOTES

- 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 WOLCOTT, 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.
- 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.
- A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 HYDROSEEDDED WITH TACKIFIER.
- 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 AGGRESSIVE ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
- 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.
- 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.
- SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX, OR APPROVED EQUAL BY OWNER.

## SEDIMENT & EROSION CONTROL NARRATIVE

- THE PROJECT INCLUDES THE INSTALLATION OF A 120± AGL 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 120± AGL MONOPOLE.
    - C. CONSTRUCTION OF 50x50' (2,500± SF) FENCED EQUIPMENT COMPOUND W/ GRAVEL SURFACE TREATMENT AND ASSOCIATED UTILITIES.
    - D. CONSTRUCTION OF 850± 10' WIDE GRAVEL ACCESS DRIVE.
    - E. CONSTRUCTION OF 12x16' CONCRETE EQUIPMENT PAD & 4x8' CONCRETE PAD WITH 250 GALLON PROPANE TANK.
    - F. THE STABILIZATION OF PERVIOUS DISTURBED AREAS WITH PERMANENT GRASS TREATMENTS.
- FOR THIS PROJECT, THERE ARE APPROXIMATELY 48,400± SF OF THE SITE BEING DISTURBED.
- A GEOTECHNICAL ENGINEERING REPORT HAS BEEN COMPLETED FOR THIS PROJECT AND WILL BE AVAILABLE UNDER SEPARATE COVER.
- IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 12 WEEKS.
- REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
- MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
- 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.
- 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.

- 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.
- 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.
- 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.
- CLEAR AND GRUB AS REQUIRED, TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION.
- INSTALL CONSTRUCTION ENTRANCE.
- 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.
- TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
- EXCAVATE AND GRADE NEW ACCESS DRIVE.
- EXCAVATE AND ROUGH GRADE EQUIPMENT COMPOUND.
- EXCAVATE FOR TOWER FOUNDATION & EQUIPMENT PADS.
- FINALIZE ACCESS ROAD GRADES.
- PREPARE SUBGRADE AND INSTALL FORMS, STEEL REINFORCING, & CONCRETE FOR TOWER FOUNDATION & EQUIPMENT PADS.
- INSTALL BURIED GROUND RINGS, GROUND RODS, GROUND LEADS, UTILITY CONDUITS & UTILITY EQUIPMENT.
- BACKFILL TOWER FOUNDATION.
- ERECT MONOPOLE.
- INSTALL TELECOMMUNICATIONS EQUIPMENT ON TOWER & COMPOUND.
- INSTALL COMPOUND GRAVEL SURFACES.
- FINALIZE GRADES, INSTALL GRAVEL SURFACES, PAVE ACCESS DRIVE.
- INSTALL FENCING.
- CONNECT GROUNDING LEADS & LIGHTNING PROTECTION.
- FINAL GRADE AROUND COMPOUND.
- LOAM & SEED DISTURBED AREAS OUTSIDE COMPOUND, AS REQUIRED.
- TEST ALL NEW EQUIPMENT.
- AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE OWNER, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.
- 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	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE, OR CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
HAY BALES	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED, REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE BALE.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED, REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED, REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE SOCK.
SILT SACKS	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED, REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE SACK.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
WATER BARS	DAILY	REPAIR/RESHAPE AS NECESSARY, REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE WATER BAR.
TEMPORARY DIVERSION DITCHES	DAILY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REPAIR/RESHAPE AS NECESSARY, REVIEW CONDITIONS IF REPETITIVE FAILURES OCCUR.
TEMPORARY SEDIMENT TRAPS/BASINS	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	REMOVE SEDIMENT WHEN IT REACHES 1/2 OF THE MINIMUM REQUIRED WET STORAGE VOLUME.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"	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>Omalcea sensibilis</i>	Sensitive Fern	FACW
<i>Aster prenanthoides (Synphyonichnum 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.

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### 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 (Synphyotrichum lateriflorum)</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.

## Cellco Partnership d/b/a



20 ALEXANDER DRIVE  
 2ND FLOOR  
 WALLINGFORD, CT 06492



567 VAUXHALL STREET EXTENSION - SUITE 311  
 WATERFORD, CT 06385 PH: (860)-663-1897  
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0635

## DEVELOPMENT & MANAGEMENT PLANS

NO	DATE	REVISION
0	07/26/21	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

## DESIGN PROFESSIONALS OF RECORD

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

## VERIZON AT WOLCOTT\_SOUTH\_CT

SITE CHESNUT HILL ROAD  
 ADDRESS: WOLCOTT, CT 06716

APT FILING NUMBER: NY141NB7300

DRAWN BY: CSH

DATE: 07/26/21 CHECKED BY: RCB

## SHEET TITLE:

## EROSION CONTROL NOTES

SHEET NUMBER:

EC-1





# ENVIRONMENTAL NOTES - RESOURCES PROTECTION MEASURES

## WETLAND AND VERNAL POOL PROTECTION PROGRAM

AS A RESULT OF THE VERIZON WIRELESS PROJECT'S ACCESS ROAD WETLAND CROSSING, AND ITS LOCATION IN THE VICINITY OF SENSITIVE WETLAND RESOURCES AND VERNAL POOL HABITAT, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IMPLEMENTED BY THE CONTRACTOR TO AVOID UNINTENTIONAL IMPACTS TO PROXIMATE WETLAND RESOURCES OR MORTALITY TO VERNAL POOL HERPETOFAUNA (I.E. WOOD FROG, SALAMANDERS, TURTLES, ETC.) DURING CONSTRUCTION ACTIVITIES. THE VERNAL POOL SPECIFIC BMP'S SHALL BE IMPLEMENTED SHOULD CONSTRUCTION ACTIVITIES OCCUR DURING PEAK AMPHIBIAN MOVEMENT PERIODS (EARLY SPRING BREEDING (MARCH 1ST TO MAY 15TH) AND LATE SUMMER DISPERSAL (JULY 15TH TO SEPTEMBER 15TH)). BMP'S ASSOCIATED WITH THE PROTECTION OF WETLANDS WILL BE IMPLEMENTED REGARDLESS OF THE TIME OF YEAR.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLY 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 PROJECTS PROXIMITY TO SENSITIVE WETLAND RESOURCES AND ASSOCIATED HERPETOFAUNA 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) 562-2033 OR VIA EMAIL AT DGUSTAFSON@ALLPOINTSTECH.COM.

THE PROPOSED WETLAND AND VERNAL POOL 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, 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

- 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 HERPETOFAUNA (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 VERNAL POOL RESOURCES WILL BE INSPECTED PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION TO ENSURE THE AREA IS FREE OF HERPETOFAUNA AND SATISFACTORILY INSTALLED. THE INTENT OF THE BARRIER IS TO SEGREGATE THE MAJORITY OF THE WORK ZONE FROM MIGRATING/DISPERSING HERPETOFAUNA. OFTIMES 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 DEFLLECT MIGRATING/DISPERSAL ROUTES AWAY FROM THE WORK ZONE TO MINIMIZE POTENTIAL ENCOUNTERS WITH HERPETOFAUNA 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 REPTILE AND AMPHIBIAN 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 PROJECTS LOCATION IN PROXIMITY TO WETLAND RESOURCES.
- 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.
  - i. 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 MATERIAL 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 AND VERNAL POOL 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 MOVING TOWARD THE VERNAL POOLS. 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 CROSSING, CULVERT INSTALLATION & RESTORATION

- a. THE CONTRACTOR SHALL CONTACT APT A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION OF THE WETLAND CROSSING IN ORDER TO MONITOR INSTALLATION OF THE THREE CULVERTS.
- b. INSTALLATION OF THE THREE CULVERTS 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 CROSSING AND CULVERTS WILL NOT IMPEDE OR ADVERSELY IMPACT CONVEYANCE OF EXISTING SURFACE FLOWS THROUGH THE WETLAND SYSTEM.
- c. 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 SEEDING AREAS WITH NON-WOVEN NATURAL FIBER EROSION CONTROL BLANKET OR 2 TO 3 INCHES OF CLEAN STRAW MULCH AS APPROPRIATE.

### 6. 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.

### 7. REPORTING

- a. DAILY COMPLIANCE MONITORING REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) DOCUMENTING EACH APT INSPECTION WILL BE SUBMITTED BY APT TO VERIZON WIRELESS 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 VERIZON WIRELESS DOCUMENTING IMPLEMENTATION OF THE WETLAND AND VERNAL POOL PROTECTION PROGRAM AND MONITORING OBSERVATIONS. VERIZON WIRELESS 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.

Cellco Partnership d/b/a



20 ALEXANDER DRIVE  
2ND FLOOR  
WALLINGFORD, CT 06492



567 VALUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PH: (860)-463-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-463-0935

### DEVELOPMENT & MANAGEMENT PLANS

NO	DATE	REVISION
0	07/26/21	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

### DESIGN PROFESSIONALS OF RECORD

PROF: ROBERT C. BURNS P.E.  
COMP: ALL POINTS TECHNOLOGY CORP.  
ADD: 567 VALUXHALL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

### VERIZON AT WOLCOTT\_SOUTH\_CT

SITE CHESNUT HILL ROAD  
ADDRESS: WOLCOTT, CT 06716

APT FILING NUMBER: NY141NB7300

	DRAWN BY: CSH
DATE: 07/26/21	CHECKED BY: RCB

SHEET TITLE:

### ENVIRONMENTAL NOTES

SHEET NUMBER:

N-1

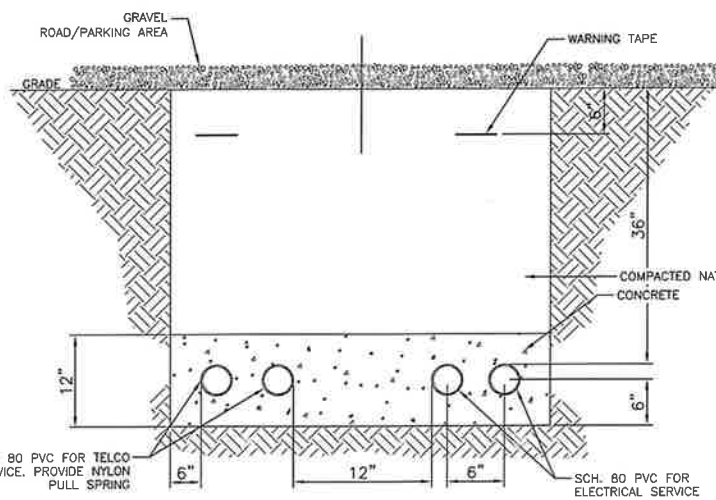


**VZW GENERAL ELECTRICAL NOTES:**

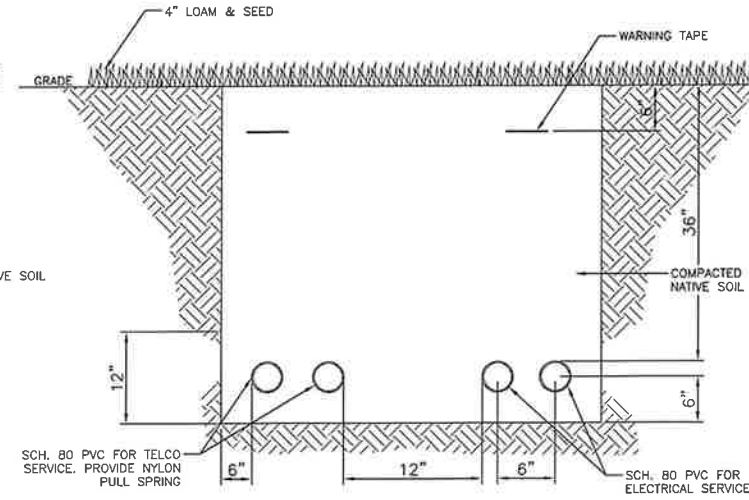
- SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT. CONTRACTOR IS RESPONSIBLE FOR ALL FIELD VERIFICATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY AND NOT TO BE SCALED.
- UTILITY SERVICES SHOWN ARE PROPOSED, THE ELECTRIC CONTRACTOR SHALL COORDINATE EXACT TELEPHONE AND ELECTRIC SERVICE CONNECTION POINTS, PULL BOXES, ROUTING AND ASSOCIATED REQUIREMENTS WITH LOCAL UTILITY COMPANIES.
- VISIT THE SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED. REPORT ADVERSE CONDITIONS IN WRITING. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS INCLUDING PREPARATORY WORK DONE BY OTHERS.
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ALL CONDUCTORS SHALL BE COPPER. ALL WIRING DEVICES AND EQUIPMENT SHALL BE SPECIFICATION GRADE AND UL LISTED AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, AND NBFU.
- ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. ALL METALLIC CONDUITS SHALL BE PROVIDED WITH BONDING BUSHINGS. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDED USING COMPRESSION-TYPE CONDUIT FITTINGS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTORS. CRIMP-TYPE AND SET SCREW-TYPE CONDUIT FITTINGS ARE NOT ALLOWED.
- CONTRACTOR SHALL CARRY OUT THE WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY, LOCAL CODES, AND BY O.S.H.A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES AND SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE.
- ELECTRICAL CONTRACTOR SHALL GIVE NOTICES, FILE PLANS, OBTAIN ELECTRICAL PERMITS AND LICENSES, PAY REQUIRED FEES AND BACK CHARGES AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.
- THE CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOK-UP COSTS SHALL BE PAID BY THE CONTRACTOR.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANY AND FIELD CONSTRUCTION MANAGER. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY SUPPORTS FOR CONDUIT RUNS ALONG WALL AND CEILING IN ACCORDANCE WITH SPECIFICATIONS. CONDUITS INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS.
- LOCATION OF TENDONS AND RE-BARS ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY, OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING STEEL TENDONS.
- UPON DRILLING HOLES INTO CONCRETE, WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC. IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND REBARS WILL NOT BE DRILLED INTO, CUT, OR DAMAGED UNDER ANY CIRCUMSTANCES.
- PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH APPLICABLE LOCAL BUILDING CODES. USING U.L. RATED MATERIALS
- PROVIDE "FIRE FLANGE" RATED PENETRATIONS FOR PIPES AND CONDUITS THROUGH RATED WALL

- CONSTRUCTION. CAULK AS REQUIRED WITH 3M BRAND FIRE BARRIER CAULK OR APPROVED EQUAL.
- ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE RIGID STEEL SLEEVES. ALL EXTERIOR WALL PENETRATIONS SHALL BE SILICONE SEALED.
- PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- ALL EXISTING UNDERGROUND LINES ON SITE SHALL BE LOCATED PRIOR TO CONSTRUCTION.
- ALL CONDUITS SHALL HAVE A PULL ROPE, MULE TAPE OR APPROVED EQUAL.
- ALL CIRCUIT BREAKERS, FUSES, AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED AND A MINIMUM OF 10,000 AIC.
- MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA AND CBM APPROVED FOR INTENDED SERVICE. INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODES.
- ALL WIRING SHALL BE TYPE THWN RATED 75°C, 600V, WET OR DRY LOCATIONS. MINIMUM BRANCH CIRCUIT WIRING SHALL BE #12 AWG SOLID COPPER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL TELEPHONE COMPANY AS MAY BE REQUIRED FOR THE INSTALLATION OF TELEPHONE SERVICE TO THE PROPOSED SITE
- CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETED AND UNDAMAGED CONDITION.
- PROVIDE THE OWNER WITH ONE SET OF COMPLETE ELECTRICAL "AS BUILT" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS AND CIRCUITS, WITHIN 10 WORKING DAYS OF PROJECT COMPLETION.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. FOR SPECIFIED AND UNSPECIFIED ORIGINAL MATERIALS AND EQUIPMENT SHALL BE TURNED OVER TO PROJECT MANAGER AT JOB COMPLETION.
- \* COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF NO LESS THAN ONE YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK MATERIAL, OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION AT THE EXPENSE OF THE CONTRACTOR.
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY SHORT CIRCUIT, AND FALL-OF-POTENTIAL GROUNDING TEST WITH WRITTEN REPORT SUBMITTED TO THE PROJECT MANAGER FOR REVIEW AND APPROVAL.
- CONTRACTOR SHALL CONTACT "DIG SAFE" (1-888-DIG-SAFE) PRIOR TO COMMENCEMENT OF WORK.

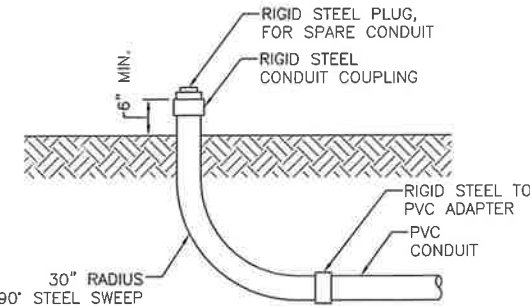
\* INDICATES BY NOTICE OF COMPLETION: SIGNED OFF BY CONSTRUCTION ENGINEER AND INCLUDES DATES ON ALL WARRANTY FORMS.



1 CONDUIT TRENCH DETAIL  
SCALE: N.T.S.

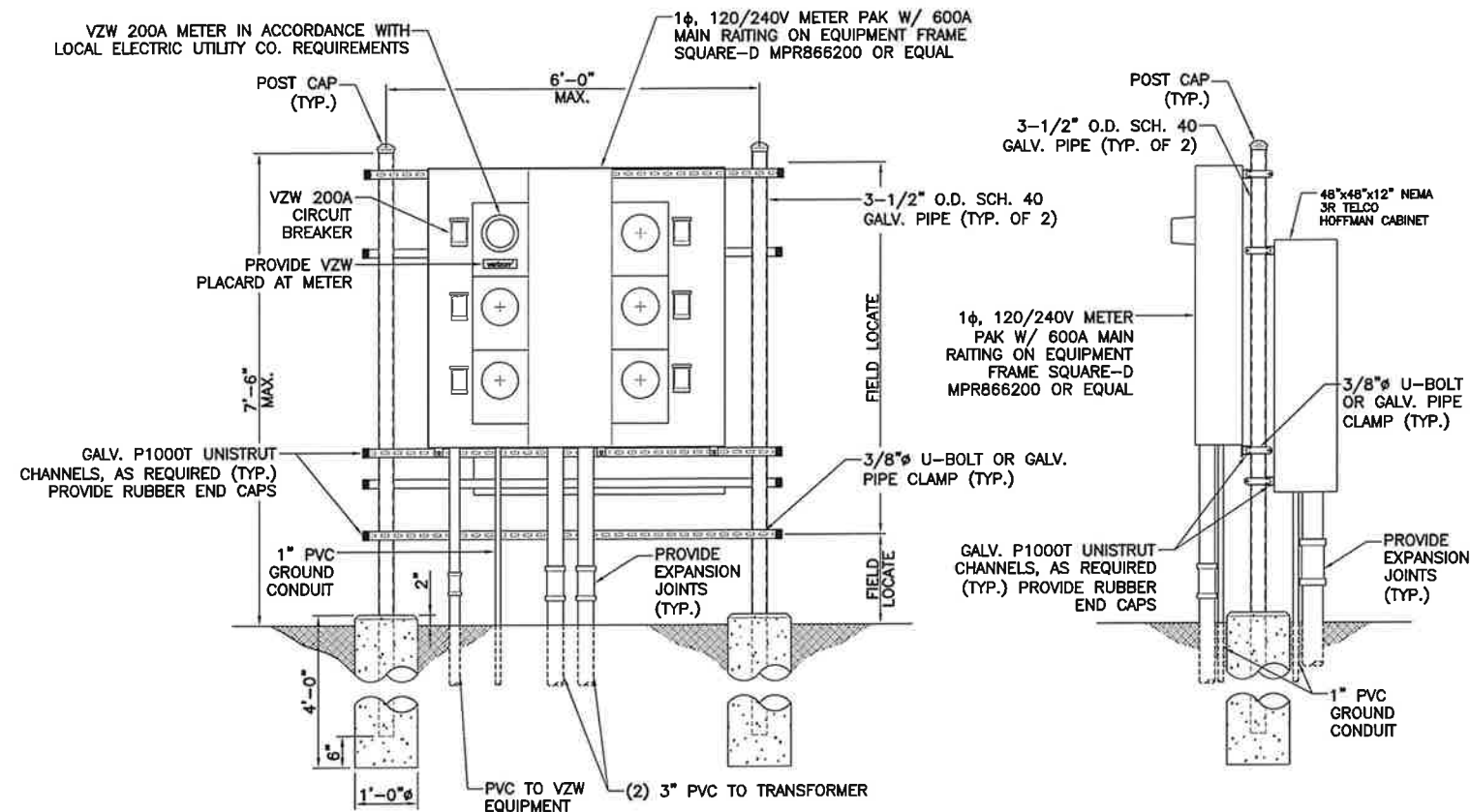


2 CONDUIT TRENCH DETAIL  
SCALE: N.T.S.



3 CONDUIT STUB-UP DETAIL  
SCALE: N.T.S.

ABBREVIATIONS	
A	AMPERE
A.I.C.	AVAILABLE INTERRUPTING CURRENT
A.T.S.	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
RGS.	RIGID GALVANIZED STEEL
RMC.	RIGID METAL CONDUIT
GND.	GROUND
KWH	KILOWATT HOUR
φ	PHASE
P	POLE
PVC	POLYVINYL CHLORIDE
SCA	AVAILABLE SHORT CIRCUIT CURRENT
TBCW	TINNED BARE COPPER WIRE
THHN	THERMOPLASTIC HIGH HEAT RESISTANT NYLON-COATED
THWN	THERMOPLASTIC HIGH HEAT & WATER RESISTANT NYLON-COATED
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
W	WIRE
ILC	INTEGRATED LOAD CENTER



4 H-FRAME DETAIL  
SCALE: N.T.S.

PREPARED BY:

**nexius**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581



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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

SITE INFO:

SITE NAME:  
WOLCOTT\_SOUTH\_CT  
LOCATION CODE:  
469936  
SITE ADDRESS:  
CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY

SHEET TITLE:

ELECTRICAL NOTES & DETAILS

NEXIUS PROJ. NO:  
VZ11509

SHEET NUMBER:

CHECKED BY:  
MS

**E-1**

CHECKED BY DATE:  
01/19/22



CONDUIT EXPANSION JOINTS SHALL BE INSTALLED ON ANY AND ALL CONDUITS ENTERING OR EXITING FROM UNDERGROUND.

ANY CONDUIT BELOW ROAD SURFACE TO BE ENCASED IN CONCRETE.

INSTALL PULL ROPE, MULE TAPE OR APPROVED EQUAL AT ALL CONDUITS.

PREPARED BY:

**nexus**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

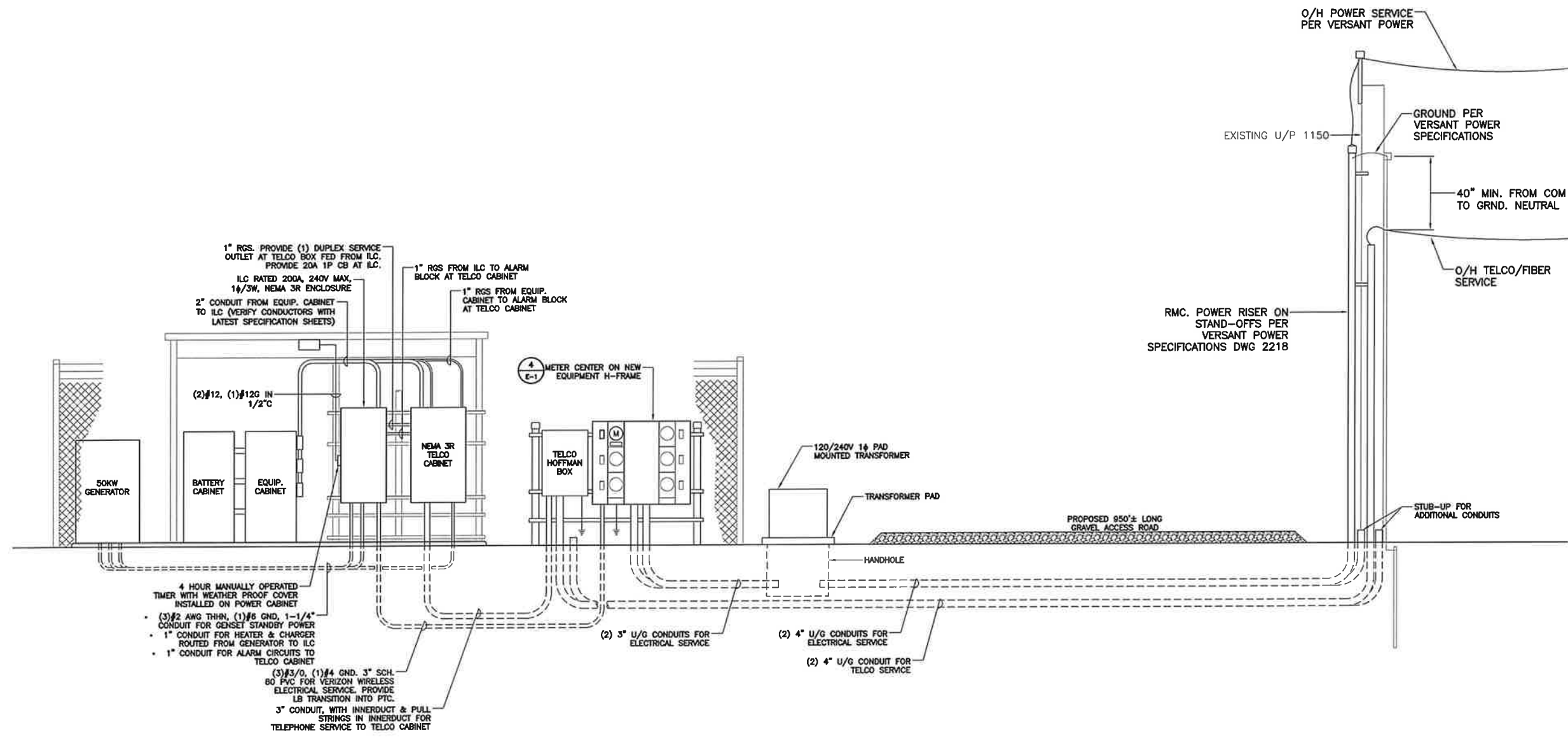
CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581



DocuSigned by:  
*Michael R. Spedicato*  
3/23/2022

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1 POWER RISER DIAGRAM  
SCALE: N.T.S.

**NOTE:**

- ALL POWER ROUTING SHALL BE COORDINATED WITH THE VZW CONSTRUCTION MANAGER AND THE SITE OWNER OR REPRESENTATIVE. ANY DISRUPTION OF ELECTRICAL SERVICE MUST BE APPROVED AND COORDINATED WITH THE SITE REPRESENTATIVE AND THE VZW CONSTRUCTION MANAGER.
- ELECTRICAL CONTRACTOR SHALL PLACE IN ACCORDANCE WITH THE NEC THE FOLLOWING SIGNS AT THIS EQUIPMENT.

**SIGN AT ILC:**

"WARNING SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THE EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE(S) IS ENERGIZED."

**SIGN AT SERVICE METER:**

"WARNING A 50KW, 240V SINGLE PHASE STANDBY GENERATOR WITH AN AUTOMATIC TRANSFER SWITCH PROVIDES BACK UP POWER TO THE VERIZON WIRELESS EQUIPMENT."

SUBMITTALS

REV	DATE	DESCRIPTION	BY
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1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

SITE INFO:

SITE NAME:  
**WOLCOTT\_SOUTH\_CT**

LOCATION CODE:  
**469936**

SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

SHEET TITLE:

**POWER RISER DIAGRAM**

NEXIUS PROJ. NO:  
**VZ11509**

SHEET NUMBER:

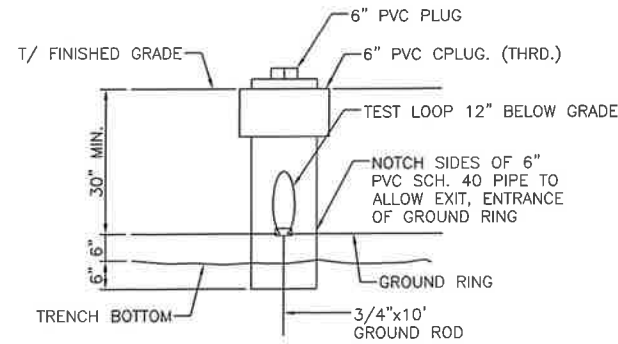
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MS

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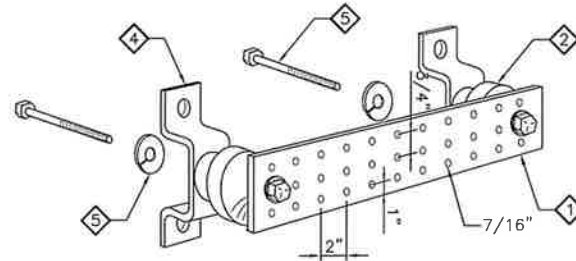
CHECKED BY DATE:  
01/19/22

GROUNDING NOTES

- ALL ELECTRICAL AND GROUNDING AT THE SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, (NEC) NFPA 70, (NATIONAL FIRE PROTECTION ASSOCIATION).
- ALL GROUND WIRE SHALL BE INSULATED GREEN COPPER #2 AWG UNLESS OTHERWISE NOTED.
- ALL GROUND WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
- ELECTRICAL CONTRACTOR SHALL COORDINATE CONNECTIONS TO EXISTING GROUND ELECTRODE WITH SITE CONSTRUCTION MANAGER.
- EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MIGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS, UNLESS NOTED OTHERWISE.
- PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE (TYPICAL FOR FOUR MOUNTING PIPES PER SECTOR).
- ANTENNA GROUND KITS SHALL BE FURNISHED BY VZW AND INSTALLED BY ELECTRICAL CONTRACTOR.
- THE GROUND SYSTEM SHALL BE TESTED AND SHALL HAVE A RESISTANCE OF 5 OHMS OR LESS.
- ALL RECEPTACLES AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL-SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS
- ALL #6 STRANDED COPPER WITH GREEN INSULATION TO BE ATTACHED WITH CRIMPED DOUBLE LUG BOLTED ATTACHED WITH CAD PLATED BOLTS AND STAR WASHERS (TYPICAL). NO OX-GREASE
- IF THE AC PANEL IN THE POWER CABINET IS WIRED AS SERVICE ENTRANCE THE AC SERVICE GROUND CONDUCTOR SHALL BE CONNECTED TO THE GROUND ELECTRODE SYSTEM. WHEN THE AC PANEL IN THE POWER CABINET IS CONSIDERED A SUB-PANEL, THE GROUND WIRE SHALL BE INSTALLED IN THE AC POWER CONDUIT, THE INSTALLATION SHALL BE PER LOCAL AND NATIONAL ELECTRIC CODE (NFPA-70)
- EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL. OTHERWISE, THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH ANTIOXIDANT (COPPER SHIELD) BEFORE MAKING THE CRIMP CONNECTIONS. THE MANUFACTURER'S TORQUING RECOMMENDATIONS ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS ARE TO BE FOLLOWED.
- THE ANTENNA CABLES SHALL BE GROUNDED AT THE TOP AND BOTTOM OF THE VERTICAL RUN FOR LIGHTNING PROTECTION. THE ANTENNA CABLE SHIELD SHALL BE BONDED TO A COPPER GROUND BUS AT THE LOWERMOST POINT OF A VERTICAL RUN JUST BEFORE IT BEGINS TO BEND TOWARD THE HORIZONTAL PLANE. WIRE RUNS TO GROUND SHALL BE KEPT AS STRAIGHT AND SHORT AS POSSIBLE. THE ANTENNA CABLE SHIELD SHALL BE GROUNDED JUST BEFORE ENTERING THE MINICELL. ANY ANTENNA CABLES OVER 200 FEET IN LENGTH SHALL ALSO BE EQUIPPED WITH ADDITIONAL GROUNDING AT MID-POINT.
- THE MASTER GROUND BUS (MGB) SHALL BE MADE OF BARE 1/4"x4" COPPER (FOR OUTDOOR APPLICATIONS, IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICALLY INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
- GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, THE COATING MUST BE REMOVED DOWN TO THE BARE METAL. AFTER THE COATING HAS BEEN REMOVED, APPLY A NON-CORROSIVE APPROVED COMPOUND TO THE CLEANED SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX", OR EQUAL.

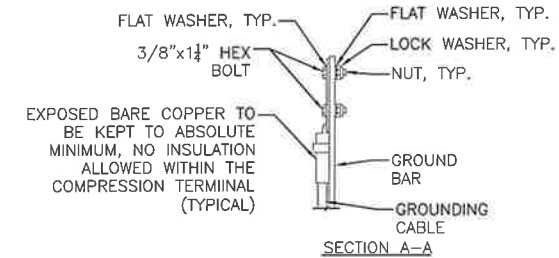
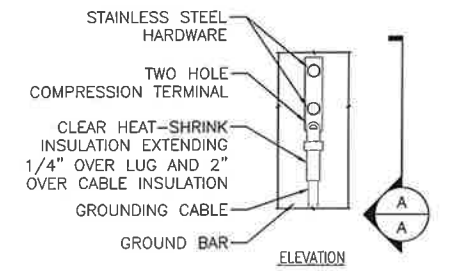


1 GROUND TEST WELL DETAIL  
SCALE: N.T.S.



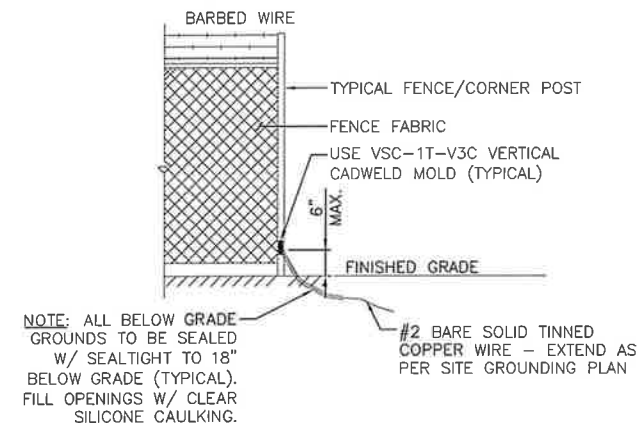
LEGEND	
1	HOT-DIPPED GALV. STEEL GROUND BAR, 1/4"x4"x24", HOLE CENTER TO MATCH NEMA DOUBLE LUG CONFIGURATION
2	INSULATORS
3	3/8" LOCK WASHERS
4	WALL MOUNTING BRACKET
5	3/8"-11x1" H.H.C.S. BOLTS

2 STANDARD GROUND BAR DETAIL  
SCALE: N.T.S.



NOTE:  
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.  
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.  
 3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

3 GROUND BAR CONNECTIONS DETAIL  
SCALE: N.T.S.



NOTE: ALL BELOW GRADE GROUNDS TO BE SEALED W/ SEALTIGHT TO 18" BELOW GRADE (TYPICAL). FILL OPENINGS W/ CLEAR SILICONE CAULKING.

4 GROUND BAR CONNECTIONS DETAIL  
SCALE: N.T.S.

PREPARED BY:  
**nexius**  
 A&E OFFICE:  
 300 APOLLO DRIVE, 2ND FLOOR  
 CHELMSFORD, MA 01824

APPLICANT:  
**verizon**  
 CELLCO PARTNERSHIP d/b/a  
 VERIZON WIRELESS  
 118 FLANDERS ROAD, 3RD FLOOR  
 WESTBOROUGH, MA 01581

STATE OF CONNECTICUT  
 MICHAEL R. SPINER  
 32235 LICENSED  
 PROFESSIONAL ENGINEER  
 DocuSigned by:  
 Michael R. Spiner  
 044CF8769771AC1 3/22/2022

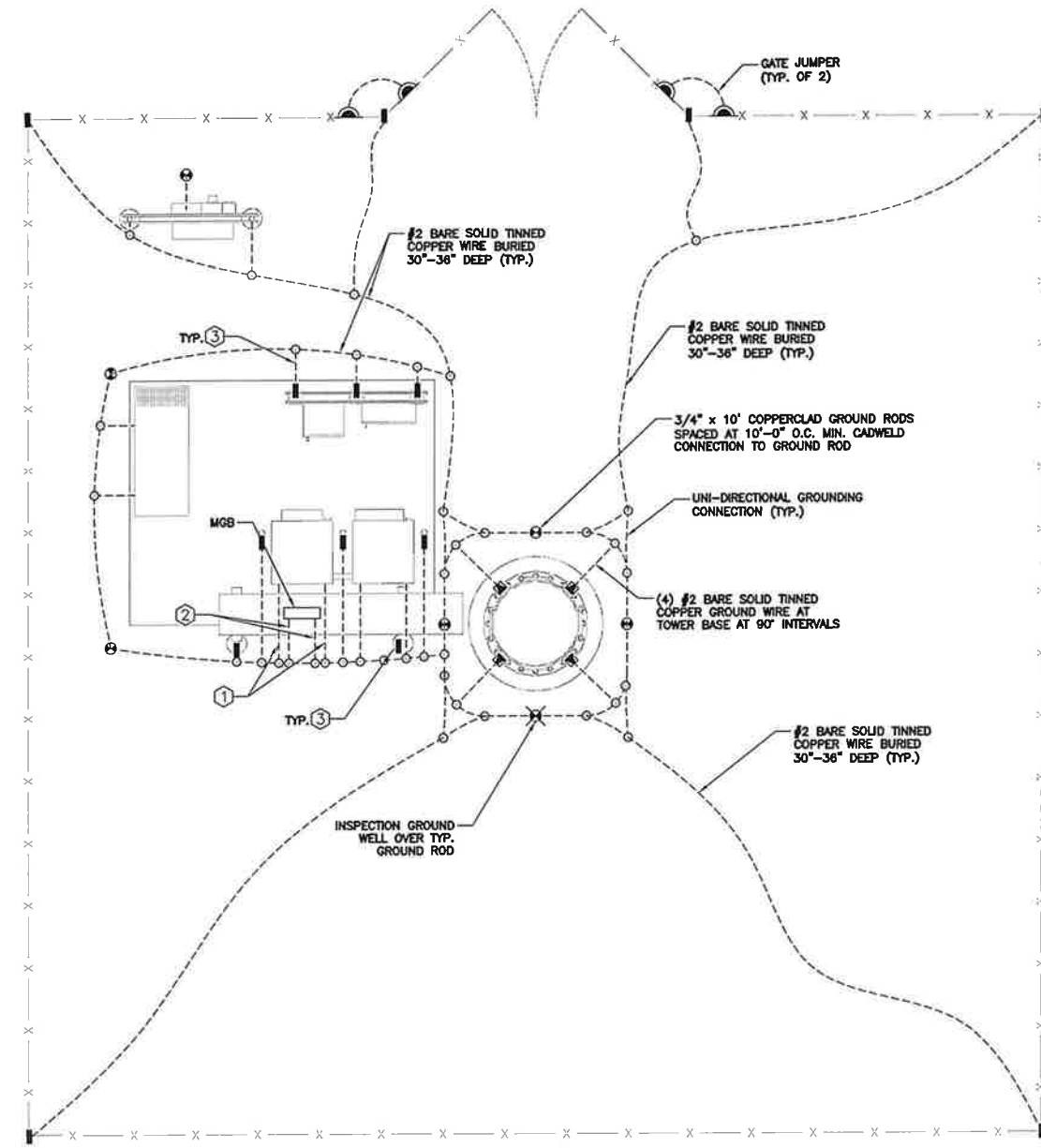
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SUBMITTALS			
REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

SITE INFO:  
 SITE NAME:  
**WOLCOTT\_SOUTH\_CT**  
 LOCATION CODE:  
**469936**  
 SITE ADDRESS:  
**CHESTNUT HILL ROAD  
 WOLCOTT, CT 06716  
 NEW HAVEN COUNTY**

SHEET TITLE:  
**GROUNDING DETAILS & NOTES**

NEXIUS PROJ. NO:  
**VZ11509**  
 SHEET NUMBER:  
**E-3**  
 CHECKED BY:  
 MS  
 CHECKED BY DATE:  
 01/19/22



1 GROUNDING PLAN  
SCALE: N.T.S.

**GROUNDING CONNECTIONS**

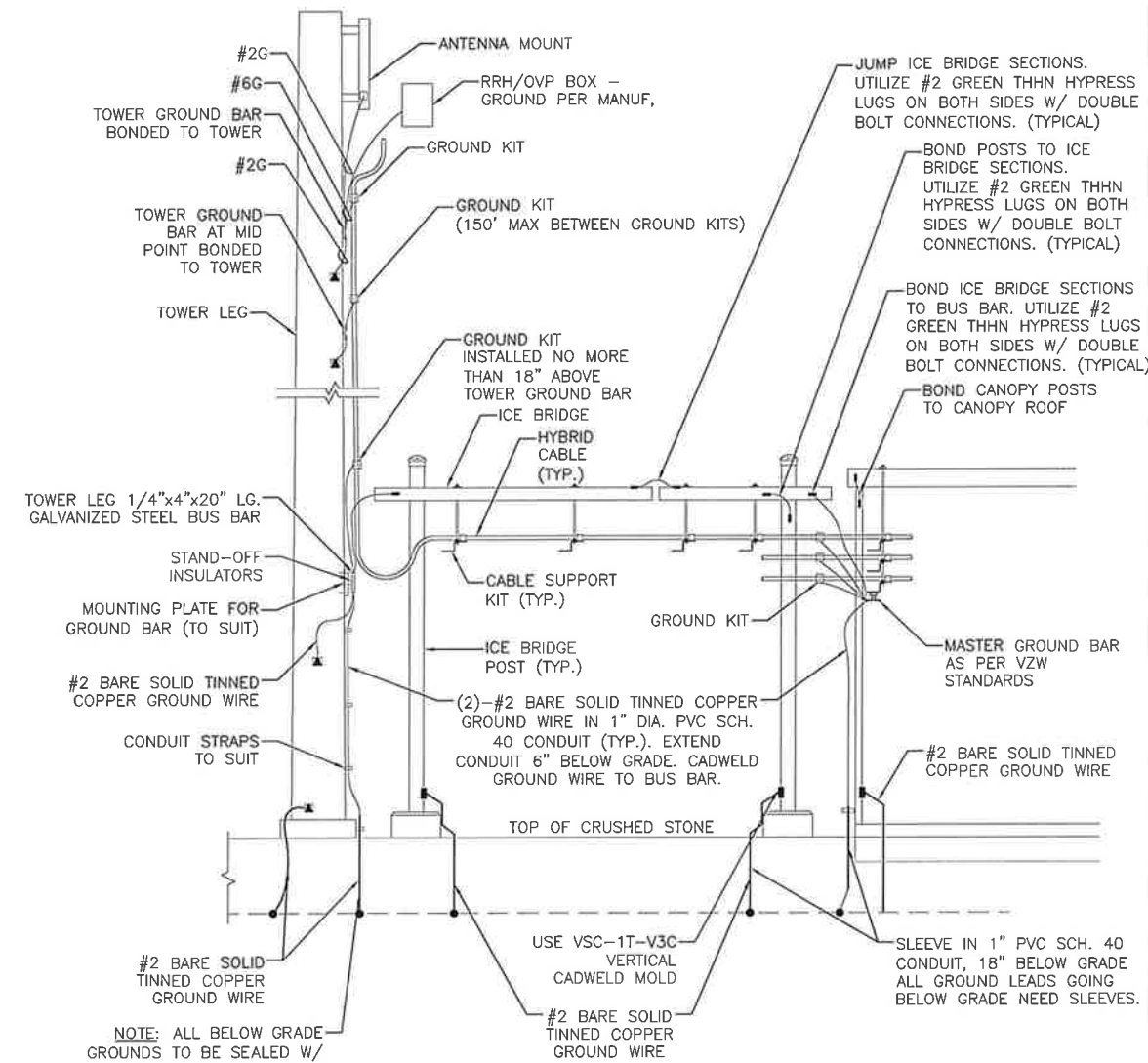
- ① EQUIPMENT CABINET GROUND WIRE, #2 BARE SOLID TINNED COPPER GROUND WIRE, (2) PER CABINET, FASTENED TO CONCRETE PAD.
- ② MASTER BUS BAR, (2) #2 BARE SOLID TINNED COPPER GROUND WIRE.
- ③ ICE BRIDGE POST, #2 BARE SOLID TINNED COPPER GROUND WIRE.
- ④ INTERIOR TELCO CABINET EGB, #2 BARE SOLID TINNED COPPER GROUND WIRE
- ⑤ MAIN DISCONNECT SWITCH GROUND #2 BARE TINNED COPPER GROUND WIRE.

**LEGEND**

- ⊕ 3/4" X 10' COPPERCLAD GROUND ROD SPACED AT 10' MIN. CADWELD CONNECTION TO GROUND ROD
- VERTICAL CADWELD MOLD
- CADWELD CONNECTION
- ⊗ INSPECTION WELL SEE DETAIL DWG
- ▲ CADWELD CONNECTION TO TOWER (TYP. OF 4 AT 90° INTERVALS)

**NOTES**

1. ALL ENDS OF CONDUIT SHALL BE SEALED WITH A FOAM SEALANT AFTER WIRES AND CABLES ARE INSTALLED.
2. ALL EQUIPMENT GROUND LEADS, CORNER GROUNDS, EXTERIOR GROUND BAR, TO BE #2 TINNED SOLID TO GROUND RING.
3. IF EXISTING GROUND RING IS ACCIDENTALLY BROKEN DURING CONSTRUCTION IT SHALL BE RECONNECTED VIA CADWELD.



NOTE: ALL BELOW GRADE GROUNDS TO BE SEALED W/ SEALTIGHT TO 18" BELOW GRADE (TYPICAL). FILL OPENINGS W/ CLEAR SILICONE CAULKING.

**NOTES:**

1. CONTRACTOR SHALL ADD ADDITIONAL GROUND RODS & CONDUCTORS OR APPROVED GROUND ENHANCING MATERIAL TO ACHIEVE LESS THAN 5 OHMS RESISTANCE TO GROUND.
2. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 150 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.
3. GROUND ALL EQUIPMENT AT ANTENNAS AS REQUIRED BY MANUFACTURER.

2 GROUNDING RISER DIAGRAM  
SCALE: N.T.S.

PREPARED BY:

**nexus**

A&E OFFICE:  
300 APOLLO DRIVE, 2ND FLOOR  
CHELMSFORD, MA 01824

APPLICANT:

**verizon**

CELLCO PARTNERSHIP d/b/a  
VERIZON WIRELESS  
118 FLANDERS ROAD, 3RD FLOOR  
WESTBOROUGH, MA 01581



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Michael J. Spader  
04008783774C1 3/22/2022

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**SUBMITTALS**

REV	DATE	DESCRIPTION	BY
0	01/19/22	CONSTRUCTION DRAWINGS	JM
1	02/08/22	REVISED PER COMMENTS	JM
2	03/14/22	REVISED METER DETAIL	JM

SITE INFO:

SITE NAME:  
**WOLCOTT\_SOUTH\_CT**  
LOCATION CODE:  
**469936**  
SITE ADDRESS:  
**CHESTNUT HILL ROAD  
WOLCOTT, CT 06716  
NEW HAVEN COUNTY**

SHEET TITLE:

**GROUNDING PLAN,  
DETAILS & NOTES**

NEXIUS PROJ. NO:  
**VZ11509**

SHEET NUMBER:

CHECKED BY:  
MS

**E-4**

CHECKED BY DATE:  
01/19/22



February 15th, 2022

Bryon Morawski  
Structure Consulting Group  
(860) 604-9142

**Ref: Design and failure modes for a 140' AGL Tapered Monopole  
Quality of Steel and Fabrication of a Monopole Structure  
Valmont Project No. 537228  
Site Name: Wolcott South CT, Wolcott, CT  
Pole Designed With a Theoretical Fall Radius of 20'**

Tapered Monopole Design Standards and Failure Modes:

Communications monopole structures designed by Valmont are sized in accordance with the latest governing revision of the ANSI/TIA 222 standard unless otherwise requested by our customer. This standard has been approved by ANSI/ASCE, which has dealt with the design of antenna support structures for over 40 years. The TIA standard, based on provisions of this nationally known specification, has a long history of reliability. At its core philosophy is its first and foremost priority to safeguard and maintain the health and welfare of the public.

The TIA standard designates a minimum wind loading for each county in the United States. Valmont uses the wind loading listed in the TIA standard unless a greater value is specified by our customer. Structures are also designed for radial ice at a code specified reduced design wind loading. Code designated coefficients are used to ensure that the structure will survive the designed wind speed. The structure can usually survive even a greater wind load than the basic design wind speed because of these conservative coefficients.

Design and loading assumptions that are used for the analyses of these structures are very conservative in nature when compared to other codes, which makes structural failure highly improbable. Failure of a steel monopole occurs when a point is reached where the induced stresses exceed the yield strength of the material. At this point, the deflections induced in the material are no longer temporary. Hence, a permanent deflection in the monopole would exist.

The term failure above refers to local buckling at a designated point on the pole. Local buckling does not cause a free falling pole; rather it relieves the stresses from the pole at this location. Monopoles are flexible, forgiving structures, which are not generally susceptible to damage by impact loads such as wind gust or earthquake shocks.

When local buckling occurs, a relatively small portion of the shaft distorts and "kinks" the steel. When the pole begins to bend the exposure area is reduced and therefore, the force due to wind is decreased as well. Even though buckling exists, the cross section of the pole is capable of carrying the entire vertical load. Therefore, wind induced loads could not conceivably bring this type of structure to the ground due to the excellent ductile properties, design criteria, and failure mode.

Valmont's communication poles have proven to be very reliable products. Valmont has provided structures that have performed well during earthquakes in California, hurricanes in the South (including Hugo, Andrew, Opal and Katrina), and a number of tornadoes. In over 25 years of engineering and fabricating thousands of monopoles, to our knowledge Valmont has never experienced an in service failure of a communication pole due to weather induced overloading, even though, as in the cases of Hurricanes Hugo, Andrew and Katrina, the wind speeds exceeded the design wind speed. We use the latest standards, wind speed information, and sophisticated analytical tools to ensure that we maintain our unblemished record for quality.

# valmont

## STRUCTURES


### Valmont Quality of Steel and Manufacturing:

- Monopoles are fabricated from ASTM A572 Grade 65 material with a controlled silicon content of 0.06% maximum to ensure a uniform galvanized coating. The base material is fabricated from Grade 50 material. All plate material meets a V-Notch toughness requirement of 15 ft-lbs. @ -20 degrees Fahrenheit. By meeting the strict toughness requirement, monopoles are best suited to resist the cyclic/fatigue type loading (i.e. wind induced loading) these structures exhibit.
- Valmont's anchor bolts are fabricated from A615 Grade 75 material. The bolts are typically 2 ¼ in diameter, made from #18J bar stock. Anchor bolts come complete with five (5) A194 Grade 2H hex nuts.
- For the past 40 years, our company has always guaranteed the quality of the steel used in building our structures. Material Certifications are available on all material at the time of fabrication. Fabrication of the monopole is performed in accordance with the provisions of the AISC Manual of Steel Construction and ASCE's Design of Steel Transmission Pole Structures. All welding and inspection is in accordance with the American Welding Society's Specification D1.1-latest revision. Testing and inspection reports are available upon request at the time of fabrication.

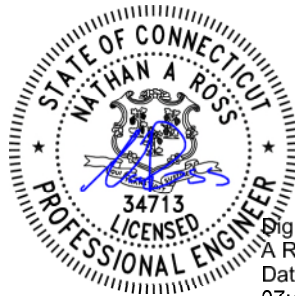
In addition, this monopole can be designed to theoretically fail at approximately 120' AGL or above by purposely over designing the pole sections below this point. In the unlikely event the pole were to fail at this point, the significant loading reduction caused by the removal of the tower wind area and weight above would greatly reduce any chance that the remaining tower would have any structural damage, thereby providing a theoretical failure radius of approximately 20' for the 140' AGL monopole.

I hope these comments address any issues that you might encounter relative to the anticipated performance of monopole structures and quality of steel fabrication. If you have additional questions or comments, I may be reached at (402) 359-6830 or [Yatong.Zeng@Valmont.com](mailto:Yatong.Zeng@Valmont.com).

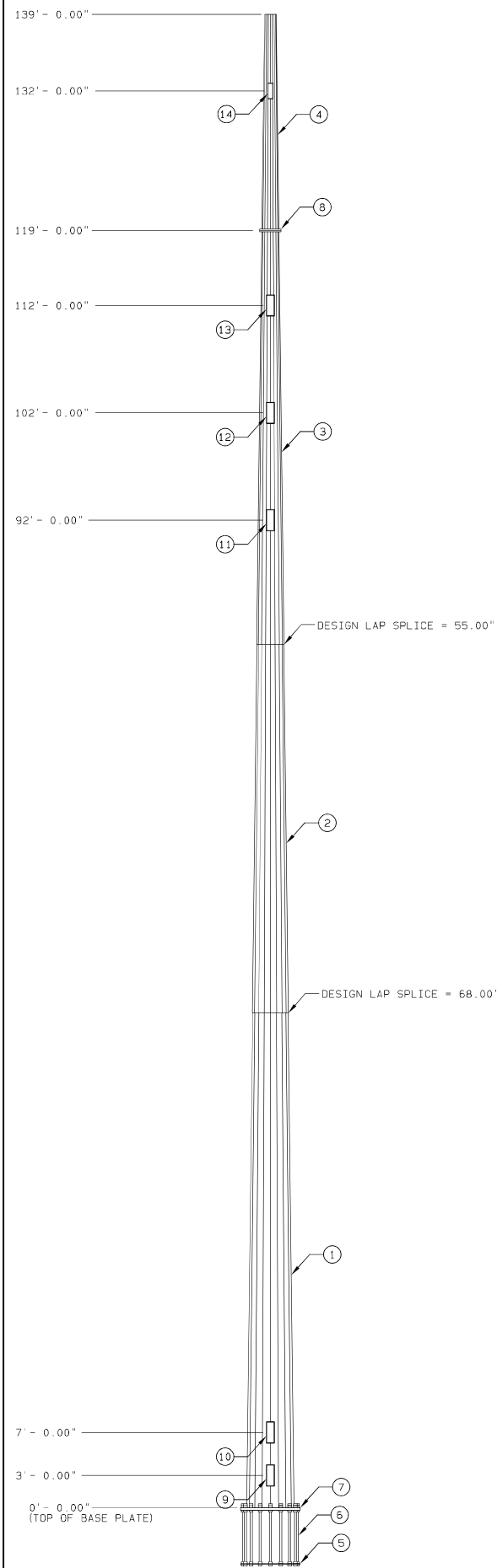
Sincerely,



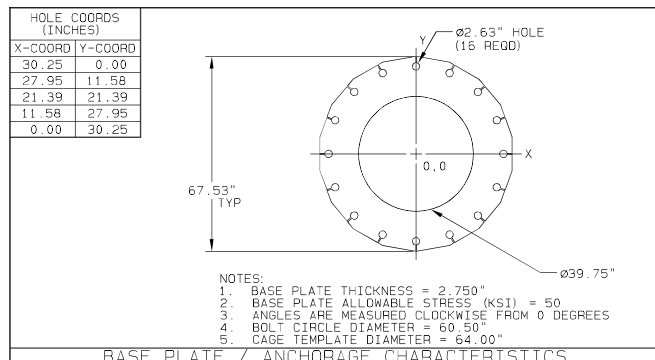
**Yatong Zeng, EIT**  
Associate Engineer



Digitally signed by Nathan  
A Ross  
Date: 2022-02-16  
07:47:08:00



ITEM NO.	REQD	FEATURES	UNIT WEIGHT (LBS)	WEIGHT (LBS)
1	1	SECTION A VALMONT S-22 0.500" THK (A572 GR65)	12.445	12.445
2	1	SECTION B VALMONT S-22 0.438" THK (A572 GR65)	6.176	6.176
3	1	SECTION C VALMONT S-22 0.375" THK (A572 GR65)	3.776	3.776
4	1	SECTION D VALMONT S-22 0.188" THK (A572 GR65)	632	632
5	1	BOTTOM CAGE PLATE	121	121
6	16	2.25" ANCHOR BOLT, LENGTH=5.50" A615 GR75	103	1,637
7	1	BASE PLATE VALMONT S-56 2.750" THK (A572 GR50)	2,109	2,109
8	2	FLANGE PLATE	157	313
9	1	TOP CAGE PLATE (REMOVE BEFORE SETTING POLE)	158	158
10	24	BOLT 0.50" DIA		
11	1	SAFETY CLIMBING CABLE (LENGTH = 129.00')	99	99
12	3	GROUNDING LUG	2	6
13		GALVANIZING	375	375
14	102	STEP AND CLIP (VALMONT STANDARD)	1	51
15	9	HAND HOLE HVY (9" x 24")	52	104
16	10	HAND HOLE HVY (9" x 24")	52	104
17	11	HAND HOLE HVY (9" x 24")	52	156
18	12	HAND HOLE HVY (9" x 24")	52	156
19	13	HAND HOLE HVY (9" x 24")	52	156
20	14	HAND HOLE STD (6" x 18")	18	54
21	1	POLE CAP	11	11



BASE PLATE / ANCHORAGE CHARACTERISTICS

NOTES:

- FACTORED REACTIONS FOR FOUNDATION DESIGN  
 MOMENT = 64,179 IN-KIPS  
 SHEAR = 53,529 #  
 VERTICAL = 49,283 #
- GALVANIZED PER ASTM A-123.
- DESIGN CRITERIA: TIA-222-G ADDENDUM 2
- THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:  
 EXPOSURE CATEGORY = B  
 TOPOGRAPHY CATEGORY = 3  
 STRUCTURE CLASSIFICATION = 2  
 HEIGHT OF CREST = 552 FT  
 EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS S<sub>S</sub> = 0.19  
 EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT ONE SECOND S<sub>1</sub> = 0.05  
 EARTHQUAKE SITE CLASS = D  
 WIND LOAD CASES ARE BASED ON 3 SECOND GUST AND 50 YEAR WIND RETURN PERIOD  
 A. CASE 1: WIND = 97 MPH WIND SPEED  
 B. CASE 2: WIND = 50 MPH ICE AND WIND SPEED  
 C. CASE 3: WIND = 60 MPH WIND SPEED  
 D. CASE 4: SEISMIC  
 E. EQUIPMENT

DESCRIPTION	ABP MTG HT. (FT)	ABP CENTROID HT. (FT)	WITHOUT ICE EPA WT (FT**2) (LBS)	WITH ICE EPA WT (FT**2) (LBS)
12-RFV01U-DIA	115.00	115.00	15.02	1176
3-DMP65R-BUBD (W/PM)	105.00	105.00	33.47	445
3-DMP65R-BUBD (W/PM)	95.00	95.00	33.47	445
12-RFV01U-DIA	135.00	135.00	15.02	1176
1-5/8" X 5' LIGHTNING ROD LIGH	139.00	142.50	0.47	21
12-JAHH-658-R3B ANDREW (W/PM)	135.00	135.00	83.24	1107
2-RAYCAP RVZDC-6627-PF-48 AMPS	135.00	135.00	5.91	64
1-12' SP1 LP PLATFORM W/HR MOU	135.00	135.00	27.02	1385
12-JAHH-658-R3B ANDREW (W/PM)	115.00	115.00	83.24	1107
2-RAYCAP RVZDC-6627-PF-48 AMPS	115.00	115.00	5.91	64
1-12' SP1 LP PLATFORM W/HR MOU	115.00	115.00	27.02	1385
3-CCI/TPA65R-BUBD UNKNOWN (W/P	105.00	105.00	33.83	352
6-RAYCAP DC6-48-60-0-8C-EV AMP	105.00	105.00	24.34	332
12-ALCATEL-LUCENT RRU 4449 B13	105.00	105.00	16.27	840
3-SP1 WFA12-HD MOUNTS	105.00	105.00	25.20	1974
3-CCI/TPA65R-BUBD UNKNOWN (W/P	95.00	95.00	33.83	352
6-RAYCAP DC6-48-60-0-8C-EV AMP	95.00	95.00	24.34	332
12-ALCATEL-LUCENT RRU 4449 B13	95.00	95.00	16.27	840
3-SP1 WFA12-HD MOUNTS	95.00	95.00	25.20	1974

- POLE DESIGNED TO ULTIMATE WIND SPEED OF 125 MPH PER 2018 CSBC APPENDIX N.
- FEEDLINES ARE PLACED INTERIOR TO THE POLE SHAFT (UNLESS NOTED OTHERWISE)
- TOTAL POLE HEIGHT IS 140 FT AGL
- ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE (APPROX. 1 FT AGL)
- 18 SIDED SHAFT
- FUTURE CARRIER ASSUMED VZH LOADING AS WORST-CASE
- THEORETICAL 20 FT FALL ZONE (FOR FLANGE CONNECTION @ 119 FT)
- POLE IS EXTENDABLE FROM 120' AGL TO 140' AGL
- FALL ZONE ONLY APPLICABLE WITH EXTENSION AND FULL DESIGN LOADING
- ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.

SECTION INFORMATION					
ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL
1	51' - 9.00"	53.00"	37.48"	0.500"	A572 65 KSI
2	38' - 11.00"	40.05"	28.38"	0.438"	A572 65 KSI
3	38' - 7.00"	30.50"	18.93"	0.375"	A572 65 KSI
4	20' - 0.00"	18.93"	12.93"	0.188"	A572 65 KSI

ORDER	PROJECT	FILE ID	SCALE	DATE	ENGR
537228		537228-P1	NONE	02/15/22	YZ70
DESCRIPTION					
VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT					



Digitally signed by Nathan A Ross  
 Date: 2022-02-16 07:27:08.00





**General Notes: Slab Foundation**

- Prior to excavation, check the area for underground facilities.
- All reinforcing shall be deformed bars conforming to ASTM A615 Grade 60 (60,000 psi min. yield) and shall be provided by the foundation contractor 28 days. The concrete shall be placed and finished within 45 days of the start of the concrete pour. The concrete shall be as given in the ACI "Building Code Requirements for Reinforced Concrete", ACI 318, the latest edition.
- Concrete shall be placed against undisturbed soil to the depth indicated on the foundation drawing. The portion above grade shall be formed. If an area is excavated or formed. After the forms are removed, the excess concrete shall be removed by cutting and chipping.
- Foundation design based on ultimate vert. bearing pressure of 10000 psf.
- Concrete is assumed to weigh 150 pcf.
- Estimated concrete volume = **62.86 cubic yards total.**
- Design based on the following loads from installation drawing for order No: 537228.

**Factored Moment = 58.69 ft-KIPS**  
**Factored Shear = 49.3 KIPS**  
**Factored Axial = 53.3 KIPS**  
**Overturning Safety Factor = 1.02**  
**Max. Toe Bearing Pressure = 6.31 ksf**

- Backfill should be compacted to a density of 123 pcf.
- Anchor bolts to be ASTM A615 Gr75.
- Reference: geotechnical report S.W. Cole Report Number 21-1434 S dated 11/10/2021
- Foundation designed to not exceed 100% of monopole's capacity.
- Foundation to be based on at least 6 inch compacted crushed stone, overlying compacted bedrock.
- Existing organics, topsoil, roots, subsoil and deleterious material must be removed from beneath the foundation.

**Reinforcement Steel Schedule**

Type	Rebar Size	Rebar Spacing	Weight (lbs)	Qty
1	C	#4	Equal	72
2	B	#9	-----	848
3	A	#7	13.96 in	2,003
4	A	#8	7.15 in	5,495
Total Steel Weight for complete foundation installation =				8,618

Grade 60 Rebar

Size	Wt./ft.	665 (in)	6" (in)	g" (in)	g" (in)
#3	0.38	2.25	2.25	1.50	-
#4	0.67	3.00	3.00	2.00	-
#5	1.10	4.50	4.50	3.00	-
#6	1.50	6.00	6.00	4.00	-
#7	2.04	8.25	8.25	5.25	4.25
#8	2.67	11.00	11.00	7.00	6.00
#9	3.40	14.75	14.75	10.00	-
#10	4.30	19.50	19.50	14.00	-
#11	5.31	26.25	26.25	19.00	-

Rebar Lap Splice

Rebar Size	Specified Concrete Strength	Vert. Ties	Horiz. Ties	Top Horiz.	Bottom Horiz.
#3	60	4500 psi	13	15	21
#4	60	4500 psi	18	20	29
#5	60	4500 psi	22	26	36
#6	60	4500 psi	26	33	46
#7	60	4500 psi	33	40	56
#8	60	4500 psi	43	52	74
#9	60	4500 psi	49	58	88
#10	60	4500 psi	58	68	104
#11	60	4500 psi	71	84	132

Cap Ties

Cap Ties	Rebar Size	Rebar Spacing	Weight (lbs)	Qty
1	C	#4	Equal	72
2	B	#9	-----	848
3	A	#7	13.96 in	2,003
4	A	#8	7.15 in	5,495

Slab Top Steel

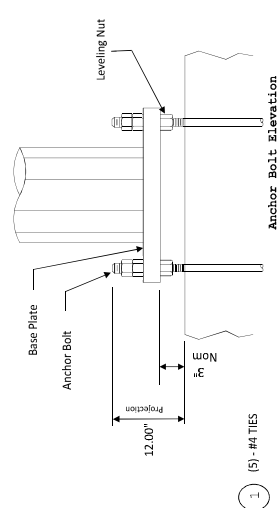
Slab Top Steel	Rebar Size	Rebar Spacing	Weight (lbs)	Qty
1	C	#4	Equal	72
2	B	#9	-----	848
3	A	#7	13.96 in	2,003
4	A	#8	7.15 in	5,495

Slab Bottom Steel

Slab Bottom Steel	Rebar Size	Rebar Spacing	Weight (lbs)	Qty
1	C	#4	Equal	72
2	B	#9	-----	848
3	A	#7	13.96 in	2,003
4	A	#8	7.15 in	5,495

Total Steel Weight for complete foundation installation = 8618

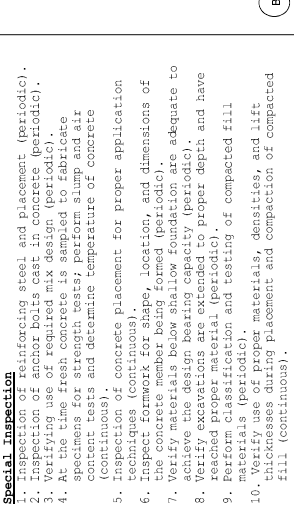
\*\* Refers to ACI standard hook detail chart  
 \*\* Refers to ACI stirrup hook detail chart



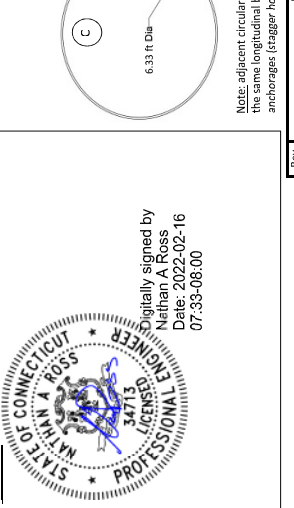
**Anchor Bolt Elevation**  
 (No Scale)

- Special Inspection**
- Inspection of reinforcing steel and placement (periodic).
  - Inspection of anchor bolts cast in concrete (periodic).
  - Verifying use of required mix design (periodic).
  - At the time fresh concrete is sampled to fabricate specimens for strength tester perform slump and air (continuous) and determine temperature of concrete (continuous).
  - Inspection of concrete placement for proper application techniques (continuous).
  - Inspect formwork for shape, location, and dimensions of the concrete member being formed (periodic).
  - Verify materials below shallow foundation are adequate to support the foundation (periodic).
  - Verify excavations are extended to proper depth and have reached proper material (periodic).
  - Perform classification and testing of compacted fill materials (periodic).
  - Verify use of proper materials, densities, and lift thicknesses during placement and compaction of compacted fill (continuous).

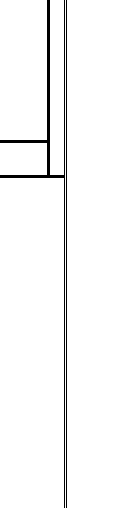
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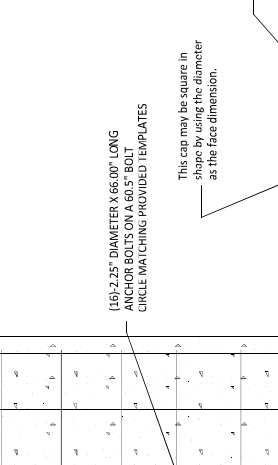
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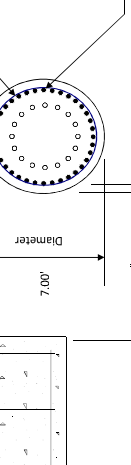
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**Section D-D**  
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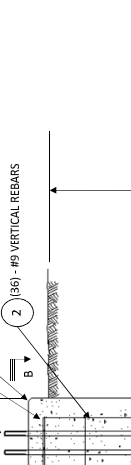
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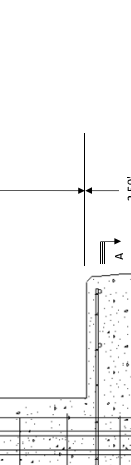
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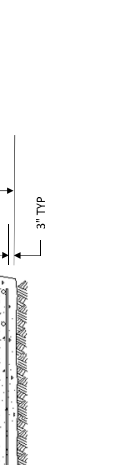
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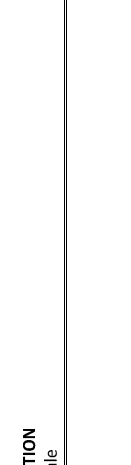
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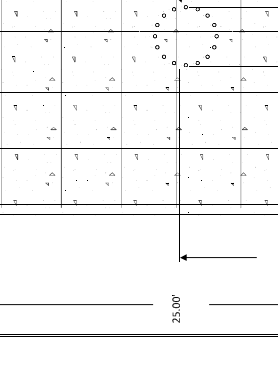
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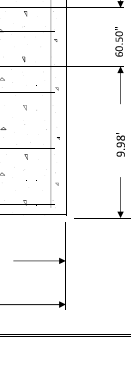
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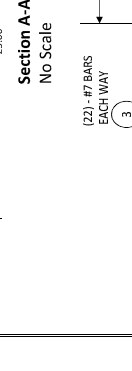
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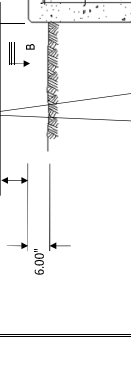
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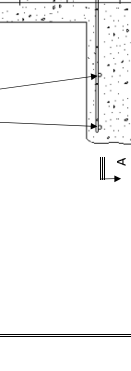
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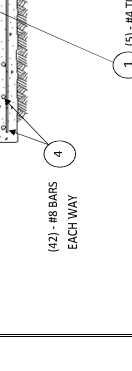
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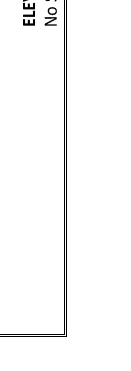
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**Section E-E**  
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**Section F-F**  
 No Scale



**Section G-G**  
 No Scale



1 (5) - #4 TIES

(42) - #8 BARS EACH WAY

(2) - #7 BARS EACH WAY

DOUBLE TIES @ TOP

2.25" DIA X 66.00" A/B'S

1" CHAMFER

(2) - #9 VERTICAL REBARS

7.00" DIA

4" MIN COVERAGE

7.00" DIA

3.00'

2.50'

3" TYP

6.00"

15.00" A/B PROJ.

25.00'

60.50"

9.98"

12.50"

25.00'

(16)-2.25" DIA X 66.00" LONG ANCHOR BOLTS ON A 60.5" BOLT CIRCLE MATCHING PROVIDED TEMPLATES

3"

12.00" PROJECTION

3"

NOM

LEVELLING NUT

ANCHOR BOLT

BASE PLATE

24.5 ft

5.33 ft

9.02 in dia \*

1.88 ft

3 in

6.33 ft Dia

6" Top Min engaging two vertical bars

2 in dia \*\*

#4

Vert. Ties

Horiz. Ties

Top Horiz.

Bottom Horiz.

Overlaid (inches)

Rebar Lap Splice

28800 lbs Street

1700 W. Main

Wolcott, CT 06794

860.393.9901

Slab Foundation Layout

Customer: Verizon Wireless

By: YZ

Check: YZ

Date: 07/15/22

Site: Wolcott, CT

Project #537228

SIZE - B

Drawing No. CT1517228FS

Sheet 1 of 1

Valmont

Slab Foundation Layout

Customer: Verizon Wireless

By: YZ

Check: YZ

Date: 07/15/22

Site: Wolcott, CT

Project #537228

SIZE - B

Drawing No. CT1517228FS

Sheet 1 of 1

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Sheet 1 of 1

Valmont

Slab Foundation Layout

Customer: Verizon Wireless

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Site: Wolcott, CT

28800 lbs Street

1700 W. Main

Wolcott, CT 06794

860.393.9901

Slab Foundation Layout

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Sheet 1 of 1

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Sheet 1 of 1

Valmont

Slab Foundation Layout

Customer: Verizon Wireless

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Project #537228

SIZE - B

Drawing No. CT1517228FS

Sheet 1 of 1

Valmont

Slab Foundation Layout

Customer: Verizon Wireless

By: YZ

Check: YZ



Valmont Structures  
28800 Ida Street  
Vally, NE 68064  
(402) 359-2201  
Engineer:YZ  
Reviewed by:YZ

## Slab Foundation Design Calculations



Digitally signed by Nathan A  
Ross  
Date: 2022-02-16 07:47-08:00

Valmont Order Number: 537228  
Customer: Verizon Wireless  
Site: Wolcott, CT  
Pole Height: 139 ft (140 ft agl)

## Inputs

### Site Information

Customer: **Verizon Wireless**  
 Site: **Wolcott**  
 Project Number: **537228**  
 State Abbreviation: **CT**  
 Soil Parameters Based On: **Geotechnical Report**  
 Select Soil Type: **[Redacted]**  
 Soil Report Name & Project Number: **S.W. Cole Report Number 21-1434 S dated 11/10/2021**  
 Design Date: **2/15/2022**  
 Engineer: **YZ**  
 Reviewed By: **YZ**  
 Select Design Code: **TIA 222 G**

### Design Requirements

Seismic Design Category: **B**  
 Ground Water Depth: **99** ft      99 ft Represents  
 Frost Depth: **4** ft      no Groundwater.  
 Clear Cover (Pad): **3** in  
 Clear Cover (Pedestal): **4** in

### Structure Properties

Type: **Pole**  
 Height: **139** ft  
 Bolt Circle: **60.5** in  
 Number of Bolts: **16**  
 Bolt Diameter: **2.25** in  
 Bolt Projection: **12** in  
 Bolt Length: **66** in  
 Embedment Plate Diameter: **64** in

### Reactions

Foundation Maximum Stress: **100.00%**  
 Moment: **64179.222** in\*kips  
 Global Shear: **53.529** kips  
 Axial: **49.283** kips  
 Torsion: **0.000** ft\*kips

### Material Properties

Anchor Bolt Grade: **A615 Gr75**  
 Anchor Bolt Allowable Rupture: **100** ksi  
 Anchor Bolt Allowable Yield: **75** ksi  
 Concrete Type: **Normal**  
 Unit Weight of Concrete: **150** pcf  
 Concrete Compressive Strength: **4500** psi  
 Reinforcement Yield Strength: **60** ksi  
 Reinforcement Modulus of Elasticity: **29000** ksi

Bearing Capacity (ksf)	Allowable or Ult?	Safety Factor if Allowable	Backfill Weight (pcf)	Cohesion (ksf)	Internal Friction Angle (deg)	Sliding Friction	Passive Pressure (ksf)	Allowable or Ult?	Safety Factor if Allowable
5.00	Allowable	2.00	125.00	0.00	0.00	0.40	0.00	Ultimate	1.00
<b>Net</b>									

## Pad and Pier Data Entry & Calculations

### Soil Information

Soil Parameters Based On: **Geotechnical Report**  
Geotechnical Report Information: **S.W. Cole Report Number 21-1434 S dated 11/10/2021**

### Reactions

Structure Type **Pole**  
Axial: **49.283** kips  
Global Shear **53.529** kips  
Moment **5348.269** ft-kips  
Torsion **0.000** ft-kips  
Bolt Circle **60.5** in  
Bolt Length **66** in  
Bolt Projection **12** in

### Enter Foundation Size

Concrete Slab Only? **N** (Enter "Y" if there is no pier)  
Pedestal Diameter **7.00** ft  
Pedestal Shape **CIRCULAR**  
Pedestal Extension Above Grade **0.50** ft  
Depth to Bottom of Slab **5.50** ft  
Height of Pedestal **3.50** ft  
Slab Width **25.00** ft  
Slab Thickness **2.50** ft

### Enter Rebar Size & Quantity

Pad Rebar Size (Top) **7**  
Pad Rebar Quantity (Top) **22**  
Pad Rebar Size (Bottom) **8**  
Pad Rebar Quantity (Bottom) **42**  
Pedestal Vertical Rebar Size **9**  
Pedestal Vertical Rebar Quantity **36**  
Pedestal Tie Rebar Size **4**  
Pedestal Tie Rebar Quantity **5**

### Rebar Spacing

### Min. Rebar

	Rebar Spacing	Min. Rebar
Top	$3 \leq 13.1 \leq 17.1$	14
	✓	✓
Bottom	$3 \leq 6.1 \leq 17$	11
	✓	✓
Vertical	$3 \leq 5.3 \leq 16.9$	28
	✓	✓
Ties	$3 \leq 14 \leq 18.048$	4
	✓	✓

### Select Design Options

Excess Reinforcement Reduction (ACI 318-14 25.4.10)  (Not permitted for Seismic Design Category D, E, or F, 25.4.10.2(e))  
Eccentricity Using Working Loads?  (For REV G or REV H Only)  
Working Load Conversion Factor **1.35**  
Top and Bottom Rebar Same?   
Check if Eccentricity is Within Kern?   
Check Diagonal Bearing Pressure?  (Required for TIA-H. Optional for Other Codes)

### Site Information

Customer: **Verizon Wireless** Site: **Wolcott, CT**  
Project Number: **537228**

### Soil & Concrete Properties

Allowable Net Soil Bearing Capacity	<b>5.00</b>	ksf
Water Depth	<b>99.00</b>	ft
Depth of Fill	<b>3.00</b>	ft
Backfill Weight Above Water, $\gamma$	<b>125.00</b>	pcf
Backfill Weight Below Water	<b>62.60</b>	pcf
Concrete Weight Above Water	<b>150.00</b>	pcf

Concrete Weight Below Water	<b>87.60</b>	pcf
Cohesion	<b>0.00</b>	ksf
Internal Friction Angle	<b>0.00</b>	deg
Passive Pressure	<b>0.00</b>	ksf
Sliding Friction	<b>0.40</b>	
Frost Depth	<b>4.00</b>	ft
Concrete Design Strength	<b>4500.00</b>	psi

Foundation Calculations			
Structural Code:	<b>TIA-222-G</b>	Concrete Code:	<b>ACI 318-14</b>
<b>Concrete &amp; Soil Weight</b>			
Pedestal Volume	<b>134.696</b>	ft <sup>3</sup>	
Pedestal Weight (total weight above & below water)	<b>20.204</b>	kips	
Slab Volume	<b>1562.500</b>	ft <sup>3</sup>	
Slab Weight	<b>234.375</b>	kips	
Total Concrete Weight	<b>254.579</b>	kips	
Soil Weight Above Footing	<b>219.943</b>	kips	
Total Concrete Volume	<b>62.86</b>	cubic yards	

Sliding Resistance			
Passive Pressre Coefficient, Kp	<b>1.00</b>		
Passive Pressure Top	<b>0.50</b>	ksf	
Passive Pressure Bottom	<b>0.69</b>	ksf	
Average Passive Pressure	<b>0.59</b>	ksf	
Shear Depth	<b>1.50</b>	ft <sup>2</sup>	
Shear Area	<b>37.50</b>	ft <sup>2</sup>	
Resisting Weight (Factored)	<b>464.03</b>	kips	
Ultimate Shear Resistance	<b>207.88</b>	kips	
Nominal Shear Resistance	<b>155.91</b>	kips	
Shear Demand	<b>53.53</b>	kips	
<b>Check for Sliding</b>	<b>✓</b>		
Stress Ratio	<b>34.33%</b>		

Overturning Resistance			
From Weight	<b>5800.41</b>	ft-kips	
From Passive Pressure	<b>11.13</b>	ft-kips	
From Soil Wedge	<b>0.00</b>	ft-kips	
Total Resisting Moment (Factored)	<b>5808.76</b>	ft-kips	
Moment Resistance Demand	<b>5669.44408</b>	ft-kips	
<b>Check for Overturning Resistance</b>	<b>✓</b>		
Stress Ratio	<b>97.60%</b>		

Bearing Resistance (Parallel Direction)			
Slab Area	<b>625.0000</b>	ft <sup>2</sup>	
Section Modulus of Slab	<b>2604.1667</b>	ft <sup>3</sup>	
Kern Limit	<b>4.1667</b>	ft	
Total Weight (LC 0.9D)	<b>464.0328</b>	kips	
Eccentricity (LC 0.9D)	<b>9.0502</b>	ft	
Maximum Toe Pressure (LC 0.9D)	<b>3.1794</b>	ksf	
Minimum Toe Pressure (LC 0.9D)	<b>-1.1748</b>	ksf	
Adjusted Toe Pressure (if E > Kern) (LC 0.9D)	<b>4.8424</b>	ksf	

Total Weight (LC 1.2D)	<b>618.7105</b>	kip
Eccentricity (LC 1.2D)	<b>6.7876</b>	ft
Maximum Toe Pressure (LC 1.2D)	<b>3.5135</b>	ksf
Minimum Toe Pressure (LC 1.2D)	<b>-0.8407</b>	ksf
Adjusted Toe Pressure (if E > Kern) (LC 1.2D)	<b>3.8992</b>	ksf

<b>Bearing Resistance (Diagonal Direction)</b>			
Kern Limit	<b>4.1667</b>	ft	
Moment of Inertia of Mat	<b>32552.0833</b>	ft <sup>4</sup>	
Total Weight (LC 0.9D)	<b>464.0328</b>	kip	
Eccentricity (LC 0.9D)	<b>9.0502</b>	ft	
Bearing at A	<b>3.0231</b>	ksf	
Bearing at B	<b>0.7425</b>	ksf	
Bearing at C	<b>-1.5382</b>	ksf	
Bearing at D	<b>0.7425</b>	ksf	
Initial Location of NA from C	<b>11.9227</b>	ft	
Calculated Location of NA from C	<b>18.1005</b>	ft	
Length of Line GH	<b>34.5098</b>	ft	
Length of EG & HJ	<b>0.0000</b>	ft	
Length of BG & HD	<b>0.0000</b>	ft	
Length of EJ	<b>34.5098</b>	ft	
Height for EAJ	<b>17.2549</b>	ft	
Height for EBG & HDJ	<b>0.0000</b>	ft	
MOI for EAJ	<b>14773.9617</b>	ft <sup>4</sup>	
MOI for EBG & HDJ	<b>0.0000</b>	ft <sup>4</sup>	
MOI for ABGHDA	<b>14773.9617</b>	ft <sup>4</sup>	
Distance to Point Load from EJ	<b>8.6274</b>	ft	
Effective Length in Bearing Along AB & AD	<b>24.4021</b>	ft	
Volume of Pressure Envelope for ABD	<b>464.0312</b>	kip	
Volume of Pressure Envelope for GIKH	<b>0.0000</b>	kip	
Volume of Pressure Envelope for BIG & DKH	<b>0.00000000</b>	kip	
Total Volume of Pressure Envelope	<b>464.0312</b>	kip	
Difference in Weight	<b>0.0000</b>	kip	OK
Adjusted Bearing at A	<b>4.6757</b>	ksf	
Adjusted Bearing at B & D	<b>0.0000</b>	ksf	
Maximum Diagonal Bearing Pressure (LC 0.9D)	<b>6.3122</b>	ksf	
Total Weight (LC 1.2D)	<b>618.7105</b>	kip	
Eccentricity (LC 1.2D)	<b>6.7876</b>	ft	
Bearing at A	<b>3.2706</b>	ksf	
Bearing at B	<b>0.9899</b>	ksf	
Bearing at C	<b>-1.2907</b>	ksf	
Bearing at D	<b>0.9899</b>	ksf	
Initial Location of NA from C	<b>10.0044</b>	ft	
Calculated Location of NA from C	<b>13.2928</b>	ft	
Length of Line GH	<b>26.5855</b>	ft	
Length of EG & HJ	<b>8.7698</b>	ft	
Length of BG & HD	<b>6.2012</b>	ft	
Length of EJ	<b>44.1251</b>	ft	
Height for EAJ	<b>22.0626</b>	ft	
Height for EBG & HDJ	<b>4.3849</b>	ft	
MOI for EAJ	<b>39488.7338</b>	ft <sup>4</sup>	
MOI for EBG & HDJ	<b>61.6152</b>	ft <sup>4</sup>	



MOI for ABGHDA	<b>39365.5033</b>	ft <sup>4</sup>	
Distance to Point Load from EJ	<b>11.1725</b>	ft	
Effective Length in Bearing Along AB & AD	<b>25.0000</b>	ft	
Volume of Pressure Envelope for ABD	<b>563.9747</b>	kips	
Volume of Pressure Envelope for GIKH	<b>44.8806</b>	kips	
Volume of Pressure Envelope for BIG & DKH	<b>4.9349</b>	kips	
Total Volume of Pressure Envelope	<b>618.7252</b>	kips	
Difference in Weight	<b>0.0000</b>	kips	OK
Adjusted Bearing at A	<b>3.8742</b>	ksf	
Adjusted Bearing at B & D	<b>0.7700</b>	ksf	
Maximum Diagonal Bearing Pressure (LC 1.2D)	<b>5.2301</b>	ksf	
IS ECCENTRICITY WITHIN 45% OF FOUNDATION WIDTH	<b>YES</b>		
Maximum Bearing Pressure	<b>6.3122</b>		
Ultimate Gross Bearing Pressure	<b>10.6875</b>	ksf	
Factored Bearing Pressure	<b>8.0156</b>	ksf	
Check Bearing Capacity	<b>✓</b>		
Stress Ratio	<b>78.75%</b>		

Concrete One Way Shear Strength			
Pad Rebar Size (Top)	<b>7</b>		
Pad Rebar Diameter (Top)	<b>0.875</b>	in	
Pad Single Rebar Area (Top)	<b>0.601</b>	in <sup>2</sup>	
Pad Rebar Size (Bottom)	<b>8</b>		
Pad Rebar Diameter (Bottom)	<b>1.000</b>	in	
Pad Single Rebar Area (Bottom)	<b>0.785</b>	in <sup>2</sup>	
Effective Depth (dc)	<b>26.5000</b>	in	
Distance from Edge of Pad to Column Face	<b>108.0000</b>	in	
Distance from Edge of Pad to DC	<b>81.5000</b>	in	
Bearing Slope (LC 0.9D)	<b>0.4679</b>	kcf	
Shear Demand (LC 0.9D)	<b>552.4155</b>	kips	
Bearing Slope (LC 1.2D)	<b>0.2275</b>	kcf	
Shear Demand (LC 1.2D)	<b>530.8606</b>	kips	
Shear Resistance (per ACI 318-14 22.5.5.1)	<b>799.9533</b>	kips	
Check One Way Shear	<b>✓</b>		
Stress Ratio	<b>69.06%</b>		

Concrete Two Way Shear Strength			
Equivalent Column Width (PER ACI 318-14 8.10.1.3 & 22.6.4.1.2)	<b>74.4431</b>	in	
Mat Effective Width in Bearing (LC 0.9D)	<b>10.3494</b>	ft	
Mat Effective Width in Bearing (LC 1.2D)	<b>17.1371</b>	ft	
Critical Section Properties			
Critical Section Length (b1)	<b>100.9431</b>	in	
Critical Section Length (b2)	<b>100.9431</b>	in	
Critical Section Perimeter (b0)	<b>403.7722</b>	in	
Centroid of Critical Section (c)	<b>50.4715</b>	in	
Slab Moment (Msc)	<b>5535.6209</b>	ft-kips	
Polar MOI of Critical Section (Jc)	<b>18484303.2630</b>	in <sup>4</sup>	

Fraction of Moment Transferred by Flexure	<b>0.6000</b>	
Fraction of Moment Transferred by Eccentricity of Shear	<b>0.4000</b>	
Bearing Slope (LC 0.9D)	<b>0.4679</b>	kcf
Average Bearing Pressure at Centroid (LC 0.9D)	<b>0.0000</b>	ksf
Bearing Slope (LC 1.2D)	<b>0.2275</b>	kcf
Average Bearing Pressure at Centroid (LC 1.2D)	<b>1.0551</b>	ksf
Shear Force at Centroid	<b>73.5285</b>	kips
Shear Stress at Centroid	<b>79.4241</b>	psi
Available Shear (PER ACI 318-14 22.6.5.2)	<b>201.2461</b>	psi
<b>Check Two Way Shear for Interior Column</b>	<b>✓</b>	
Stress Ratio	<b>39.47%</b>	
<b>Critical Section Reinforcement Design</b>		
Effective Beam Width for Resisting Flexure	<b>14.5000</b>	ft
Moment Transferred by Flexure	<b>3321.3726</b>	ft-kips
ACI Factor per Table 22.2.2.4.3 ( $\beta_1$ )	<b>0.8250</b>	
Area of Steel Required	<b>27.8522</b>	in <sup>2</sup>
Depth of Stress Block	<b>2.5109</b>	in
Area of Steel Required in Effective Width	<b>26.3136</b>	in <sup>2</sup>
Area of Steel Required in Entire Mat (One Way)	<b>45.3682</b>	in <sup>2</sup>
Area of Steel Provided in Bottom	<b>46.2158</b>	in <sup>2</sup>
<b>Check Two Way Shear Reinforcement</b>	<b>✓</b>	
Stress Ratio	<b>98.17%</b>	

<b>Pad Flexure / Reinforcement Design</b>		
<b>Bottom Rebar</b>		
Bearing Pressure at Critical Section (LC 0.9D)	<b>0.6314</b>	ksf
Factored Bearing Moment (LC 0.9D)	<b>3481.6792</b>	ft-kips
Bearing Pressure at Critical Section (LC 1.2D)	<b>1.8514</b>	ksf
Factored Bearing Moment (LC 1.2D)	<b>3256.8123</b>	ft-kips
Area of Rebar Steel Provided in Bottom	<b>32.9867</b>	in <sup>2</sup>
Depth of Stress Block	<b>1.7248</b>	in <sup>2</sup>
Nominal Flexural Strength	<b>4228.5024</b>	ft-kips
Depth to Neutral Axis	<b>2.0907</b>	in
Steel Strain	<b>0.0350</b>	in/in
Strength Reduction Factor per ACI 21.2.2	<b>0.90</b>	
Factored Flexural Strength	<b>3805.6521</b>	ft-kips
<b>Check Bottom Rebar Flexural Strength</b>	<b>✓</b>	
Stress Ratio	<b>91.49%</b>	
<b>Top Rebar</b>		
Factored Moment from Dead Weight (LC 0.9D)	<b>683.4375</b>	ft-kips
Factored Moment from Dead Weight (LC 1.2D)	<b>911.2500</b>	ft-kips
Area of Rebar Steel Provided in Top	<b>13.2291</b>	in <sup>2</sup>
Depth of Stress Block	<b>0.6917</b>	in <sup>2</sup>
Nominal Flexural Strength	<b>1729.9723</b>	ft-kips
Depth to Neutral Axis	<b>0.8384</b>	in
Steel Strain	<b>0.0918</b>	in/in

Strength Reduction Factor per ACI 21.2.2	<b>0.90</b>	
Factored Flexural Strength	<b>1556.9751</b>	ft-kips
<b>Check Top Rebar Flexural Strength</b>	✓	
Stress Ratio	<b>58.53%</b>	

Pad Min. Rebar & Spacing Requirements		
Minimum Reinforcement Ratio for Slabs	<b>0.0018</b>	PER ACI 318-14 (7.6.1.1, 24.4.3.2)
Minimum Reinforcement Ratio for Beams	<b>0.0034</b>	PER ACI 318-14 (9.6.1.2)
Minimum Reinforcement Area Required	<b>8.1000</b>	in <sup>2</sup>
Area of Rebar Steel Provided in Top	<b>13.2291</b>	in <sup>2</sup>
<b>Check Minimum Rebar Area in Top</b>	✓	
Stress Ratio	<b>61.23%</b>	
Area of Rebar Steel Provided in Bottom	<b>32.9867</b>	in <sup>2</sup>
<b>Check Minimum Rebar Area in Bottom</b>	✓	
Stress Ratio	<b>24.56%</b>	
Minimum Rebar Clear Spacing	<b>3.0000</b>	in <small>Minimum clear spacing per ACI 318-14 (25.2.1) is smaller of 1 in, 1 rebar diameter, or 4/3 * maximum coarse aggregate diameter using 3 in here as minimum.</small>
Maximum Rebar Center to Center Spacing	<b>18.0000</b>	in PER ACI 318-14 (8.7.2)
Rebar Clear Spacing in Top	<b>13.0833</b>	in
<b>Check Rebar Clear Spacing in Top</b>	✓	
Rebar Clear Spacing in Bottom	<b>6.1463</b>	in
<b>Check Rebar Clear Spacing in Bottom</b>	✓	

Pad Rebar Development Length Requirements per ACI 318-14 25.4.2		
Modification Factors per ACI 318-14 Table 25.4.2.4		
Normal vs. Light Weight	<b>1</b>	
Epoxy Coating	<b>1.0</b>	Adjust per ACI for epoxy coated rebar if used.
Size (Top)	<b>0.8</b>	
Size (Bottom)	<b>1.0</b>	
Casting Position (Top)	<b>1.3</b>	
Casting Position (Bottom)	<b>1.0</b>	
Spacing / Cover (Top)	<b>2.5</b>	
Spacing / Cover (Bottom)	<b>2.5</b>	
Excess Reinforcement Ratio (Top)	<b>0.585</b>	PER ACI 318-14 25.4.10.1
Excess Reinforcement Ratio (Bottom)	<b>0.246</b>	
Development Length Demand (Top)	<b>14.2910</b>	in
Development Length Demand (Bottom)	<b>12.0000</b>	in
Length Available (Top & Bottom)	<b>105.0000</b>	
<b>Check Length (Top)</b>	✓	
<b>Check Length (Bottom)</b>	✓	

Pedestal Design		
Pedestal Min. Rebar & Spacing Requirements		
Pedestal Vertical Rebar Size	<b>9</b>	
Pedestal Vertical Rebar Diameter	<b>1.128</b>	in

Pedestal Vertical Single Rebar Area	<b>0.999</b>	in <sup>2</sup>	
Pedestal Vertical Total Rebar Area Provided	<b>35.976</b>	in <sup>2</sup>	
Minimum Rebar Ratio for Pedestals	<b>0.005</b>		PER ACI 318-14 16.3.4
Pedestal Vertical Total Rebar Area Required	<b>27.709</b>	in <sup>2</sup>	
<b>Check Pier Vertical Rebar Area</b> ✓			
Rebar Cage Diameter (to Center of Vertical Bars)	<b>73.872</b>	in	
Pedestal Vertical Rebar Clear Spacing	<b>5.319</b>	in	
<b>Check Pier Vertical Rebar Spacing</b> ✓			
Pedestal Tie Rebar Size	<b>4</b>	in	
Pedestal Tie Rebar Diameter	<b>0.500</b>	in	
Pedestal Tie Rebar Area	<b>0.196</b>	in <sup>2</sup>	
Pedestal Tie Quantity Provided	<b>5</b>		
Maximum Tie Spacing	<b>18.048</b>		PER ACI 318-14 25.7.2
Minimum Tie Quantity Required	<b>4.000</b>		Includes 1 additional at the top below the first tie
<b>Check Tie Spacing &amp; Quantity</b> ✓			
<b>Pedestal Compression Capacity</b>			
Maximum Axial Compressive Strength	<b>14254.708</b>	kips	PER ACI 318-14 Table 21.2.1 & 22.4.2.2
<b>Check Pedestal Compression Capacity</b> ✓			
Stress Ratio	<b>0.35%</b>		

<b>Pedestal Shear Capacity</b>			
Cross Section Diameter, Bw	<b>84.000</b>	in	
Distance from Extreme Compression Fiber to Centroid of Longitudinal Reinforcement	<b>67.200</b>	in	PER ACI 318-14 22.5.2.2
Factored Concrete Shear Capacity, Vc	<b>570.102</b>	kips	PER ACI 318-14 22.5.6.1 - PHI = 0.75
Check Cross Section Dimensions	<b>OK</b>		PER ACI 318-14 22.5.1.2
Shear Reinforcement Required	<b>0.000</b>	kips	PER ACI 318-14 22.5.10.1
Spacing of Shear Reinforcement Required	<b>NA</b>	in	PER ACI 318-14 22.5.10.5.3
<b>Check Pedestal Shear Capacity</b> ✓			
Stress Ratio	<b>9.39%</b>		

<b>Pedestal Moment Capacity</b>			
Pedestal Applied Moment	<b>5535.621</b>	ft-kips	
Pedestal Factored Moment Capacity	<b>5824.073</b>	ft-kips	
<b>Check Pedestal Capacity</b> ✓			
Stress Ratio	<b>95.05%</b>		

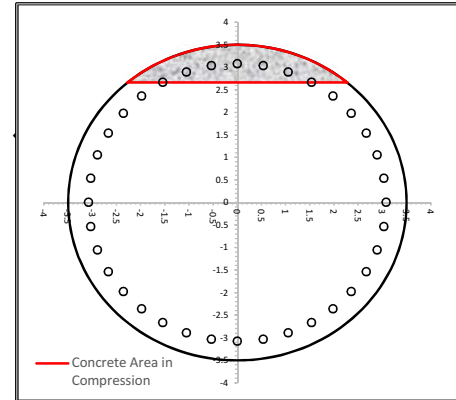
<b>Pedestal Vertical Rebar Development Length Requirements</b>			
Normal vs. Light Weight	<b>1</b>		
Epoxy Coating	<b>1.0</b>		
Casting Position	<b>1.0</b>		
Size	<b>1.0</b>		
Spacing Cover	<b>2.5</b>		
Confining Reinforcement (Compression)	<b>1.0</b>		PER ACI 318-14 TABLE 25.4.9.3
Confining Reinforcement (Hooks)	<b>1.0</b>		PER ACI 318-14 TABLE 25.4.3.2

Bar Size & Clear Cover	<b>0.7</b>		PER ACI 318-14 TABLE 25.4.3.2
Excess Reinforcement Ratio	<b>0.7702</b>		PER ACI 318-14 25.4.10.1
Development Length Demand (Tension)	<b>23.31</b>	in	PER ACI 318-14 25.4.2
Development Length Demand (Compression)	<b>15.64</b>	in	PER ACI 318-14 25.4.9.2
Development Length Demand (Hook)	<b>10.88</b>	in	
Length Available in Pedestal	<b>39.00</b>	in	
Check Vertical Bar in Pedestal (Tension)		✓	
Check Vertical Bar in Pedestal (Compression)		✓	
Length Available in Pad	<b>27.00</b>	in	
Check Vertical Bar in Pad (Tension)		✓	
Check Vertical bar in Pad (Compression)		✓	
Check Hook		✓	

<b>Pedestal Torsional Capacity</b>			
Pier Cross Section Area, Acp	<b>5541.769</b>	in <sup>2</sup>	
Pier Perimeter	<b>263.894</b>	in	
Threshold Torsion	<b>494.618</b>	ft-kips	PER ACI 318-14 22.7.4
Consider Torsion Effects?	<b>N</b>		
Web Width Bw	<b>84.000</b>	in	
Distance from Extreme Compression Fiber to Centroid of Longitudinal Reinforcement Diameter	<b>67.200</b>	in	
Perimeter Along Center of Transverse Rebar, ph	<b>237.190</b>	in	
Area Enclosed by Transverse Rebar, Aoh	<b>4476.966</b>	in <sup>2</sup>	
Ao	<b>3805.421</b>	in <sup>2</sup>	
Tie Spacing as Provided, s	<b>14.000</b>	in	
Nominal Torsional Strength	<b>533.709</b>	ft-kips	
Factored Torsional Strength	<b>400.282</b>	ft-kips	
<b>Cross Section Limits for Solid Sections</b>	<b>OK</b>		PER ACI 318-14 22.7.7.1
Check Torsional Strength		✓	PER ACI 318-14 22.7.6
Stress Ratio	<b>0.00%</b>		
<b>Anchor Steel Length Check</b>			
Anchor Bolt Embedment in Concrete	<b>54.000</b>	in	
Available Development Length	<b>45.818</b>	in	Note: assumes embedment plate is 2 in above bottom of anchor bolt.
Required Development Length (Tension)	<b>23.312</b>	in	
Check Anchor Bolt Engagement		✓	
Minimum Anchor Bolt Embedment per TIA-222-H 9.6	<b>13.372</b>	in	
Check Anchor Bolt Length		✓	

**MAXIMUM FACTORED MOMENT OF A CIRCULAR SECTION**

Axial Load (Negative for Compression)	-49.283	kips
Limiting Compressive Strain	0.003	in/in
Reinforcement Yield Strain	0.00207	in/in
Pier Diameter	7.00	ft
Vertical Rebar Diameter	1.128	in
Vertical Rebar Quantity	36	
Vertical Rebar Area	0.9993	in <sup>2</sup>
Tie Rebar Diameter	0.500	in
Concrete Clear Cover	4.0	in
Rebar Cage Diameter (to Center of Vertical Bars)	73.9	in
Concrete Compressive Strength	4500	psi
Distance from Extreme Edge to Neutral Axis	12.2	in
ACI Factor per Table 22.2.2.4.3 ( $\beta_1$ )	0.825	
Depth of Equivalent Stress Block	10.1	in
Distance from Centroid to Neutral Axis	29.8	in
Angle from Centroid to Compression Zone	40.5	deg
Area of Concrete in Compression	375.8	in <sup>2</sup>
Distance from Centroid of Concrete in Compression to Centroid of Pier	36.0	in
Concrete Compression Force	1410.5	kips
Total Reinforcement Forces	-1361.2	kips
Axial Load	-49.3	kips
Sum of Axial Forces	-1410.5	kips
Sum of Forces in Concrete	0.000	kips
Moment of Concrete in Compression	4232.4	ft-kips
Total Reinforcement Moment	2238.8	ft-kips
Nominal Strength of Column	6471.2	ft-kips
Tensile Strain in Extreme Layer of Reinforcement	-0.0164	in/in
ACI Strength Reduction Factor	0.90	
Factored Moment Strength of Column	5824.1	ft-kips



**OK**



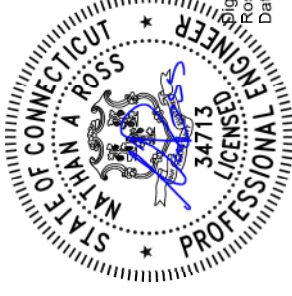
Valmont Microreflect  
3575 25<sup>th</sup> St. SE  
Salem, Oregon 97302 USA  
1-800-547-2151

Communication Structure Calculations  
for  
Verizon Wireless  
Wolcott, CT  
537228-P1

Tuesday, 15 February 2022

Prepared By:  
Yatong Zeng

Reviewed By:  
YZ



Digitally signed by Nathan A  
Ross  
Date: 2022-02-16 07:28-08:00

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Valmont Microreflect  
3575 25<sup>th</sup> St. SE  
Salem, Oregon 97302 USA  
1-800-547-2151

Table Of Contents

PROJECT SUMMARY .....S1-S3

VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT .....1

Proprietary Information

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Valmont Industries, Inc.  
 Project Summary  
 Verizon Wireless  
 537228

Structure Identifier	Pole Height (ft)	Emb. Length (ft)	Anchor Bolts			Shaft Diameters			Weight (lb)							Global Base Reactions For Pole Shaft Governing Load Case					
			Max Bolt Circle (in)	Anchor Bolt Length (in)	Qty	Base (in)	Ground Line (in)	Top (in)	Sect A	Sect B	Sect C	Sect D	Sect E	Sect F	Base Plate	Anchor Bolts	Load Case Identifier	Moment (in-kip)	Shear (kips)	Axial (kips)	Max Defl (in)
537228-P1	139.00	----	60.50	66	16	53.00	53.00	12.93	12445	6176	3776	632	-----	-----	2109	1636	WIND	64179	53.5	47.2	144

Valmont Industries, Inc.  
 Project Summary  
 Verizon Wireless  
 537228

Structure Identifier	Shaft Yield Stress (ksi)	Shaft Taper (in/ft)	Shaft Shape	Anchor Bolt Diameter (in)	Base Plate Width/Length (in)	Base Plate Thickness (in)	Camber (in)	Length (ft)						Thickness (in)									
								Sect A	Sect B	Sect C	Sect D	Sect E	Sect F	Sect A	Sect B	Sect C	Sect D	Sect E	Sect F				
537228-P1	65	0.300	18	2.25	66.50	2.75	0.0	51.75	38.92	38.58	20.00	---	---	---	---	0.500	0.438	0.375	0.188	---	---	---	---

Valmont Industries, Inc.  
 Project Summary  
 Verizon Wireless  
 537228

Structure Identifier	Section Data																	
	"A" Base Diameter (in)	"A" Top Diameter (in)	"B" Base Diameter (in)	"B" Top Diameter (in)	"C" Base Diameter (in)	"C" Top Diameter (in)	"D" Base Diameter (in)	"D" Top Diameter (in)	"E" Base Diameter (in)	"E" Top Diameter (in)	"F" Base Diameter (in)	"F" Top Diameter (in)	"A"- "B" Joint Type	"B"- "C" Joint Type	"C"- "D" Joint Type	"D"- "E" Joint Type	"E"- "F" Joint Type	
537228-P1	53.00	37.48	40.05	28.38	30.50	18.93	18.93	12.93	----	----	----	----	Slip	Joint	Slip	Joint	Flange	----

Valmont Industries, Inc.  
Engineering Data

\*\*\* OVERVIEW \*\*\*

1. Structure design conforms to TIA-222-G Addendum 2 including:  
 97 mph Wind Speed (3 second gust, 50 year return period)  
 50 mph Ice Wind (50 year return period)  
 0.75 in ice thickness  
 60.0 mph Basic Wind Speed with no ice for twist and sway  
 Exposure Category B  
 Structure Classification II  
 Topographic Category 3 (H = 552)  
 Spectral response acceleration at short periods and 1 sec.: Ss = 0.19 & S1 = 0.05  
 Site class = D
2. Feedlines are assumed to be placed interior to the pole
3. Total pole height is 140.0 ft agl
4. Elevations are measured from top of base plate (approximately 1.0 ft agl)
5. Future carrier assumed VzW loading as worst-case
6. THEORETICAL 20 FT FALL ZONE (FOR FLANGE CONNECTION @ 119 FT)
7. pole is extendable from 120' AGL to 140' AGL
8. Fall zone only applicable with extension and full design loading

\*\*\* Structure Anchorage Information \*\*\*

Pole Height (ft):	139.0	Number of Anchor Bolts:	16
Bolt Circle (in):	60.50	Diameter of Anchor Bolts (in):	2.25
Base Shear (lbs):	53529	Length of Anchor Bolts (in):	66.00
Base Vertical (lbs):	49283	Projection Length (in):	12.00
Base Moment (in-kips):	64179	Template OD (in):	64.00

\*\*\* Loading Data\*\*\*

Qty	Description	ABP Height (ft)	EPA (ft^2)	Weight (lbs)	Without Ice EPA (ft^2)	Weight (lbs)	With Ice EPA (ft^2)	Weight (lbs)
12	RFV01U-D1A	115.00	15.00	1176	18.48	1428	18.48	1428
3	DMP65R-BU8D (W/PM)	105.00	33.48	444	39.57	1137	39.57	1137
3	DMP65R-BU8D (W/PM)	95.00	33.48	444	39.57	1137	39.57	1137
12	RFV01U-D1A	135.00	15.00	1176	18.48	1428	18.48	1428
1	5/8" X 5' LIGHTNING ROD	139.00	0.47	21	3.17	75	3.17	75
2	JAHH-65B-R3B (W/PM)	135.00	83.28	1104	111.36	5424	111.36	5424
2	RAYCAP RVZDC-6627-PF-48	135.00	5.92	64	7.48	404	7.48	404
1	12' SP1 LP PLATFORM W/HR	135.00	27.02	1385	43.50	2994	43.50	2994
2	JAHH-65B-R3B (W/PM)	115.00	83.28	1104	111.36	5400	111.36	5400
2	RAYCAP RVZDC-6627-PF-48	115.00	5.92	64	7.48	402	7.48	402
1	12' SP1 LP PLATFORM W/HR	115.00	27.02	1385	43.45	2985	43.45	2985
3	CCI/TPA65R-BU8D (W/PM)	105.00	33.84	351	41.46	1950	41.46	1950
6	RAYCAP DC6-48-60-0-8C-EV (W/PM)	105.00	24.36	330	39.54	1890	39.54	1890
12	ALCATEL-LUCENT RRU 4449 B13 + B5	105.00	16.32	840	22.68	1908	22.68	1908
3	SP1 VFA12-HD	105.00	25.20	1974	77.49	4377	77.49	4377
3	CCI/TPA65R-BU8D (W/PM)	95.00	33.84	351	41.43	1944	41.43	1944
6	RAYCAP DC6-48-60-0-8C-EV (W/PM)	95.00	24.36	330	39.48	1890	39.48	1890
12	ALCATEL-LUCENT RRU 4449 B13 + B5	95.00	16.32	840	22.68	1908	22.68	1908
3	SP1 VFA12-HD	95.00	25.20	1974	77.31	4368	77.31	4368

BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 Design Id: 537228-PI

DATE 02/15/2022  
 IMPAX 24.5.25.5

Design Code: TIA-222-G Addendum 2

\*\*\* SUMMARY \*\*\*

----- DESIGN SUMMARY -----

Height Above Base Plate 139'- 0.00" Dia. at Top of Baseplate (in) 53.000 Pole Shaft Weight (lbs) 23030  
 Top Diameter (in) 12.925  
 Pole Taper (in/ft) 0.30000 Shape: 18 Sides

Connections Between Sections

	/First/	/Second/	/Third/	/Fourth/
Height Above Ground	51'- 9.00"	85'- 0.00"	119'- 0.00"	
Type	Slip Joint	Slip Joint	Flange Joint	
Overlap Length (in)	68	55	0	
Maximum Axial Force (lbs)	68798	58783	13830	

Section Characteristics

	/First/	/Second/	/Third/	/Fourth/
Base Diameter (in)	53.000	40.050	30.500	18.925
Top Diameter (in)	37.475	28.375	18.925	12.925
Thickness (in)	0.50000	0.43750	0.37500	0.18750
Length	51'- 9.00"	38'- 11.00"	38'- 7.00"	20'- 0.00"
Weight (lbs)	12445	6176	3776	632
Yield Strength (ksi)	65.00	65.00	65.00	65.00
Section Shape	18 Sides	18 Sides	18 Sides	18 Sides

----- ANALYSIS SUMMARY -----

	Pt. of Fixity	Governing Level Sec.1		Governing Level Sec.2		Governing Level Sec.3		Governing Level Sec.4		Pole Top
		WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	
Governing Load Case										
Height (ft)	0.00	39.00	51.75	85.00	119.00	139.00				
Resultant Moment (in-kips)	64179	40223	32828	14515	2096	2				
Shear Force (lbs)	53617	48932	47635	44277	11405	38				
Axial Force (lbs)	47075	33475	28033	18824	3704	19				
Effective Yield Strength (ksi)	81.49	82.55	82.55	82.55	82.54	82.55				
Combined Interaction Value	0.82	0.84	0.91	0.82	0.56	0.00				
Total Deflection (in)	0.00	9.22	16.78	49.76	104.09	143.89				

Note: Diameters are outside, measured across the flats  
 Forces and moments are reported in the local element coordinate system

----- SUMMARY OF SECTION DIMENSIONS AS DETAILED -----

Height Above Base Plate 139'- 0.00" Dia. at Top of Baseplate (in) 53.000 Pole Shaft Weight (lbs) 23030  
 Top Diameter (in) 12.925  
 Pole Taper (in/ft) 0.30000 Shape: 18 Sides

Connections Between Sections /First/ /Second/ /Third/

Height Above Ground 51'- 9.00" 85'- 0.00" 119'- 0.00"  
 Type Slip Joint Slip Joint Flange Joint  
 Flange Thickness (in) 1.500  
 Weld Root Gap (in) 0.250

Theoretical Design Section Dimensions /First/ /Second/ /Third/ /Fourth/

Base Diameter (in) 53.000 40.050 30.500 18.925  
 Top Diameter (in) 37.475 28.375 18.925 12.925  
 Thickness (in) 0.50000 0.43750 0.37500 0.18750  
 Length 51'- 9.00" 38'-11.00" 38'- 7.00" 20'- 0.00"

As Detailed Section Characteristics /First/ /Second/ /Third/ /Fourth/

BasePlate/Flange thk.at Base (in) 2.750 0.000 0.000 1.500  
 Weld Root Gap at Base (in) 0.000 0.000 0.000 0.250  
 Base Diameter (in) 53.000 40.050 30.500 18.881  
 Top Diameter (in) 37.475 28.375 18.969 12.925  
 Thickness (in) 0.50000 0.43750 0.37500 0.18750  
 Length 51'- 9.00" 38'-11.00" 38'- 5.25" 19'-10.25"  
 Taper (in/ft) 0.30000 0.30000 0.30000 0.30000  
 Weld Root Gap at Top (in) 0.000 0.000 0.250 0.000  
 BasePlate/Flange thk. at Top (in) 0.000 0.000 1.500 0.000

Note: Diameter are outside, measured across the flats



Loading Case Identifier	Moments About Y-Axis (in-kips)		Moments About X-Axis (in-kips)		Moments Resultant (X & Y) (in-kips)		Vertical Force (lbs)	Shear In Direction (lbs)		Shear Resultant (X & Y) (lbs)	Notes
	X-Direction	Y-Direction	X-Direction	Y-Direction	X-Direction	Y-Direction		X-Direction	Y-Direction		
WIND	49164	-41254	64179	0	47174	34408	41006	53529			
ICE + WIND	14144	-11868	18463	0	90877	9685	11543	15068			
T+S	10496	-8807	13702	0	38438	7378	8792	11478			
Seismic	1085	-911	1417	0	46064	750	894	1167			

Note: Positive vertical force is downward.  
 Reactions are considered in the global coordinate system.

BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 Design Id: 537228-PI

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* INPUT LOADS \*\*\*

Design Code TIA-222-G Addendum 2  
 Loading Case WIND

Basic Wind Velocity is 97.00 mph Ice Thickness 0.00  
 Wind Orientation is 50.0 Degrees Clockwise From +X Axis  
 Structure Weight Overload Factor is 1.200  
 Exposure B, Gust Factor 1.10  
 Structure Category 2, Topographic Category 3, Crest Height 552.00 ft  
 Orientations are Measured Clockwise From +X Axis  
 Positive Y Axis is 90 Degrees Clockwise From +X Axis  
 Foundation Rotation of 0.00 Degrees  
 Elevation of structure base above surrounding terrain = 1.00 ft

Orientation of System  
 +\*\*\*\*\* +X-Axis  
 \* \* \* \* \*  
 \* \* \* \* \* (Transverse)

(Longitudinal) \* \* \* (Vertical)  
 +Y-Axis \* \* \* +Z-Axis

Load Number	Mounting Height	Load Height	Load Eccentricity	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
1	115.00	115.00	0.00	50.00	691	823	1411	15.00	12-RFV01U-DIA
2	105.00	105.00	0.00	50.00	1529	1822	533	33.48	3-DMP65R-BU8D
3	95.00	95.00	0.00	50.00	1513	1803	533	33.48	3-DMP65R-BU8D
4	135.00	135.00	0.00	50.00	699	833	1411	15.00	12-RFV01U-DIA
5	139.00	142.50	0.00	50.00	22	26	25	0.47	1-5/8" x 5' 1
6	135.00	135.00	0.00	50.00	3879	4623	1325	83.28	12-JAHH-65B-R3
7	135.00	135.00	0.00	50.00	276	329	77	5.92	2-Raycap RVZD
8	135.00	135.00	0.00	50.00	1259	1500	1662	27.02	1-12' SP1 LP
9	115.00	115.00	0.00	50.00	3834	4569	1325	83.28	12-JAHH-65B-R3
10	115.00	115.00	0.00	50.00	273	325	77	5.92	2-Raycap RVZD
11	115.00	115.00	0.00	50.00	1244	1482	1662	27.02	1-12' SP1 LP
12	105.00	105.00	0.00	50.00	1545	1841	421	33.84	3-CCI/TPA65R-
13	105.00	105.00	0.00	50.00	1112	1326	396	24.36	6-Raycap DC6-
14	105.00	105.00	0.00	50.00	745	888	1008	16.32	12-Alcate1-Luc
15	105.00	105.00	0.00	50.00	1151	1371	2369	25.20	3-SP1 VFA12-H
16	95.00	95.00	0.00	50.00	1529	1823	421	33.84	3-CCI/TPA65R-
17	95.00	95.00	0.00	50.00	1101	1312	396	24.36	6-Raycap DC6-

BY VALMONT INDUSTRIES FOR:  
 Design Id: 537228-P1

VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* INPUT LOADS \*\*\*

Load Number	Mounting Height	WIND - Continued		Load Eccentricity	Load Orientation in XY Plane (Degrees)	Orientation of System				
		Force-X (lbs)	Force-Y (lbs)			Force-Z (lbs)	EPA (ft^2)	System Name		
18	95.00	95.00	0.00	0.00	50.00	738	879	1008	16.32	12-Alcatel-Luc
19	95.00	95.00	0.00	0.00	50.00	1139	1357	2369	25.20	3-SF1 VFA12-H

BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 Design Id: 537228-PI

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* INPUT LOADS \*\*\*

Design Code TIA-222-G Addendum 2  
 Loading Case ICE + WIND

Basic Wind Velocity is 50.00 mph Ice Thickness 0.75  
 Wind Orientation is 50.0 Degrees Clockwise From +X Axis  
 Structure Weight Overload Factor is 1.200  
 Exposure B, Gust Factor 1.10  
 Structure Category 2, Topographic Category 3, Crest Height 552.00 ft  
 Orientations are Measured Clockwise From +X Axis  
 Positive Y Axis is 90 Degrees Clockwise From +X Axis  
 Foundation Rotation of 0.00 Degrees  
 Elevation of structure base above surrounding terrain = 1.00 ft

Orientation of System  
 +\*\*\*\*\* +X-Axis  
 \* \* \* \* \*  
 \* \* \* \* \* (Transverse)

(Longitudinal) \* \* \* (Vertical)  
 +Y-Axis \* \* \* +Z-Axis

Load Number	Mounting Height	Load Height	Load Eccentricity	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft <sup>2</sup> )
1	115.00	115.00	0.00	50.00	141	168	1714	18.48
2	105.00	105.00	0.00	50.00	300	358	1364	39.57
3	95.00	95.00	0.00	50.00	297	354	1364	39.57
4	135.00	135.00	0.00	50.00	143	170	1714	18.48
5	139.00	142.50	0.00	50.00	25	29	90	3.17
6	135.00	135.00	0.00	50.00	862	1028	6509	111.48
7	135.00	135.00	0.00	50.00	58	69	485	7.48
8	135.00	135.00	0.00	50.00	337	401	3593	43.50
9	115.00	115.00	0.00	50.00	851	1015	6480	111.36
10	115.00	115.00	0.00	50.00	57	68	482	7.48
11	115.00	115.00	0.00	50.00	332	396	3582	43.45
12	105.00	105.00	0.00	50.00	314	375	2340	41.46
13	105.00	105.00	0.00	50.00	300	357	2268	39.54
14	105.00	105.00	0.00	50.00	172	205	2290	22.68
15	105.00	105.00	0.00	50.00	588	700	5252	77.49
16	95.00	95.00	0.00	50.00	311	371	2333	41.43
17	95.00	95.00	0.00	50.00	296	353	2268	39.48

BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 Design Id: 537228-P1

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* INPUT LOADS \*\*\*

Load Number	Mounting Height	ICE + WIND - Continued		Orientation in XY Plane (Degrees)	Orientation of System				
		Load Height	Load Eccentricity		Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
18	95.00	95.00	0.00	50.00	170	203	2290	22.68	12-Alcatel-Luc
19	95.00	95.00	0.00	50.00	580	691	5242	77.31	3-SF1 VFAL2-H



BY VALMONT INDUSTRIES FOR:  
 Design Id: 537228-PI

VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* INPUT LOADS \*\*\*

Load Number	Mounting Height	T+S - Continued		Orientation in XY Plane (Degrees)	Orientation of System				
		Load Height	Load Eccentricity		Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
18	95.00	95.00	0.00	50.00	158	188	840	16.32	12-Alcatel-Luc
19	95.00	95.00	0.00	50.00	244	290	1974	25.20	3-SF1 VFAL2-H

BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 Design Id: 537228-P1

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* INPUT LOADS \*\*\*

Design Code TIA-222-G Addendum 2  
 Loading Case Seismic  
 Seismic analysis following the Equivalent Modal Analysis Procedure  
 Structure Category: 2  
 Site Class: D  
 Response Acceleration at short periods: 0.19  
 Response Acceleration at one second: 0.05  
 The above are used to obtain the acceleration and velocity based site coefficients Fa and Fv  
 Foundation Rotation of 0.00 Degrees  
 Elevation of structure base above surrounding terrain = 1.00 ft

Load Number	Mounting Height	Load Height	Load Eccentricity	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft <sup>2</sup> )
1	115.00	115.00	0.00	50.00	0	0	1411	15.00
2	105.00	105.00	0.00	50.00	0	0	533	33.48
3	95.00	95.00	0.00	50.00	0	0	533	33.48
4	135.00	135.00	0.00	50.00	0	0	1411	15.00
5	139.00	142.50	0.00	50.00	0	0	25	0.47
6	135.00	135.00	0.00	50.00	0	0	1325	83.28
7	135.00	135.00	0.00	50.00	0	0	77	5.92
8	135.00	135.00	0.00	50.00	0	0	1662	27.02
9	115.00	115.00	0.00	50.00	0	0	1325	83.28
10	115.00	115.00	0.00	50.00	0	0	77	5.92
11	115.00	115.00	0.00	50.00	0	0	1662	27.02
12	105.00	105.00	0.00	50.00	0	0	421	33.84
13	105.00	105.00	0.00	50.00	0	0	396	24.36
14	105.00	105.00	0.00	50.00	0	0	1008	16.32
15	105.00	105.00	0.00	50.00	0	0	2369	25.20
16	95.00	95.00	0.00	50.00	0	0	421	33.84
17	95.00	95.00	0.00	50.00	0	0	396	24.36
18	95.00	95.00	0.00	50.00	0	0	1008	16.32



BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT DATE 02/15/2022  
 Design Id: 537228-P1 \*\*\* INPUT LOADS \*\*\* IMPAX 24.5.25.5

Load Number	Loading Case		Seismic - Continued		Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	Orientation of System	
	Mounting Height	Load Height	Eccentricity	Load					EPA	(ft^2)
19	95.00	95.00	0.00	0.00	50.00	0	0	2369	25.20	3-SF1 VFA12-H

\*\*\* Properties \*\*\*

Connection Locations	Distance From Base (ft)	Diameter Across Flats (in)	Wall Thickness (in)	D/t Across Flats	w/t Across Flats	Moments of Inertia (in^4)	Area (in^2)
Top of Sect 4	139.00	12.925	0.1875	68.93	10.39	155	7.58
	135.00	14.125	0.1875	75.33	11.52	203	8.29
	134.00	14.425	0.1875	76.93	11.80	217	8.47
	129.00	15.925	0.1875	84.93	13.21	293	9.37
	124.00	17.425	0.1875	92.93	14.62	385	10.26
	119.00	18.925	0.1875	100.93	16.03	494	11.15
Top of Sect 3	119.00	18.925	0.3750	50.47	7.14	960	22.08
	115.00	20.125	0.3750	53.67	7.70	1158	23.51
	114.00	20.425	0.3750	54.47	7.84	1212	23.86
	109.00	21.925	0.3750	58.47	8.55	1505	25.65
	105.00	23.125	0.3750	61.67	9.11	1770	27.08
	104.00	23.425	0.3750	62.47	9.25	1841	27.43
	99.00	24.925	0.3750	66.47	9.96	2224	29.22
	95.00	26.125	0.3750	69.67	10.52	2567	30.65
	94.00	26.425	0.3750	70.47	10.66	2657	31.00
	89.00	27.925	0.3750	74.47	11.37	3143	32.79
	85.00	29.125	0.3750	77.67	11.93	3572	34.22
Top of Sect 2	85.00	28.375	0.4375	64.86	9.67	3824	38.79
	84.00	28.675	0.4375	65.54	9.79	3949	39.21
Base of Sect 3	80.42	29.750	0.4375	68.00	10.23	4417	40.70
	79.00	30.175	0.4375	68.97	10.40	4612	41.29
	74.00	31.675	0.4375	72.40	11.00	5346	43.38
	69.00	33.175	0.4375	75.83	11.61	6153	45.46
	64.00	34.675	0.4375	79.26	12.21	7039	47.54
	59.00	36.175	0.4375	82.69	12.82	8005	49.62
	54.00	37.675	0.4375	86.11	13.42	9056	51.71
	51.75	38.350	0.4375	87.66	13.69	9557	52.64
Top of Sect 1	51.75	37.475	0.5000	74.95	11.45	10132	58.68
	49.00	38.300	0.5000	76.60	11.74	10826	59.99
Base of Sect 2	46.08	39.175	0.5000	78.35	12.05	11595	61.38
	44.00	39.800	0.5000	79.60	12.27	12166	62.37
	39.00	41.300	0.5000	82.60	12.80	13613	64.75
	34.00	42.800	0.5000	85.60	13.33	15170	67.13
	29.00	44.300	0.5000	88.60	13.86	16842	69.51
	24.00	45.800	0.5000	91.60	14.39	18632	71.89
	19.00	47.300	0.5000	94.60	14.92	20545	74.27
	14.00	48.800	0.5000	97.60	15.45	22584	76.65

BY VALMONT INDUSTRIES  
 Design Id: 537228-PI

FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

DATE 02/15/2022  
 IMPAX 24.5.25.5

\*\*\* Properties \*\*\*

Connection Locations	Distance From Base (ft)	Diameter Across Flats (in)	Wall Thickness (in)	D/t Across Flats	w/t Across Flats	Moments of Inertia (in^4)	Area (in^2)
	4.00	51.800	0.5000	103.60	16.50	27059	81.41
Pt of Fixity	0.00	53.000	0.5000	106.00	16.93	29003	83.31

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case WIND

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
139.00	1	-1	2	0	24	29	38	19
135.00	7	-6	9	0	163	194	253	145
135.00	7	-6	9	0	6678	7959	10389	2924
134.00	102	-86	134	0	6711	7998	10440	2978
129.00	589	-494	769	0	6896	8218	10728	3211
124.00	1090	-915	1423	0	7095	8456	11038	3490
119.00	1606	-1347	2096	0	7331	8737	11405	3704
119.00	1606	-1347	2096	0	7317	8720	11383	3772
115.00	2031	-1704	2651	0	7537	8982	11725	4137
115.00	2031	-1704	2651	0	13932	16604	21674	7191
114.00	2230	-1871	2911	0	13974	16654	21740	7355
109.00	3240	-2719	4230	0	14246	16977	22162	7965
105.00	4062	-3409	5303	0	14498	17278	22555	8388
105.00	4062	-3409	5303	0	20924	24936	32552	11837
104.00	4362	-3660	5694	0	20958	24976	32604	12078
99.00	5873	-4928	7666	0	21243	25316	33048	12856
95.00	7096	-5954	9263	0	21525	25653	33487	13338
95.00	7096	-5954	9263	0	27843	33182	43315	16993
94.00	7495	-6289	9783	0	27863	33206	43347	17322
89.00	9500	-7972	12402	0	28151	33549	43795	18283
85.00	11119	-9330	14515	0	28461	33918	44277	18824
85.00	11119	-9330	14515	0	28411	33859	44199	19005
84.00	11526	-9672	15047	0	28455	33912	44269	19462
80.42	12993	-10902	16961	0	28730	34239	44696	20726
79.00	13576	-11392	17722	0	28776	34294	44768	21189
74.00	15649	-13131	20428	0	29079	34655	45239	22401
69.00	17743	-14888	23162	0	29391	35027	45724	23655
64.00	19861	-16665	25926	0	29711	35408	46222	24949
59.00	22001	-18461	28721	0	30039	35799	46733	26280
54.00	24166	-20278	31546	0	30409	36239	47307	27556
51.75	25148	-21101	32828	0	30619	36490	47635	28033
51.75	25148	-21101	32828	0	30557	36416	47538	28196
49.00	26355	-22114	34404	0	30769	36669	47868	29630
46.08	27645	-23197	36088	0	31005	36950	48235	31147
44.00	28571	-23974	37297	0	31110	37076	48399	31886
39.00	30813	-25855	40223	0	31453	37484	48932	33475
34.00	33079	-27756	43181	0	31795	37892	49464	35105
29.00	35369	-29678	46171	0	32134	38296	49992	36777
24.00	37684	-31621	49193	0	32477	38705	50526	38489
19.00	40024	-33584	52248	0	32835	39132	51083	40244

DATE 02/15/2022  
 IMPAX 24.5.25.5

FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

BY VALMONT INDUSTRIES  
 Design Id: 537228-PI

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case WIND									
Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)	
14.00	42390	-35570	55336	0	33209	39577	51664	42040	
9.00	44784	-37578	58461	0	33598	40041	52269	43878	
4.00	47205	-39610	61622	0	34017	40540	52921	45735	
0.00	49164	-41254	64179	0	34464	41073	53617	47075	

\*\*\* Deflections and Stresses \*\*\*

Loading Case WIND

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
139.00	92.5	110.2	143.9	8.7	9.87	0.00	0.00	0.00	0.00	0.01	82.55
135.00	87.2	103.9	135.7	8.0	9.87	0.00	0.00	0.00	0.00	0.01	82.55
135.00	87.2	103.9	135.7	8.0	9.87	0.01	0.00	0.09	0.00	0.02	82.55
134.00	85.9	102.3	133.6	7.9	9.86	0.01	0.06	0.08	0.00	0.07	82.55
129.00	79.3	94.5	123.4	7.0	9.65	0.00	0.29	0.08	0.00	0.30	82.55
124.00	73.0	87.0	113.5	6.2	9.27	0.00	0.44	0.07	0.00	0.45	82.55
119.00	66.9	79.7	104.1	5.4	8.80	0.00	0.55	0.07	0.00	0.56	82.54
119.00	66.9	79.7	104.1	5.4	8.80	0.00	0.28	0.04	0.00	0.29	82.55
115.00	62.2	74.2	96.8	4.9	8.59	0.00	0.31	0.03	0.00	0.32	82.55
115.00	62.2	74.2	96.8	4.9	8.59	0.00	0.31	0.06	0.00	0.32	82.55
114.00	61.1	72.8	95.0	4.7	8.53	0.00	0.34	0.06	0.00	0.34	82.55
109.00	55.5	66.1	86.3	4.1	8.22	0.00	0.42	0.06	0.00	0.43	82.55
105.00	51.1	60.9	79.5	3.6	7.94	0.00	0.47	0.06	0.00	0.48	82.55
105.00	51.1	60.9	79.5	3.6	7.94	0.01	0.47	0.08	0.00	0.49	82.55
104.00	50.1	59.7	77.9	3.5	7.87	0.01	0.50	0.08	0.00	0.51	82.55
99.00	44.9	53.5	69.9	3.0	7.48	0.01	0.59	0.08	0.00	0.60	82.55
95.00	41.0	48.8	63.8	2.6	7.15	0.01	0.64	0.08	0.00	0.66	82.55
95.00	41.0	48.8	63.8	2.6	7.15	0.01	0.64	0.10	0.00	0.66	82.55
94.00	40.0	47.7	62.3	2.5	7.06	0.01	0.66	0.10	0.00	0.68	82.55
89.00	35.4	42.2	55.1	2.0	6.61	0.01	0.75	0.09	0.00	0.77	82.55
85.00	32.0	38.1	49.8	1.7	6.23	0.01	0.81	0.09	0.00	0.82	82.55
85.00	32.0	38.1	49.8	1.7	6.23	0.01	0.74	0.08	0.00	0.75	82.55
84.00	31.2	37.1	48.5	1.7	6.14	0.01	0.75	0.08	0.00	0.76	82.55
80.42	28.3	33.7	44.0	1.4	5.81	0.01	0.78	0.08	0.00	0.79	82.55
79.00	27.2	32.4	42.3	1.3	5.68	0.01	0.79	0.07	0.00	0.81	82.55
74.00	23.5	28.0	36.6	1.1	5.23	0.01	0.83	0.07	0.00	0.84	82.55
69.00	20.1	24.0	31.3	0.8	4.78	0.01	0.85	0.07	0.00	0.87	82.55
64.00	17.1	20.4	26.6	0.7	4.34	0.01	0.87	0.07	0.00	0.88	82.55
59.00	14.3	17.0	22.3	0.5	3.91	0.01	0.89	0.06	0.00	0.90	82.55
54.00	11.8	14.1	18.4	0.4	3.49	0.01	0.90	0.06	0.00	0.91	82.55
51.75	10.8	12.9	16.8	0.3	3.30	0.01	0.90	0.06	0.00	0.91	82.55
51.75	10.8	12.9	16.8	0.3	3.30	0.01	0.83	0.06	0.00	0.84	82.55
49.00	9.6	11.4	14.9	0.3	3.09	0.01	0.83	0.05	0.00	0.84	82.55
46.08	8.4	10.0	13.1	0.2	2.88	0.01	0.83	0.05	0.00	0.84	82.55
44.00	7.6	9.1	11.9	0.2	2.72	0.01	0.83	0.05	0.00	0.84	82.55
39.00	5.9	7.1	9.2	0.1	2.37	0.01	0.83	0.05	0.00	0.84	82.55
34.00	4.4	5.3	6.9	0.1	2.02	0.01	0.83	0.05	0.00	0.84	82.55
29.00	3.2	3.8	5.0	0.1	1.69	0.01	0.83	0.05	0.00	0.84	82.55
24.00	2.2	2.6	3.4	0.0	1.38	0.01	0.83	0.05	0.00	0.84	82.55

BY VALMONT INDUSTRIES FOR:  
 Design Id: 537228-P1  
 Deflections and Stresses for Pole

VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

DATE 02/15/2022  
 IMPAX 24.5.25.5

Loading Case WIND

\*\*\* Deflections and Stresses \*\*\*

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
19.00	1.3	1.6	2.1	0.0	1.07	0.01	0.82	0.05	0.00	0.83	82.55
14.00	0.7	0.9	1.1	0.0	0.77	0.01	0.82	0.05	0.00	0.83	82.55
9.00	0.3	0.4	0.5	0.0	0.49	0.01	0.81	0.05	0.00	0.82	82.55
4.00	0.1	0.1	0.1	0.0	0.21	0.01	0.81	0.04	0.00	0.82	81.99
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.81	0.04	0.00	0.82	81.49

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case ICE + WIND

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
139.00	1	-1	2	0	27	33	43	88
135.00	5	-4	6	0	91	108	141	351
135.00	5	-4	6	0	1883	2244	2930	12527
134.00	32	-27	42	0	1895	2259	2948	12598
129.00	170	-143	222	0	1969	2346	3063	12972
124.00	314	-264	411	0	2043	2435	3178	13386
119.00	464	-389	606	0	2141	2552	3331	13830
119.00	464	-389	606	0	2126	2534	3308	13835
115.00	588	-494	768	0	2214	2639	3445	14397
115.00	588	-494	768	0	3930	4683	6114	26552
114.00	645	-541	841	0	3937	4692	6124	26704
109.00	930	-781	1214	0	4028	4800	6266	27476
105.00	1163	-976	1519	0	4126	4917	6419	28125
105.00	1163	-976	1519	0	6130	7306	9537	41530
104.00	1251	-1050	1633	0	6155	7336	9576	41698
99.00	1694	-1421	2211	0	6203	7392	9650	42599
95.00	2052	-1722	2678	0	6310	7519	9816	43336
95.00	2052	-1722	2678	0	8246	9827	12828	56742
94.00	2170	-1821	2833	0	8273	9859	12870	56932
89.00	2763	-2318	3607	0	8362	9965	13008	57931
85.00	3240	-2719	4229	0	8397	10007	13063	58783
85.00	3240	-2719	4229	0	8352	9953	12993	58799
84.00	3360	-2819	4386	0	8385	9993	13045	59228
80.42	3790	-3180	4948	0	8420	10035	13100	60833
79.00	3961	-3324	5171	0	8404	10015	13074	61192
74.00	4568	-3833	5963	0	8461	10083	13163	62460
69.00	5178	-4345	6759	0	8521	10155	13257	63787
64.00	5793	-4861	7562	0	8584	10230	13355	65174
59.00	6412	-5381	8371	0	8650	10309	13457	66619
54.00	7037	-5904	9186	0	8744	10420	13603	68116
51.75	7319	-6142	9555	0	8816	10507	13716	68798
51.75	7319	-6142	9555	0	8772	10454	13647	68812
49.00	7666	-6433	10007	0	8821	10513	13724	70558
46.08	8036	-6743	10491	0	8882	10585	13818	72446
44.00	8302	-6966	10837	0	8888	10593	13828	73183
39.00	8943	-7504	11675	0	8964	10683	13946	74979
34.00	9590	-8047	12519	0	9041	10775	14065	76836
29.00	10242	-8594	13370	0	9117	10866	14184	78754
24.00	10900	-9146	14229	0	9196	10959	14306	80730
19.00	11563	-9703	15095	0	9280	11059	14437	82763



DATE 02/15/2022  
 IMPAX 24.5.25.5

FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

BY VALMONT INDUSTRIES  
 Design Id: 537228-PI

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case ICE + WIND									
Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)	
14.00	12233	-10265	15969	0	9369	11166	14576	84849	
9.00	12909	-10832	16851	0	9464	11279	14723	86982	
4.00	13592	-11405	17743	0	9572	11407	14891	89149	
0.00	14144	-11868	18463	0	9717	11580	15116	90869	

Loading Case ICE + WIND

\*\*\* Deflections and Stresses \*\*\*

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
139.00	26.9	32.0	41.8	0.8	2.86	0.00	0.00	0.00	0.00	0.01	82.55
135.00	25.3	30.2	39.4	0.7	2.86	0.00	0.00	0.00	0.00	0.01	82.55
135.00	25.3	30.2	39.4	0.7	2.86	0.02	0.00	0.02	0.00	0.03	82.55
134.00	25.0	29.7	38.8	0.7	2.86	0.02	0.02	0.02	0.00	0.04	82.55
129.00	23.1	27.5	35.9	0.7	2.80	0.02	0.08	0.02	0.00	0.10	82.55
124.00	21.2	25.3	33.0	0.6	2.69	0.02	0.13	0.02	0.00	0.15	82.55
119.00	19.4	23.2	30.2	0.5	2.55	0.02	0.16	0.02	0.00	0.18	82.54
119.00	19.4	23.2	30.2	0.5	2.55	0.01	0.08	0.01	0.00	0.09	82.55
115.00	18.1	21.5	28.1	0.5	2.49	0.01	0.09	0.01	0.00	0.10	82.55
115.00	18.1	21.5	28.1	0.5	2.49	0.02	0.09	0.02	0.00	0.11	82.55
114.00	17.7	21.1	27.6	0.5	2.47	0.02	0.10	0.02	0.00	0.11	82.55
109.00	16.1	19.2	25.1	0.4	2.38	0.02	0.12	0.02	0.00	0.14	82.55
105.00	14.8	17.7	23.1	0.4	2.31	0.01	0.14	0.02	0.00	0.15	82.55
104.00	14.5	17.3	22.6	0.3	2.28	0.02	0.14	0.02	0.00	0.16	82.55
99.00	13.0	15.5	20.3	0.3	2.17	0.02	0.17	0.02	0.00	0.19	82.55
95.00	11.9	14.2	18.5	0.3	2.08	0.02	0.19	0.02	0.00	0.21	82.55
95.00	11.9	14.2	18.5	0.3	2.08	0.03	0.19	0.03	0.00	0.21	82.55
94.00	11.6	13.8	18.1	0.3	2.05	0.03	0.19	0.03	0.00	0.22	82.55
89.00	10.3	12.2	16.0	0.2	1.92	0.03	0.22	0.03	0.00	0.24	82.55
85.00	9.3	11.1	14.4	0.2	1.81	0.02	0.24	0.03	0.00	0.26	82.55
85.00	9.3	11.1	14.4	0.2	1.81	0.02	0.21	0.02	0.00	0.24	82.55
84.00	9.0	10.8	14.0	0.2	1.78	0.02	0.22	0.02	0.00	0.24	82.55
80.42	8.2	9.8	12.7	0.2	1.69	0.02	0.23	0.02	0.00	0.25	82.55
79.00	7.9	9.4	12.3	0.2	1.65	0.02	0.23	0.02	0.00	0.25	82.55
74.00	6.8	8.1	10.6	0.1	1.52	0.02	0.24	0.02	0.00	0.26	82.55
69.00	5.8	6.9	9.1	0.1	1.39	0.02	0.25	0.02	0.00	0.27	82.55
64.00	4.9	5.9	7.7	0.1	1.26	0.02	0.25	0.02	0.00	0.27	82.55
59.00	4.1	4.9	6.4	0.1	1.13	0.02	0.26	0.02	0.00	0.28	82.55
54.00	3.4	4.1	5.3	0.1	1.01	0.02	0.26	0.02	0.00	0.28	82.55
51.75	3.1	3.7	4.8	0.1	0.96	0.02	0.26	0.02	0.00	0.28	82.55
51.75	3.1	3.7	4.8	0.1	0.96	0.02	0.24	0.02	0.00	0.26	82.55
49.00	2.8	3.3	4.3	0.0	0.90	0.02	0.24	0.02	0.00	0.26	82.55
46.08	2.4	2.9	3.8	0.0	0.83	0.02	0.24	0.02	0.00	0.26	82.55
44.00	2.2	2.6	3.4	0.0	0.79	0.02	0.24	0.02	0.00	0.26	82.55
39.00	1.7	2.0	2.7	0.0	0.68	0.02	0.24	0.01	0.00	0.26	82.55
34.00	1.3	1.5	2.0	0.0	0.58	0.02	0.24	0.01	0.00	0.26	82.55
29.00	0.9	1.1	1.4	0.0	0.49	0.02	0.24	0.01	0.00	0.26	82.55
24.00	0.6	0.7	1.0	0.0	0.40	0.02	0.24	0.01	0.00	0.26	82.55

BY VALMONT INDUSTRIES FOR:  
 Design Id: 537228-P1  
 Deflections and Stresses for Pole

VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

DATE 02/15/2022  
 IMPAX 24.5.25.5

Loading Case ICE + WIND

\*\*\* Deflections and Stresses \*\*\*

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
19.00	0.4	0.5	0.6	0.0	0.31	0.02	0.24	0.01	0.00	0.25	82.55
14.00	0.2	0.2	0.3	0.0	0.22	0.02	0.24	0.01	0.00	0.25	82.55
9.00	0.1	0.1	0.1	0.0	0.14	0.02	0.23	0.01	0.00	0.25	82.55
4.00	0.0	0.0	0.0	0.0	0.06	0.02	0.23	0.01	0.00	0.25	81.99
0.00	0.0	0.0	0.0	0.0	0.00	0.02	0.23	0.01	0.00	0.25	81.49

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case T+S									
Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)	
139.00	0	0	0	0	5	6	8	21	
135.00	1	-1	2	0	35	41	54	128	
135.00	1	-1	2	0	1430	1704	2224	3779	
134.00	22	-18	29	0	1437	1712	2235	3809	
129.00	126	-106	165	0	1475	1758	2295	3961	
124.00	233	-196	304	0	1517	1808	2360	4131	
119.00	344	-288	448	0	1567	1868	2438	4312	
119.00	344	-288	448	0	1564	1864	2433	4315	
115.00	434	-364	567	0	1610	1919	2505	4622	
115.00	434	-364	567	0	2977	3548	4631	8286	
114.00	477	-400	623	0	2985	3558	4644	8369	
109.00	693	-581	904	0	3042	3625	4732	8792	
105.00	868	-728	1133	0	3095	3688	4814	9148	
105.00	868	-728	1133	0	4466	5322	6948	13029	
104.00	932	-782	1217	0	4473	5330	6958	13127	
99.00	1254	-1053	1638	0	4532	5400	7050	13615	
95.00	1515	-1272	1978	0	4591	5471	7142	14019	
95.00	1515	-1272	1978	0	5938	7077	9238	17909	
94.00	1600	-1343	2089	0	5942	7081	9244	18023	
89.00	2028	-1702	2648	0	6002	7153	9337	18576	
85.00	2373	-1991	3098	0	6067	7230	9439	19029	
85.00	2373	-1991	3098	0	6056	7218	9422	19038	
84.00	2460	-2064	3211	0	6065	7228	9436	19293	
80.42	2773	-2327	3619	0	6122	7296	9524	20212	
79.00	2897	-2431	3782	0	6132	7308	9540	20419	
74.00	3338	-2801	4358	0	6196	7385	9640	21151	
69.00	3785	-3176	4941	0	6263	7464	9744	21918	
64.00	4236	-3554	5530	0	6333	7547	9852	22721	
59.00	4692	-3937	6125	0	6404	7632	9963	23558	
54.00	5154	-4324	6728	0	6484	7727	10087	24427	
51.75	5363	-4500	7001	0	6528	7780	10156	24825	
51.75	5363	-4500	7001	0	6517	7766	10138	24832	
49.00	5620	-4716	7337	0	6562	7821	10209	25888	
46.08	5895	-4947	7696	0	6613	7881	10288	27031	
44.00	6093	-5113	7954	0	6638	7911	10327	27477	
39.00	6571	-5514	8578	0	6714	8001	10445	28567	
34.00	7055	-5920	9210	0	6790	8093	10564	29696	
29.00	7544	-6330	9848	0	6867	8183	10682	30866	
24.00	8039	-6745	10494	0	6944	8275	10803	32076	
19.00	8539	-7165	11147	0	7025	8372	10929	33326	

DATE 02/15/2022  
 IMPAX 24.5.25.5

FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

BY VALMONT INDUSTRIES  
 Design Id: 537228-PI

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case T+S									
Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)	
14.00	9045	-7590	11808	0	7109	8473	11060	34617	
9.00	9558	-8020	12477	0	7198	8578	11197	35947	
4.00	10076	-8455	13154	0	7292	8690	11344	37317	
0.00	10496	-8807	13702	0	7387	8804	11493	38434	

Loading Case T+S \*\*\* Deflections and Stresses \*\*\*

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
139.00	19.8	23.6	30.8	0.4	2.11	0.00	0.00	0.00	0.00	0.01	82.55
135.00	18.7	22.2	29.0	0.4	2.11	0.00	0.00	0.00	0.00	0.01	82.55
135.00	18.7	22.2	29.0	0.4	2.11	0.01	0.00	0.02	0.00	0.01	82.55
134.00	18.4	21.9	28.6	0.4	2.11	0.01	0.01	0.02	0.00	0.02	82.55
129.00	17.0	20.2	26.4	0.3	2.06	0.01	0.06	0.02	0.00	0.07	82.55
124.00	15.6	18.6	24.3	0.3	1.98	0.01	0.09	0.02	0.00	0.10	82.55
119.00	14.3	17.0	22.3	0.3	1.88	0.01	0.12	0.02	0.00	0.12	82.54
119.00	14.3	17.0	22.3	0.3	1.88	0.00	0.06	0.01	0.00	0.06	82.55
115.00	13.3	15.9	20.7	0.2	1.83	0.00	0.07	0.01	0.00	0.07	82.55
115.00	13.3	15.9	20.7	0.2	1.83	0.01	0.07	0.01	0.00	0.07	82.55
114.00	13.1	15.6	20.3	0.2	1.82	0.00	0.07	0.01	0.00	0.08	82.55
109.00	11.9	14.1	18.4	0.2	1.75	0.00	0.09	0.01	0.00	0.10	82.55
105.00	10.9	13.0	17.0	0.2	1.69	0.00	0.10	0.01	0.00	0.11	82.55
105.00	10.9	13.0	17.0	0.2	1.69	0.01	0.10	0.02	0.00	0.11	82.55
104.00	10.7	12.7	16.6	0.2	1.68	0.01	0.11	0.02	0.00	0.11	82.55
99.00	9.6	11.4	14.9	0.2	1.60	0.01	0.13	0.02	0.00	0.13	82.55
95.00	8.8	10.4	13.6	0.1	1.52	0.01	0.14	0.02	0.00	0.14	82.55
95.00	8.8	10.4	13.6	0.1	1.52	0.01	0.14	0.02	0.00	0.15	82.55
94.00	8.5	10.2	13.3	0.1	1.51	0.01	0.14	0.02	0.00	0.15	82.55
89.00	7.6	9.0	11.8	0.1	1.41	0.01	0.16	0.02	0.00	0.17	82.55
85.00	6.8	8.1	10.6	0.1	1.33	0.01	0.17	0.02	0.00	0.18	82.55
85.00	6.8	8.1	10.6	0.1	1.33	0.01	0.16	0.02	0.00	0.16	82.55
84.00	6.7	7.9	10.3	0.1	1.31	0.01	0.16	0.02	0.00	0.17	82.55
80.42	6.0	7.2	9.4	0.1	1.24	0.01	0.17	0.02	0.00	0.17	82.55
79.00	5.8	6.9	9.0	0.1	1.21	0.01	0.17	0.02	0.00	0.18	82.55
74.00	5.0	6.0	7.8	0.1	1.12	0.01	0.18	0.02	0.00	0.18	82.55
69.00	4.3	5.1	6.7	0.1	1.02	0.01	0.18	0.01	0.00	0.19	82.55
64.00	3.6	4.3	5.7	0.0	0.93	0.01	0.19	0.01	0.00	0.19	82.55
59.00	3.1	3.6	4.7	0.0	0.83	0.01	0.19	0.01	0.00	0.20	82.55
54.00	2.5	3.0	3.9	0.0	0.74	0.01	0.19	0.01	0.00	0.20	82.55
51.75	2.3	2.7	3.6	0.0	0.70	0.01	0.19	0.01	0.00	0.20	82.55
51.75	2.3	2.7	3.6	0.0	0.70	0.01	0.18	0.01	0.00	0.18	82.55
49.00	2.0	2.4	3.2	0.0	0.66	0.01	0.18	0.01	0.00	0.18	82.55
46.08	1.8	2.1	2.8	0.0	0.61	0.01	0.18	0.01	0.00	0.18	82.55
44.00	1.6	1.9	2.5	0.0	0.58	0.01	0.18	0.01	0.00	0.18	82.55
39.00	1.3	1.5	2.0	0.0	0.51	0.01	0.18	0.01	0.00	0.18	82.55
34.00	0.9	1.1	1.5	0.0	0.43	0.01	0.18	0.01	0.00	0.18	82.55
29.00	0.7	0.8	1.1	0.0	0.36	0.01	0.18	0.01	0.00	0.18	82.55
24.00	0.5	0.6	0.7	0.0	0.29	0.01	0.18	0.01	0.00	0.18	82.55

BY VALMONT INDUSTRIES FOR:  
 Design Id: 537228-P1  
 Deflections and Stresses for Pole

VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

DATE 02/15/2022  
 IMPAX 24.5.25.5

Loading Case T+S

\*\*\* Deflections and Stresses \*\*\*

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
19.00	0.3	0.3	0.4	0.0	0.23	0.01	0.18	0.01	0.00	0.18	82.55
14.00	0.2	0.2	0.2	0.0	0.16	0.01	0.17	0.01	0.00	0.18	82.55
9.00	0.1	0.1	0.1	0.0	0.10	0.01	0.17	0.01	0.00	0.18	82.55
4.00	0.0	0.0	0.0	0.0	0.05	0.01	0.17	0.01	0.00	0.18	81.99
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.17	0.01	0.00	0.18	81.49

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case Seismic

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
139.00	0	0	0	0	4	5	6	25
135.00	1	-1	1	0	20	24	32	153
135.00	1	-1	1	0	533	635	829	4623
134.00	9	-7	11	0	536	639	834	4657
129.00	48	-40	62	0	552	658	859	4838
124.00	87	-73	114	0	563	672	877	5037
119.00	128	-107	167	0	573	683	892	5254
119.00	128	-107	167	0	572	681	889	5254
115.00	161	-135	210	0	582	693	905	5623
115.00	161	-135	210	0	671	799	1043	10097
114.00	171	-143	223	0	671	800	1044	10194
109.00	219	-184	286	0	673	802	1047	10695
105.00	257	-216	336	0	672	801	1045	11122
105.00	257	-216	336	0	637	759	991	15850
104.00	266	-224	348	0	634	755	986	15960
99.00	311	-261	407	0	622	742	968	16535
95.00	347	-291	453	0	613	730	953	17021
95.00	347	-291	453	0	510	607	793	21748
94.00	354	-297	462	0	504	601	784	21873
89.00	390	-327	508	0	485	578	754	22521
85.00	417	-350	544	0	472	563	734	23065
85.00	417	-350	544	0	470	560	731	23065
84.00	424	-355	553	0	461	550	718	23363
80.42	447	-375	583	0	438	521	681	24456
79.00	455	-382	595	0	431	514	671	24692
74.00	486	-408	634	0	417	497	649	25551
69.00	516	-433	673	0	412	491	641	26453
64.00	546	-458	712	0	417	497	648	27397
59.00	576	-483	752	0	429	511	667	28384
54.00	607	-510	793	0	448	534	697	29413
51.75	622	-522	812	0	459	547	714	29890
51.75	622	-522	812	0	457	545	711	29890
49.00	640	-537	836	0	485	578	754	31147
46.08	661	-555	863	0	516	615	803	32511
44.00	677	-568	884	0	526	627	819	33034
39.00	716	-601	934	0	554	660	862	34326
34.00	756	-635	987	0	582	693	905	35665
29.00	799	-671	1043	0	610	727	949	37054
24.00	844	-708	1102	0	638	761	993	38491
19.00	891	-747	1163	0	667	795	1037	39976



DATE 02/15/2022  
 IMPAX 24.5.25.5

FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT

BY VALMONT INDUSTRIES  
 Design Id: 537228-PI

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case Seismic								
Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
14.00	939	-788	1226	0	695	828	1081	41510
9.00	990	-831	1293	0	721	859	1122	43093
4.00	1043	-875	1361	0	742	884	1154	44724
0.00	1085	-911	1417	0	751	895	1169	46064

\*\*\* Deflections and Stresses \*\*\*

Loading Case Seismic

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
139.00	2.8	3.3	4.4	0.0	0.39	0.00	0.00	0.00	0.00	0.01	82.55
135.00	2.6	3.1	4.0	0.0	0.39	0.00	0.00	0.00	0.00	0.01	82.55
135.00	2.6	3.1	4.0	0.0	0.39	0.01	0.00	0.01	0.00	0.01	82.55
134.00	2.5	3.0	4.0	0.0	0.39	0.01	0.01	0.01	0.00	0.01	82.55
129.00	2.3	2.7	3.6	0.0	0.37	0.01	0.02	0.01	0.00	0.03	82.55
124.00	2.0	2.4	3.2	0.0	0.34	0.01	0.04	0.01	0.00	0.04	82.55
119.00	1.8	2.2	2.8	0.0	0.31	0.01	0.04	0.01	0.00	0.05	82.54
119.00	1.8	2.2	2.8	0.0	0.31	0.00	0.02	0.00	0.00	0.03	82.55
115.00	1.7	2.0	2.6	0.0	0.29	0.00	0.02	0.00	0.00	0.03	82.55
115.00	1.7	2.0	2.6	0.0	0.29	0.01	0.02	0.00	0.00	0.03	82.55
114.00	1.6	1.9	2.5	0.0	0.28	0.01	0.03	0.00	0.00	0.03	82.55
109.00	1.4	1.7	2.2	0.0	0.26	0.01	0.03	0.00	0.00	0.03	82.55
105.00	1.3	1.6	2.0	0.0	0.24	0.01	0.03	0.00	0.00	0.04	82.55
104.00	1.3	1.5	2.0	0.0	0.24	0.01	0.03	0.00	0.00	0.04	82.55
99.00	1.1	1.3	1.7	0.0	0.22	0.01	0.03	0.00	0.00	0.04	82.55
95.00	1.0	1.2	1.6	0.0	0.20	0.01	0.03	0.00	0.00	0.04	82.55
94.00	1.0	1.2	1.5	0.0	0.20	0.01	0.03	0.00	0.00	0.04	82.55
89.00	0.8	1.0	1.3	0.0	0.18	0.01	0.03	0.00	0.00	0.04	82.55
85.00	0.8	0.9	1.2	0.0	0.16	0.01	0.03	0.00	0.00	0.04	82.55
85.00	0.8	0.9	1.2	0.0	0.16	0.01	0.03	0.00	0.00	0.04	82.55
84.00	0.7	0.9	1.1	0.0	0.16	0.01	0.03	0.00	0.00	0.04	82.55
80.42	0.7	0.8	1.0	0.0	0.15	0.01	0.03	0.00	0.00	0.04	82.55
79.00	0.6	0.8	1.0	0.0	0.14	0.01	0.03	0.00	0.00	0.04	82.55
74.00	0.5	0.6	0.8	0.0	0.13	0.01	0.03	0.00	0.00	0.03	82.55
69.00	0.5	0.5	0.7	0.0	0.11	0.01	0.02	0.00	0.00	0.03	82.55
64.00	0.4	0.5	0.6	0.0	0.10	0.01	0.02	0.00	0.00	0.03	82.55
59.00	0.3	0.4	0.5	0.0	0.09	0.01	0.02	0.00	0.00	0.03	82.55
54.00	0.3	0.3	0.4	0.0	0.08	0.01	0.02	0.00	0.00	0.03	82.55
51.75	0.2	0.3	0.4	0.0	0.08	0.01	0.02	0.00	0.00	0.03	82.55
51.75	0.2	0.3	0.4	0.0	0.08	0.01	0.02	0.00	0.00	0.03	82.55
49.00	0.2	0.3	0.3	0.0	0.07	0.01	0.02	0.00	0.00	0.03	82.55
46.08	0.2	0.2	0.3	0.0	0.07	0.01	0.02	0.00	0.00	0.03	82.55
44.00	0.2	0.2	0.3	0.0	0.06	0.01	0.02	0.00	0.00	0.03	82.55
39.00	0.1	0.2	0.2	0.0	0.05	0.01	0.02	0.00	0.00	0.03	82.55
34.00	0.1	0.1	0.2	0.0	0.05	0.01	0.02	0.00	0.00	0.03	82.55
29.00	0.1	0.1	0.1	0.0	0.04	0.01	0.02	0.00	0.00	0.03	82.55
24.00	0.0	0.1	0.1	0.0	0.03	0.01	0.02	0.00	0.00	0.03	82.55
19.00	0.0	0.0	0.0	0.0	0.02	0.01	0.02	0.00	0.00	0.03	82.55
14.00	0.0	0.0	0.0	0.0	0.02	0.01	0.02	0.00	0.00	0.03	82.55

Loading Case Seismic

\*\*\* Deflections and Stresses \*\*\*

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
9.00	0.0	0.0	0.0	0.0	0.01	0.01	0.02	0.00	0.00	0.03	82.55
4.00	0.0	0.0	0.0	0.0	0.00	0.01	0.02	0.00	0.00	0.03	81.99
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.02	0.00	0.00	0.03	81.49

MINIMUM DEFLECTION RATIO // DEFLECTION LIMIT / DEFLECTION // IS

FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 F L A N G E A N A L Y S I S

BY VALMONT INDUSTRIES  
 Design Id: 537228-PI

FLANGE FOR THE C - D JOINT : CONTROLLING LOAD CASE WIND

Input Data

=====

Applied Reactions

Resultant Moment = 2,096 in-kips  
 Torsion = 0 in-kips  
 Resultant Shear = 11,405 lbs  
 Axial = -3,704 lbs

Bolts

Number of Bolts = 24  
 Bolt Diameter = 0.50 in  
 Bolt Material = A325  
 Bolt Circle = 22.50 in

Flange

Outside Diameter = 25.00 in  
 Thickness = 1.500 in  
 Yield Strength = 50 ksi  
 Tensile Strength = 65 ksi  
 Valmont Material Spec. = S-56  
 Center Hole Diameter = 12.18 in  
 Vent Hole Diameter = 4.00 in  
 Vent hole 1, X Coordinate = 6.28 in  
 Vent hole 1, Y Coordinate = 0.00 in  
 Vent hole 2, X Coordinate = -6.28 in  
 Vent hole 2, Y Coordinate = 0.00 in

Tube

No. of sides = 18  
 Design Diameter = 18.925 in  
 Detailed "C" Sect. Dia = 18.969 in  
 Detailed "D" Sect. Dia = 18.881 in  
 Thickness = 0.3750 in  
 Yield = 65 ksi

Results

=====

Bolts

Maximum Bolt Axial Force = 12,349 lbs  
 Maximum Bolt Shear = 475 lbs  
 Tensile Strength = 120 ksi  
 Axial Capacity = 12,780 lbs  
 Axial Stress = 87 ksi  
 Shear Capacity = 7,952 lbs  
 Shear Stress = 2,420 psi  
 Combined Stress Ratio = 0.94

Flange

Weight = 156 lbs  
 Controlling Stress = Shear  
 Maximum Stress Ratio = 0.24  
 Bending Stress Ratio = 0.22  
 Shear Stress Ratio = 0.49  
 Bearing Stress Ratio = 0.22

\*\*\* BOLT COORDINATES \*\*\*

BOLT NO.	X-COORD	Y-COORD	BOLT NO.	X-COORD	Y-COORD
1	11.25	0.00	2	10.87	2.91
3	9.74	5.63	4	7.96	7.96
5	5.63	9.74	6	2.91	10.87
7	0.00	11.25			

BY VALMONT INDUSTRIES FOR: VERIZON WIRELESS 139.0' POLE, SITE: WOLCOTT, CT  
 Design Id: 537228-P1

DATE 02/15/2022  
 IMPAX 24.5.25.5

NUMBER OF BOLTS	DIAMETER (IN.)	LENGTH (IN.)	WEIGHT (KIPS)	SHIPPED AS	PROJECTION LENGTH (IN.)	GALVANIZED LENGTH (IN.)	THREAD SIZE
16	2.250	66.00	1.64	BOLTS, TEMPLATES	12.00	66.00	4.5-UNC-2A
STEEL SPEC. VALMONT	STEEL SPECIF.	MAXIMUM BOLT FORCE (KIPS)	MAXIMUM BOLT SHEAR FORCE (KIPS)	FACTORED NOMINAL TENS. STRENGTH (KIPS)	STRESS AREA (SQ. IN.)	INTERACTION VALUE	CONFIGURATION OF BOTTOM END
S23	A615	215.53	3.35	260.00	3.25	0.85	THREADED WITH HEAVY HEX HEAD NUT

NOTE: BOLT INTERACTION VALUE WAS CALCULATED BY DIVIDING SHEAR FORCE BY FACTOR RELATED TO DETAIL TYPE d) IN EIA-G SPECS.

\*\*\* BOLT COORDINATES (IN.) \*\*\*

BOLT NO.	X-COORD	Y-COORD	* BOLT NO.	X-COORD	Y-COORD
1	30.250	0.000	2	27.947	11.576
3	21.390	21.390	4	11.576	27.947
5	0.000	30.250			

MAX. BOLT CIRCLE = 60.50 IN.

TEMPLATE DIAMETER = 64.00 IN.

\*\*\* BASE PLATE CHARACTERISTICS GOVERNED BY LOADING CASE WIND \*\*\*

BASE PLATE DIAMETER (IN.)	BASE PLATE THICKNESS (IN.)	ACTUAL WEIGHT (KIPS)	RAW MATERIAL WEIGHT (KIPS)	POLE DIAM. (MAJOR DIAM.) (IN.)
66.50	2.75	2.11	3.50	53.00
EFFECTIVE PLATE WIDTH (IN.)	PLASTIC SECTION MOD. (CU. IN.)	MOMENT IN BASE PLATE (IN. -K)	PLASTIC MOMENT (IN. -K)	FACTORED RESISTING MOM. (IN. -K)
10.41	19.67	808.24	983.74	885.37
STEEL SPECIF. VALMONT	STEEL SPECIF. OTHER	EFFECTIVE YIELD STRESS (KSI)	STRESS RATIO	
S56	A572	50	0.91	

\*\* LOADS AT POLE BASE IN THE GLOBAL COORDINATE SYSTEM \*\*\*\*\* LOADING CASES \*\*\*\*\*

LOADING CASE IDENTIFICATION	WIND ICE + WIND	T+S	Seismic	MAX CRITERION- LOAD CASE
MOMENT ABT. X-AXIS (IN-KIP)	49164	10496	1085	]MOMENT ABT. X WIND
MOMENT ABT. Y-AXIS (IN-KIP)	-41253	-11868	-910	]MOMENT ABT. Y WIND
SHEAR FORCE (LB.)	53529	15067	1166	]RES. MOMENT WIND
VERTICAL FORCE (LB.)	47174	90876	38438	]SHEAR FORCE WIND
				]BOLT FORCE WIND
				]BOLT TENSION WIND



# REPORT

21-1434 S

November 10, 2021

## Explorations and Geotechnical Engineering Services

Proposed Communications Tower  
Chestnut Hill Road  
Wolcott, Connecticut

**Prepared For:**

Nexius  
Attention: Kostandin Butka  
300 Apollo Drive, 2<sup>nd</sup> Floor  
Chelmsford, MA 01824

**Prepared By:**

S. W. Cole Engineering, Inc.  
490 Winthrop Street  
Taunton, MA 02780  
T: (508)-822-6934

[www.swcole.com](http://www.swcole.com) | [info@swcole.com](mailto:info@swcole.com)

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21-1434 S

November 10, 2021

Nexius

Attention: Kostandin Butka  
300 Apollo Drive, 2<sup>nd</sup> Floor  
Chelmsford, MA 01824

Subject: Explorations and Geotechnical Engineering Services  
Proposed Communications Tower  
Chestnut Hill Road  
Wolcott, Connecticut

Dear Kostandin:

In accordance with our Proposal, dated September 23, 2021, we have performed subsurface exploration for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

## **1.0 INTRODUCTION**

### **1.1 Scope and Purpose**

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations and earthwork associated with the proposed construction. Our scope of services included three test boring explorations, a geotechnical analysis of the subsurface findings, and preparation of this report.

### **1.2 Site and Proposed Construction**

The site is located to the south of the intersection of Lyman Road, Grilley Road and Chestnut Hill Road in Wolcott, Connecticut. We understand the site consists of undeveloped wooded area, with some exposed bedrock outcrops. Existing grades at the project site rise steeply from Chestnut Hill Road to the tower site to the south.



Existing grades range from 710 feet near Chestnut Hill Road to 788 feet near the proposed communications tower location.

We understand a new 120-foot-tall monopole communications tower is proposed at the site. We anticipate the proposed tower base elevation will be near existing grade, and fills and cuts will likely be on the order of 5 feet. We understand the proposed tower center is to be located at 41.590008° N, -73.008617° W.

## **2.0 EXPLORATION AND TESTING**

### **2.1 Explorations**

Three test boring (B-1 through B-3) were made at the site on October 27, 2021 by Soil Testing, INC. The exploration locations were selected in the field by S.W.COLE considering access and site utility constraints. The locations were established in the field by S.W.COLE using a GPS device. The approximate exploration location is shown on the “Exploration Location Plan” included in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are included in Appendix C. The elevations shown on the logs were estimated based on topographic information available on the project plans.

### **2.2 Testing**

The test boring were drilled using 4-1/4 inch hollow-stem augers and 3 inch cased rotary-wash drilling techniques. The soils were sampled at 2 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. SPT blow counts are shown on the logs. Upon encountering a refusal surface at boring B-1, the boring was advanced approximately 9 feet into bedrock using a 2-inch inner diameter diamond bit rock core barrel.

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. The results of one grain size analysis are attached in Appendix D.

### **3.0 SUBSURFACE CONDITIONS**

#### **3.1 Soils and Bedrock**

Boring B-1 was made near the proposed tower center and borings B-2 and B-3 were made along the proposed access road. Forest mat and topsoil was encountered at the ground surface of test borings B-1 and B-2, which was underlain by layer of subsoil which extended to 2.7 and 4.5 feet below grade respectively. Bedrock was encountered below the subsoil layer at both borings. The bedrock core at B-1 was observed to consist of hard, slightly weathered, highly fractured Quartz Gneiss with an RQD ranging from 32%-40%. Boring B-1 was terminated in bedrock at a depth of 12 feet while B-2 was terminated in probable bedrock at 5.8 feet. Boring B-3 consisted of a 6-inch layer of topsoil overlying a subsoil layer extending 2 feet below grade. Beneath the subsoil was a layer of silty, gravelly, sand down to 6 feet at which point weathered bedrock was encountered. B-3 was terminated on probable bedrock at 8.1 feet.

#### **3.2 Groundwater**

The site soils were generally moist however, groundwater was not encountered at any of the boring locations. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

### **4.0 EVALUATION AND RECOMMENDATIONS**

#### **4.1 General Findings**

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principal geotechnical considerations include:

- The proposed tower may be supported on a spread footing or mat foundation bearing on 6-inches of compacted Crushed Stone, overlying in-tact bedrock. We recommend that all soil be removed below the foundation mat and be replaced with compacted crushed stone.
- Existing organics, topsoil, roots, subsoil and deleterious material must be removed from beneath the proposed tower foundation.

- Cuts into bedrock and fills on the order 2 to 5 feet may be required to achieve level subgrade for foundation construction. Imported Structural Fill and Crushed Stone will be required for construction of the tower and gravel access road.

#### **4.2 Site and Subgrade Preparation**

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Existing organics, topsoil, roots, subsoil and all soil must be removed from beneath the proposed tower foundation exposing bedrock. We recommend 6-inches of compacted Crushed Stone be provided below the tower foundation. The Crushed Stone will increase the base friction value for lateral sliding as well as help to provide a stable working mat and casting bed for foundations.

Existing organics, topsoil, roots, subsoil and deleterious material must be removed from beneath access road until undisturbed native soils are encountered. Subgrade soils which become disturbed or difficult to work should be overexcavated and replaced with compacted Structural Fill.

#### **4.3 Excavation and Dewatering**

Excavation work will generally encounter surficial forest mat, topsoil and subsoil overlying silty sand and bedrock. Bedrock outcrops were observed throughout the project site. Excavation of bedrock to create a level bearing surface should be accomplished with hydraulic hoe ram or drilling and blasting. Blasting should be done in a manner to limit overblast to 12 inches below the subgrade and all loose overblast bedrock should be removed and replaced with compacted crushed stone. Care must be exercised during construction to limit disturbance of the soil subgrade along roadways. Earthwork and grading activities should ideally occur during drier, non-freezing weather of Spring, Summer and Fall. Limited removal of bedrock should be anticipated within the footprint of the tower foundation in order to achieve footing subgrade depth.

Groundwater was not encountered within the explorations and it is not anticipated that dewatering will be require for construction. Excavations must be properly shored or sloped

in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

#### **4.4 Foundations**

The proposed communications tower may be supported on a spread footing foundation bearing on at least 6-inches of compacted Crushed Stone, overlying compacted bedrock. For foundations bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design consideration:

<b>Geotechnical Parameters for Spread Footings and Foundation Walls</b>	
Design Frost Depth	4.0 feet
Net Allowable Soil Bearing Pressure	5.0 ksf
Base Friction Factor	0.4
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	30°
Seismic Site Class (IBC 2015 / ASCE 7-16)	C

#### **4.5 Backfill and Compaction**

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Structural Fill: Backfill against footings should be non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

<b>Structural Fill</b>	
<b>Sieve Size</b>	<b>Percent Finer by Weight</b>
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
#40	0 to 30
#200	0 to 6

Crushed Stone: Crushed Stone, used beneath foundations and for underdrain aggregate should be washed ¾-inch crushed stone meeting the requirements of ConnDOT Standard Specification Form 816 M.01.01 No. 67 Aggregate.

Reuse of Site Soils: The on-site soils are unsuitable for reuse as foundation backfill but may be suitable for reuse as Common Borrow to raise grades in landscape areas provided they are free of deleterious material and are at a suitable moisture content to achieve proper compaction.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with at least 3 passes of a 600 pound vibratory plate compactor.

#### **4.6 Weather Considerations**

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades and foundations must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

#### **4.7 Design Review and Construction Testing**

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork and foundation recommendations have been properly interpreted and implemented.

A construction materials testing and quality assurance program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities and the preparation of foundation bearing surfaces, as well as to provide testing and IBC Special Inspection services for soil and concrete construction materials.

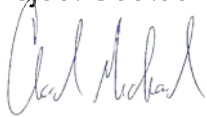
## 5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

**S. W. Cole Engineering, Inc.**

Ryan Larmouth  
Project Geotechnical Engineer

A handwritten signature in black ink, appearing to read 'Chad B. Michaud', written in a cursive style.

Chad B. Michaud, P.E.  
Principal Geotechnical Engineer



RSL:cbm

## **APPENDIX A**

### **Limitations**

This report has been prepared for the exclusive use of the Nexius for specific application to the Proposed Communications Tower at Chestnut Hill Road in Wolcott, Connecticut. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

## **APPENDIX B**

### **Figures**



## **APPENDIX C**

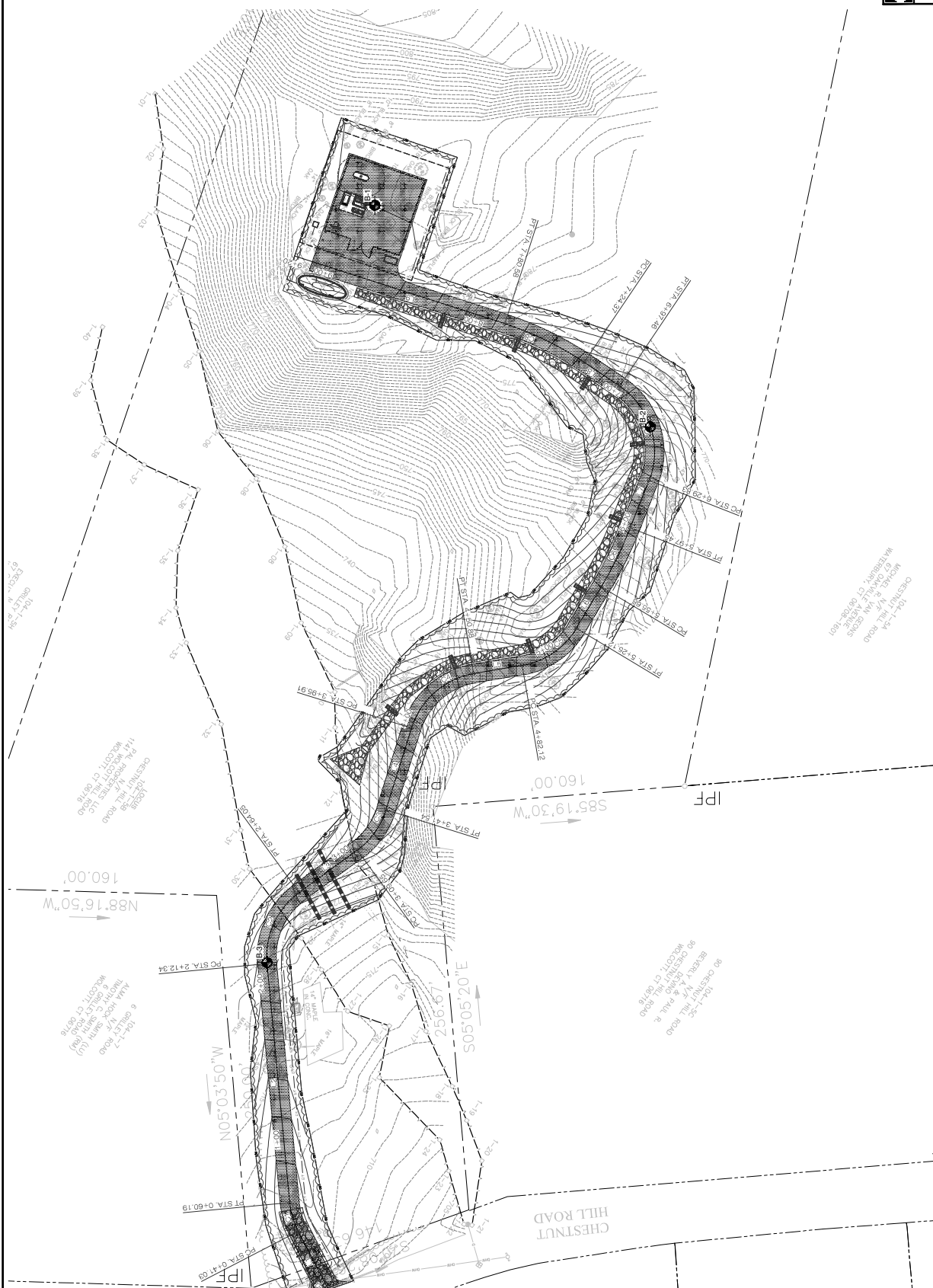
### **Exploration Logs and Key**

## **APPENDIX D**

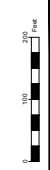
### **Laboratory Testing**

## **APPENDIX B**

### **Figures**



- LEGEND:**
- APPROXIMATE BORING LOCATION
- NOTES:**
1. THIS EXPLORATION PLAN WAS PREPARED FROM A CAD FILE OF THE SITE ENTITLED "WOLCOTT SOUTH MASTER FOR SURVEY/DWG" PREPARED BY SURVEYORS WOLCOTT & COMPANY, RECEIVED VIA E-MAIL 10/20/2021.
  2. THE BORINGS WERE LOCATED IN THE FIELD BY GPS SURVEYS BY S.W. COLE ENGINEERING, INC. USING A MAPPING GRADE GPS RECEIVER.
  3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE GEOTECHNICAL REPORT.
  4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE PROPOSED CELL TOWER AND ACCESS ROAD. THIS PLAN AND IS NOT TO BE USED FOR CONSTRUCTION.



**S.W. COLE**  
ENGINEERS, INC.

NEWBURY  
**EXPLORATION LOCATION PLAN**  
PROPOSED CELL TOWER  
CHESTNUT HILL ROAD  
WOLCOTT, CONNECTICUT

JOB No.: 211438    Scale: 1" = 30'  
Date: 11/08/2021    Sheet: 1

## **APPENDIX C**

### **Exploration Logs and Key**

## **KEY TO NOTES & SYMBOLS**

### **Test Boring and Test Pit Explorations**

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

#### **Key to Symbols Used:**

w	-	water content, percent (dry weight basis)
q <sub>u</sub>	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S <sub>v</sub>	-	field vane shear strength, kips/sq. ft.
L <sub>v</sub>	-	lab vane shear strength, kips/sq. ft.
q <sub>p</sub>	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W <sub>L</sub>	-	liquid limit - Atterberg test
W <sub>P</sub>	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
τ	-	total soil weight
B	-	buoyant soil weight

#### **Description of Proportions:**

Trace:	0 to 5%
Some:	5 to 12%
“Y”	12 to 35%
And	35+%
With	Undifferentiated

#### **Description of Stratified Soils**

Parting:	0 to 1/16” thickness
Seam:	1/16” to 1/2” thickness
Layer:	½” to 12” thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

**REFUSAL: Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

**REFUSAL: Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.



# BORING LOG

**BORING NO.:** B-1  
**SHEET:** 1 of 1  
**PROJECT NO.:** 21-1434  
**DATE START:** 10/27/2021  
**DATE FINISH:** 10/27/2021

**CLIENT:** Nexius  
**PROJECT:** Proposed Cell Tower  
**LOCATION:** Chestnut Hill Road, Wolcott, Connecticut

## Drilling Information

**LOCATION:** See Exploration Location Plan    **ELEVATION (FT):** 800' Estimated    **TOTAL DEPTH (FT):** 12.0    **LOGGED BY:** M. Socci  
**DRILLING CO.:** Soil Testing, INC.    **DRILLER:** S. DeAngelis    **DRILLING METHOD:** Cased Boring  
**RIG TYPE:** Track Mounted Diedrich D-50    **AUGER ID/OD:** N/A / N/A    **SAMPLER:** Standard Split-Spoon  
**HAMMER TYPE:** Safety    **HAMMER WEIGHT (lbs):** 140 / 300    **CASING ID/OD:** 3 in / 3 1/2 in    **CORE BARREL:** NX  
**HAMMER EFFICIENCY FACTOR:** \_\_\_\_\_    **HAMMER DROP (inch):** 30 / 16  
**WATER LEVEL DEPTHS (ft):** Not Encountered

## GENERAL NOTES:

**KEY TO NOTES AND SYMBOLS:** Water Level  
▽ At time of Drilling    D = Split Spoon Sample    Pen. = Penetration Length    WOR = Weight of Rods    S<sub>v</sub> = Field Vane Shear Strength, kips/sq.ft.  
▽ At Completion of Drilling    U = Thin Walled Tube Sample    Rec. = Recovery Length    WOH = Weight of Hammer    q<sub>u</sub> = Unconfined Compressive Strength, kips/sq.ft.  
▽ After Drilling    R = Rock Core Sample    bpf = Blows per Foot    RQD = Rock Quality Designation    Ø = Friction Angle (Estimated)  
V = Field Vane Shear    mpf = Minute per Foot    PID = Photoionization Detector    N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H <sub>2</sub> O Depth	Remarks	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD					Field / Lab Test Data
			D1	⊗	0-2	24/10	1-1-1-1		0.5	6" TOPSOIL		
			D2	⊗	2-2.5	6/4	100			Very soft, moist, brown, SILT and SAND (SUBSOIL)		
			C1	▬	3-8	60/60			2.7	Gray to white, hard, slightly weathered, highly fractured, QUARTZ GNEISS, poor RQD		
795	5											
790	10		C2	▬	8-12	48/44						

Bottom of Exploration at 12.0 feet

BORING / WELL 21-1434.GPJ SWCE TEMPLATE.GDT 11/8/21

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

**BORING NO.:** **B-1**



# BORING LOG

**BORING NO.:** B-2  
**SHEET:** 1 of 1  
**PROJECT NO.:** 21-1434  
**DATE START:** 10/27/2021  
**DATE FINISH:** 10/27/2021

**CLIENT:** Nexius  
**PROJECT:** Proposed Cell Tower  
**LOCATION:** Chestnut Hill Road, Wolcott, Connecticut

## Drilling Information

**LOCATION:** See Exploration Location Plan    **ELEVATION (FT):** 785' Estimated    **TOTAL DEPTH (FT):** 5.8    **LOGGED BY:** M. Soggi  
**DRILLING CO.:** Soil Testing, INC.    **DRILLER:** S. DeAngelis    **DRILLING METHOD:** Hollow Stem Augers  
**RIG TYPE:** Track Mounted Diedrich D-50    **AUGER ID/OD:** 4 1/4 in / 7 5/8 in    **SAMPLER:** Standard Split-Spoon  
**HAMMER TYPE:** Safety    **HAMMER WEIGHT (lbs):** 140 / 300    **CASING ID/OD:** N/A / N/A    **CORE BARREL:** N/A  
**HAMMER EFFICIENCY FACTOR:** \_\_\_\_\_    **HAMMER DROP (inch):** 30 / 16  
**WATER LEVEL DEPTHS (ft):** Not Encountered

### GENERAL NOTES:

**KEY TO NOTES AND SYMBOLS:** Water Level  
 ▽ At time of Drilling    D = Split Spoon Sample    Pen. = Penetration Length    WOR = Weight of Rods    S<sub>v</sub> = Field Vane Shear Strength, kips/sq.ft.  
 ▽ At Completion of Drilling    U = Thin Walled Tube Sample    Rec. = Recovery Length    WOH = Weight of Hammer    q<sub>u</sub> = Unconfined Compressive Strength, kips/sq.ft.  
 ▽ After Drilling    R = Rock Core Sample    bpf = Blows per Foot    RQD = Rock Quality Designation    Ø = Friction Angle (Estimated)  
 V = Field Vane Shear    mpf = Minute per Foot    PID = Photoionization Detector    N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H <sub>2</sub> O Depth	Remarks
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD				
780	5		D1	0-2	24/1	4-1-2-2		0-1.0	6" TOPSOIL		
			D2	2-4	24/1	5-7-9-8		1.0-4.5	Loose to medium dense, moist, brown, SILT and SAND (SUBSOIL)		
			D3	4-5.8	21/20	3-46-59-75/3"		4.5-5.5	Very dense, moist, brown to gray, silty, sandy, GRAVEL (WEATHERED BEDROCK)		
								Very dense, moist, brown to gray, silty, sandy, GRAVEL (BEDROCK)		Split Spoon Refusal at 5.8 feet	

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

**BORING NO.:** B-2

BORING / WELL 21-1434.GPJ SWCE TEMPLATE.GDT 11/8/21





# BORING LOG

**BORING NO.:** B-3  
**SHEET:** 1 of 1  
**PROJECT NO.:** 21-1434  
**DATE START:** 10/27/2021  
**DATE FINISH:** 10/27/2021

**CLIENT:** Nexus  
**PROJECT:** Proposed Cell Tower  
**LOCATION:** Chestnut Hill Road, Wolcott, Connecticut

## Drilling Information

**LOCATION:** See Exploration Location Plan    **ELEVATION (FT):** 725' Estimated    **TOTAL DEPTH (FT):** 8.1    **LOGGED BY:** M. Socci  
**DRILLING CO.:** Soil Testing, INC.    **DRILLER:** S. DeAngelis    **DRILLING METHOD:** Hollow Stem Augers  
**RIG TYPE:** Track Mounted Diedrich D-50    **AUGER ID/OD:** 4 1/4 in / 7 5/8 in    **SAMPLER:** Standard Split-Spoon  
**HAMMER TYPE:** Safety    **HAMMER WEIGHT (lbs):** 140 / 300    **CASING ID/OD:** N/A / N/A    **CORE BARREL:** N/A  
**HAMMER EFFICIENCY FACTOR:** \_\_\_\_\_    **HAMMER DROP (inch):** 30 / 16  
**WATER LEVEL DEPTHS (ft):** Not Encountered

## GENERAL NOTES:

**KEY TO NOTES AND SYMBOLS:** Water Level  
 ▽ At time of Drilling    D = Split Spoon Sample    Pen. = Penetration Length    WOR = Weight of Rods    S<sub>v</sub> = Field Vane Shear Strength, kips/sq.ft.  
 ▽ At Completion of Drilling    U = Thin Walled Tube Sample    Rec. = Recovery Length    WOH = Weight of Hammer    q<sub>u</sub> = Unconfined Compressive Strength, kips/sq.ft.  
 ▽ After Drilling    R = Rock Core Sample    bpf = Blows per Foot    RQD = Rock Quality Designation    Ø = Friction Angle (Estimated)  
 V = Field Vane Shear    mpf = Minute per Foot    PID = Photoionization Detector    N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION					Graphic Log	Sample Description & Classification	H <sub>2</sub> O Depth	Remarks	
			Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD					Field / Lab Test Data
			D1		0-2	24/9	1-1-1-4		0.5	6" TOPSOIL Very loose, moist, brown, SILT and SAND, (SUBSOIL)		
			D2		2-4	24/15	5-11-17-20		2.0	Medium to very dense, moist, brown, silty, F-C SAND, some gravel (SM)		
720	5		D3		4-6	24/19	22-45-52-47					
			D4		6-8	24/16	36-45-36-30		6.0	Very dense, moist, brown, silty, sandy, GRAVEL (WEATHERED BEDROCK)		
			D5		8-8.1	1/1	50/1"		8.0	Very dense, moist, gray, GRAVEL (BEDROCK) Split Spoon Refusal at 8.1 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

**BORING NO.:** **B-3**

BORING / WELL 21-1434.GPJ SWCE TEMPLATE.GDT 11/8/21

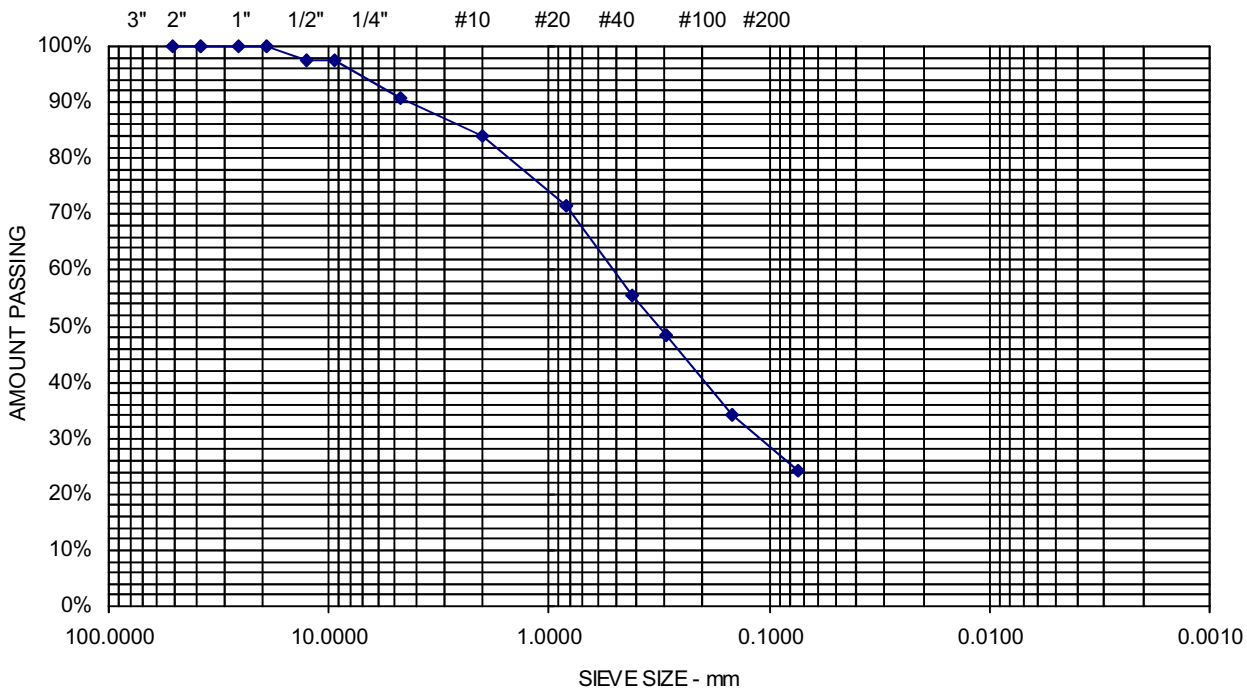
## **APPENDIX D**

### **Laboratory Testing**

Project Name **WOLCOTT CT - PROPOSED COMMUNICATIONS TOWER AND ACCESS ROAD - GEOTECHNICAL ENGINEERING SERVICES**  
 Client **NEXIUS**  
 Exploration **B3 D2 2-4'**  
 Material Source **B3 D2 2-4'**

Project Number **21-1434**  
 Lab ID **4391T**  
 Date Received **11/1/2021**  
 Date Completed **11/2/2021**  
 Tested By **SHRIYA SIVAKUMAR**

<u>STANDARD DESIGNATION (mm/μm)</u>	<u>SIEVE SIZE</u>	<u>AMOUNT PASSING (%)</u>	
50 mm	2"	100	
38.1 mm	1-1/2"	100	
25.0 mm	1"	100	
19.0 mm	3/4"	100	
12.5 mm	1/2"	98	
9.5 mm	3/8"	98	
4.75 mm	No. 4	91	9.1% Gravel
2.00 mm	No. 10	84	
850 μm	No. 20	72	
425 μm	No. 40	55	66.7% Sand
300 μm	No. 50	48	
150 μm	No. 100	34	
75 μm	No. 200	24.2	24.2% Fines



Comments: Moisture = 16.5%