STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

September 21, 2023

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
kbaldwin@rc.com

RE: **TS-VER-011-230505 -** Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 7A Old Windsor Road, Bloomfield, Connecticut. **Request for Project Change.**

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) is in receipt of the correspondence dated September 20, 2023 regarding a project change for the above-referenced tower share request approved by the Council on August 17, 2023.

Pursuant to Condition No. 1 of the Council's August 17, 2023 tower share approval, the request to install three model MT6413-77A antennas, three model RF4461d-13A RRH's and three model RT4423-48A RRH's due to the unavailability of the originally approved antenna and RRH models, is hereby approved.

This approval applies only to the project change referenced in the correspondence dated September 20, 2023.

Please be advised that deviations from the standards established by the Council in the tower share approval are enforceable under the provisions of Connecticut General Statutes §16-50u.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/ANM/lm

c: The Honorable Danielle Wong, Mayor, Town of Bloomfield (dwong@bloomfieldct.org)
Philip Schenck, Acting Town Manager, Town of Bloomfield (pschenck@bloomfieldct.org)

Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts and New York

September 20, 2023

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

Re: **TS-VER-011-230505 – Cellco Partnership d/b/a Verizon Wireless – 7A Old Windsor Road, Bloomfield, Connecticut**

Request for Staff Approval of Minor Changes for Equipment Modifications

Dear Attorney Bachman:

On May 25, 2023, the Siting Council approved the above referenced tower share filing permitting Cellco Partnership d/b/a Verizon Wireless to share an existing telecommunications facility located at 7A Old Windsor Road in Bloomfield. Since receiving that approval, Cellco has decided to change certain antenna and remote radio head ("RRH") models and seeks staff approval for these changes.

In lieu of three (3) model MT6407-77A antennas, Cellco will install three (3) model MT6413-77A antennas. Likewise, in lieu three (3) model RF4440d-13A RRHs and three (3) model RF4401-48A RRHs, Cellco will install three (3) RF4461d-13A RRHs and three (3) RT4423-48A RRHs. All new equipment will be installed on Cellco's antenna mounting system.

Enclosed is a revised Structural Analysis Report, a revised Structural Analysis & Design Report (Mount Analysis), an updated set of project plans, and specifications for the new antennas and RRHs Cellco intends to install. Cellco respectfully requests staff approval of these minor equipment modifications.

Please contact me if you have any questions regarding this proposal.

Sincerely,

Kenneth C. Baldwin

Attachments
Copy: Tim Parks

27869424-v1

Chappell Engineering Associates, LLC

verizon

Tower Structural Analysis

Verizon New Site Build

Structural Analysis Report

Site Name: Bloomfield 5 CT

Address:

7A Old Windsor Road

Bloomfield, CT 06002

September 12, 2023 (Revision 3)

201 Boston Post Road West, Suite 101
Marlborough, Massachusetts 01752

CHAPPELL
ENGINEERING
ASSOCIATES, LLC
Civil • Structural • Land Surveying

September 12, 2023

verizon
20 Alexander Drive, 2nd Floor
Wallingford, CT 06492

Reference:	**Tower Structural Analysis**
Tower Data:	149ft Valmont Monopole
Build Date:	2021
Tower Address:	7A Old Windsor Road, Bloomfield, CT 06002

Dear Sirs:

Chappell Engineering Associates, LLC has performed a structural analysis of the above-referenced tower to evaluate the effect of the proposed **Verizon New Site Build** on the subject structure.

This analysis has been performed in accordance with the 2022 Connecticut State Building Code (2021 International Building Code) with Connecticut Amendments based upon a wind speed of 135mph. A structure class II (Structures that due to height, use or location represent a substantial hazard to human life and/or damage to property in the event of failure and/or used for services that may be provided by other means) has been assigned to the structure. The tower has been modeled as being located in an exposure B category.

The proposed Verizon antenna configuration is detailed on the Lease Exhibit Drawings and are included in this structural report.

Based on the results of the analysis, it has been determined that the structure is:

Structurally Acceptable – Tower Rating: 42.9% (Baseplate)

The antenna tower is structurally able to withstand the proposed cellular equipment installation as detailed in the lease exhibit drawings provided.

If you have any questions, please do not hesitate to call.

Very truly yours,
CHAPPELL ENGINEERING ASSOCIATES, LLC

STATE OF CONNECTICUT
CLEMENT J. SALEK
No. 26876
LICENSED
PROFESSIONAL ENGINEER

Clement J. Salek, P.E.

TABLE OF CONTENTS

Appendices:

Introduction

The subject tower has been modeled using tnxTower software developed by Tower Numerics, Inc. tnxTower is a general-purpose modeling, analysis, and design program created specifically for the analysis and design of communication towers using the TIA-222-H Standard, as well as any of the previous TIA/EIA Standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD Specifications.

This particular tower analysis has been performed by Chappell Engineering Associates, LLC to determine the structural capacity of the tower under the current ***TIA-222-H*** Standard given the proposed antenna loading detailed in this report.

Tower Information

	SOURCE	INFORMATION
Structure	Valmont	Valmont Structures dated 06-08-2021 Engineering File Number 468082
Foundation	Valmont	Valmont Structures dated 06-08-2021 Engineering File Number 468082
Current Inventory	Chappell Engineering Associates	Site Visit 01-23-2023
Proposed Condition	Verizon	Proposed Antenna Configuration Sheets

Analysis Criteria

Table 1: Antenna Loads

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
12' Dipole Antenna	C	None		0.0000	156.00	No Ice	2.25	2.25	0.04
						1/2" Ice	3.94	3.94	0.06
						1" Ice	5.63	5.63	0.08
						2" Ice	9.01	9.01	0.12
Lightning Rod	C	None		0.0000	153.00	No Ice	0.38	0.38	0.01
						1/2" Ice	0.99	0.99	0.01
						1" Ice	1.60	1.60	0.01
						2" Ice	2.82	2.82	0.01
PiROD 15' Platform with handrail	C	None		0.0000	147.50	No Ice	33.80	33.80	2.04
						1/2" Ice	43.60	43.60	2.75
						1" Ice	53.40	53.40	3.45
						2" Ice	73.00	73.00	4.86
Universal Ring Mount	C	None		0.0000	143.50	No Ice	2.50	2.50	0.42
						1/2" Ice	3.00	3.00	0.60
						1" Ice	3.50	3.50	0.78
						2" Ice	4.50	4.50	1.14
PiROD 15' Platform with handrail	C	None		0.0000	137.00	No Ice	33.80	33.80	2.04
						1/2" Ice	43.60	43.60	2.75
						1" Ice	53.40	53.40	3.45
						2" Ice	73.00	73.00	4.86

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Universal Ring Mount	C	None		0.0000	133.00	No Ice	2.50	2.50	0.42
						1/2" Ice	3.00	3.00	0.60
						1" Ice	3.50	3.50	0.78
						2" Ice	4.50	4.50	1.14
Commscope NHH-65B-R2B	A	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.44	0.05
						1/2" Ice	8.53	5.94	0.10
						1" Ice	9.00	6.47	0.16
						2" Ice	9.95	7.57	0.30
Commscope NHHSS-65B-R2B-R2BT4	A	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.34	0.05
						1/2" Ice	8.53	5.79	0.10
						1" Ice	9.00	6.26	0.16
						2" Ice	9.95	7.20	0.29
Samsung MT6413-77A	A	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	3.81	1.46	0.06
						1/2" Ice	4.06	1.65	0.08
						1" Ice	4.32	1.84	0.11
						2" Ice	4.86	2.26	0.18
Commscope NHH-65B-R2B	B	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.44	0.05
						1/2" Ice	8.53	5.94	0.10
						1" Ice	9.00	6.47	0.16
						2" Ice	9.95	7.57	0.30
Commscope NHHSS-65B-R2B-R2BT4	B	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.34	0.05
						1/2" Ice	8.53	5.79	0.10
						1" Ice	9.00	6.26	0.16
						2" Ice	9.95	7.20	0.29
Samsung MT6413-77A	B	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	3.81	1.46	0.06
						1/2" Ice	4.06	1.65	0.08
						1" Ice	4.32	1.84	0.11
						2" Ice	4.86	2.26	0.18
Commscope NHH-65B-R2B	C	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.44	0.05
						1/2" Ice	8.53	5.94	0.10
						1" Ice	9.00	6.47	0.16
						2" Ice	9.95	7.57	0.30
Commscope NHHSS-65B-R2B-R2BT4	C	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.34	0.05
						1/2" Ice	8.53	5.79	0.10
						1" Ice	9.00	6.26	0.16
						2" Ice	9.95	7.20	0.29
Samsung MT6413-77A	C	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	3.81	1.46	0.06
						1/2" Ice	4.06	1.65	0.08
						1" Ice	4.32	1.84	0.11
						2" Ice	4.86	2.26	0.18
(3) Samsung RF4461d-13A	C	None		0.0000	137.00	No Ice	1.88	1.27	0.08
						1/2" Ice	2.05	1.42	0.10
						1" Ice	2.22	1.57	0.12
						2" Ice	2.60	1.89	0.17
(3) Samsung RF4439d-25A B25/B66A	C	None		0.0000	137.00	No Ice	1.88	1.25	0.08
						1/2" Ice	2.05	1.39	0.09
						1" Ice	2.22	1.54	0.11
						2" Ice	2.60	1.86	0.17
(3) Samsung RT4423-48A	C	None		0.0000	137.00	No Ice	0.86	0.42	0.02
						1/2" Ice	0.97	0.51	0.03
						1" Ice	1.10	0.61	0.04
						2" Ice	1.37	0.83	0.06
Rayco Fiber Junction Box	C	None		0.0000	137.00	No Ice	2.51	1.97	0.03
						1/2" Ice	2.71	2.15	0.05
						1" Ice	2.91	2.33	0.08
						2" Ice	3.35	2.73	0.15

Table 2: Dish Antenna Loads

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
2.5' Dish w/Radome	A	Paraboloid w/Radome	From Face	4.00 4.00 0.00	Worst		148.00	2.50	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.24 5.57 6.24	0.05 0.08 0.10 0.16
2.5' Dish w/Radome	C	Paraboloid w/Radome	From Face	4.00 6.00 0.00	Worst		148.00	2.50	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.24 5.57 6.24	0.05 0.08 0.10 0.16

Analysis Results

Section No.	Elevation ft	Component Type	Size	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	149 - 103	Pole	TP42.34x27.5x0.25	-11.72	1871.44	21.6	Pass
L2	103 - 78.9	Pole	TP49.4x40.0657x0.313	-16.67	2733.69	23.8	Pass
L3	78.9 - 39.32	Pole	TP63.1x46.7242x0.375	-28.05	4169.56	25.6	Pass
L4	39.32 - 0	Pole	TP73x59.507x0.438	-48.55	5901.28	28.1	Pass

The following table summarizes the **foundation capacity** analysis:

LOAD	ORIGINAL DESIGN FOUNDATION LOADS	PROPOSED FOUNDATION LOADS	FACTOR OF SAFETY	PASS/FAIL
Overturning (ft-k)	5,699.8 ft-k	2,512 ft-k	2.3	Pass
Shear (k)	52.9 k	28.0 k	1.8	Pass

Conclusions and Recommendations

Under the proposed loading considered in the analysis, the existing structure is rated at **42.9% (Baseplate).** As such, it conforms to the loading criteria set forth in the **IBC/TIA-222 Rev H**.

Limitations

Any future modifications made to the structure or to the listed appurtenances for which Chappell Engineering was not made aware of shall invalidate this report. Modifications made to the structure which have occurred after the date of this analysis shall invalidate this report. Modifications include (but are not limited to):

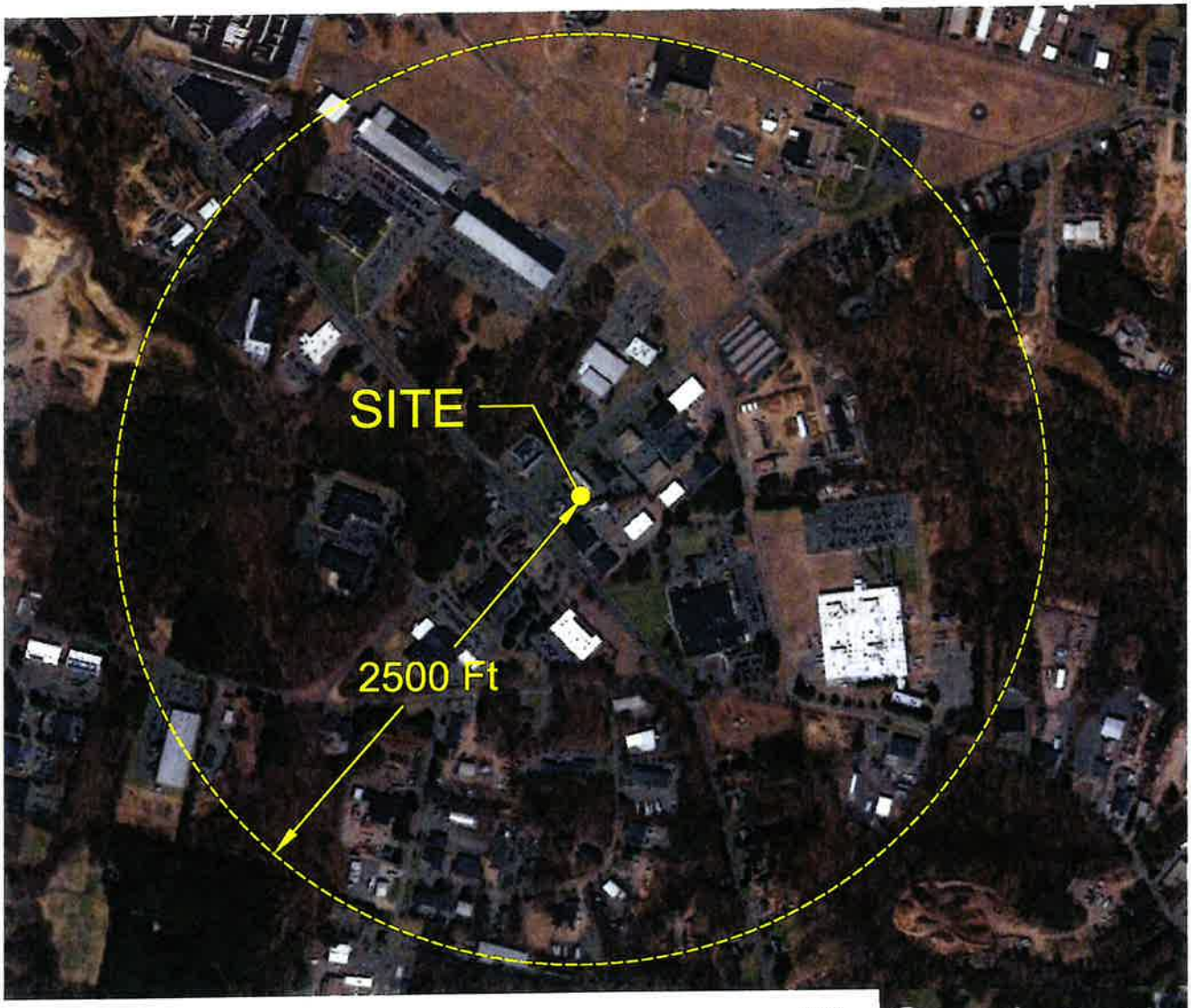
1. The addition of or reconfiguration of antennas or other appurtenances
2. The addition of or reconfiguration of coax cables or other feed lines
3. Modifications to the structure
4. Local damage or structural deficiencies not specifically identified in this report

Appendix A – Site Location Map

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying

201 BOSTON POST ROAD WEST
MARLBOROUGH, MA 01752
P. (508) 481-7400
F. (508) 481-7406
www.chappellengineering.com

TITLE: 7A Old Windsor Rd, Bloomfield, CT 06002			PAGE:
PROJECT #: Bloomfield 5 CT New Site Build (96210.413)			
DATE: March 14, 2023	BY: CJS	CHK: JMF	



EXPOSURE CATEGORY MAP
SCALE: NTS

3
SDC

2.6.5 EXPOSURE CATEGORIES

2.6.5.1 GENERAL

AN EXPOSURE CATEGORY THAT ADEQUATELY REFLECTS THE CHARACTERISTICS OF GROUND SURFACE IRREGULARITIES AT THE SITE SHALL BE DETERMINED. ACCOUNT SHALL BE TAKEN OF VARIATIONS IN GROUND SURFACE ROUGHNESS THAT ARISE FROM NATURAL TOPOGRAPHY AND VEGETATION AS WELL AS FROM CONSTRUCTED FEATURES. THE EXPOSURE CATEGORY FOR A STRUCTURE SHALL BE ASSESSED AS BEING ONE OF THE FOLLOWING:

1. **EXPOSURE B:** URBAN AND SUBURBAN AREAS, WOODED AREAS, OR OTHER TERRAIN WITH NUMEROUS CLOSELY SPACED OBSTRUCTIONS HAVING THE SIZE OF SINGLE-FAMILY DWELLINGS OR LARGER. USE OF THIS EXPOSURE SHALL BE LIMITED TO THOSE AREAS FOR WHICH TERRAIN REPRESENTATIVE OF EXPOSURE B SURROUNDS THE STRUCTURE IN ALL DIRECTIONS FOR A DISTANCE OF AT LEAST 2,630 FT [800 M] OR TEN TIMES THE HEIGHT OF THE STRUCTURE, WHICHEVER IS GREATER.
2. **EXPOSURE C:** OPEN TERRAIN WITH SCATTERED OBSTRUCTIONS HAVING HEIGHTS GENERALLY LESS THAN 30 FT [9.1 M]. THIS CATEGORY INCLUDES FLAT, OPEN COUNTRY, GRASSLANDS AND SHORELINES IN HURRICANE PRONE REGIONS.
3. **EXPOSURE D:** FLAT, UNOBSTRUCTED SHORELINES EXPOSED TO WIND FLOWING OVER OPEN WATER (EXCLUDING SHORELINES IN HURRICANE PRONE REGIONS) FOR A DISTANCE OF AT LEAST 1 MILE [1.61 KM]. SHORELINES IN EXPOSURE D INCLUDE INLAND WATERWAYS, LAKES AND NON-HURRICANE COASTAL AREAS. EXPOSURE D EXTENDS INLAND A DISTANCE OF 660 FT [200 M] OR TEN TIMES THE HEIGHT OF THE STRUCTURE, WHICHEVER IS GREATER. SMOOTH MUD FLATS, SALT FLATS AND OTHER SIMILAR TERRAIN SHALL BE CONSIDERED AS EXPOSURE D.

2.6.6.2 TOPOGRAPHIC CATEGORIES

THE TOPOGRAPHIC CATEGORY FOR A STRUCTURE SHALL BE ASSESSED AS BEING ONE OF THE FOLLOWING:

CATEGORY 1: NO ABRUPT CHANGES IN GENERAL TOPOGRAPHY, E.G. FLAT OR ROLLING TERRAIN,NO WIND SPEED-UP CONSIDERATION SHALL BE REQUIRED.

CATEGORY 2: STRUCTURES LOCATED AT OR NEAR THE CREST OF AN ESCARPMENT. WIND SPEED-UP SHALL BE CONSIDERED TO OCCUR IN ALL DIRECTIONS. STRUCTURES LOCATED VERTICALLY ON THE LOWER HALF OF AN ESCARPMENT OR HORIZONTALLY BEYOND 8 TIMES THE HEIGHT OF THE ESCARPMENT FROM ITS CREST, SHALL BE PERMITTED TO BE CONSIDERED AS TOPOGRAPHIC CATEGORY 1.

CATEGORY 3: STRUCTURES LOCATED IN THE UPPER HALF OF A HILL. WIND SPEED-UP SHALL BE CONSIDERED TO OCCUR IN ALL DIRECTIONS. STRUCTURES LOCATED VERTICALLY ON THE LOWERHALF OF A HILL SHALL BE PERMITTED TO BE CONSIDERED AS TOPOGRAPHIC CATEGORY 1.

CATEGORY 4: STRUCTURES LOCATED IN THE UPPER HALF OF A RIDGE. WIND SPEED-UP SHALL BE CONSIDERED TO OCCUR IN ALL DIRECTIONS. STRUCTURES LOCATED VERTICALLY ON THE LOWER HALF OF A RIDGE SHALL BE PERMITTED TO BE CONSIDERED AS TOPOGRAPHIC CATEGORY 1.

CATEGORY 5: WIND SPEED-UP CRITERIA BASED ON A SITE-SPECIFIC INVESTIGATION.

Appendix B – Proposed Antenna Information

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN DATE: 7/28/23
ANTENNA MOUNT STRUCTURAL ANALYSIS DATE: 6/12/23
ANTENNA SUPPORT STRUCTURE (150'± MONOPOLE) STRUCTURAL ANALYSIS DATE: 6/12/23

verizon

20 ALEXANDER DRIVE, 2nd FLOOR, WALLINGFORD, CT 06492

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

PROJECT TYPE: WIRELESS TELECOMMUNICATIONS COLLOCATION ON EXISTING 150'± MONOPOLE

SITE INFORMATION:

PARENT PARCEL OWNER:	MAZL LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920
TOWER OWNER:	GOOSETOWN NETWORK SERVICES, LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920 (845) 268-7550
TOWER OWNER ID:	UNKNOWN
APPLICANT:	CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE, 2nd FLOOR WALLINGFORD, CT 06492
SITE ADDRESS:	7A OLD WINDSOR ROAD BLOOMFIELD, CT 06002
COUNTY:	HARTFORD COUNTY, CT
SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE N 41°-51'-19.96" (41.855544°) (NAD '83) W 72°-42'-16.98" (72.704717°) (NAD '83)
JURISDICTION:	CONNECTICUT SITING COUNCIL
TAX ID PARCEL NUMBER:	MAP 18 BLOCK 68
ARCHITECT / ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
POWER COMPANY:	EVERSOURCE ENERGY 247 STATION DRIVE, SE 210 WESTWOOD, MA 02090 (781) 441-3810
TELEPHONE COMPANY:	VERIZON 185 FRANKLIN STREET BOSTON, MA 02107 (800) 941-9900

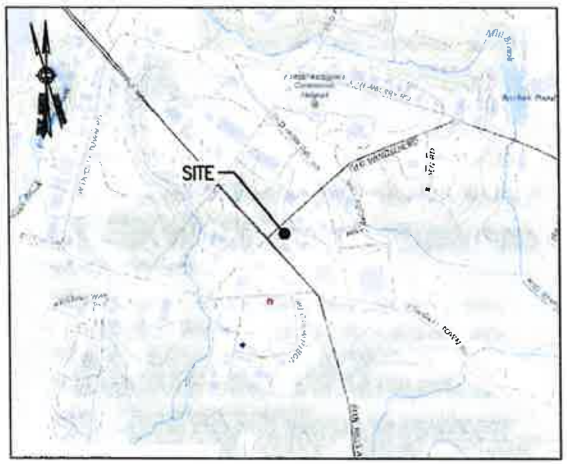
GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON 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.
2. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2022 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

VICINITY MAP

SCALE: 1"=1000'



DRIVING DIRECTIONS

FROM WALLINGFORD, TAKE I-91 NORTH. TAKE EXIT 37 FOR CT-305/BLOOMFIELD AVENUE TOWARD WINDSOR CENTER. USE LEFT 2 LANES TO TURN LEFT ONTO CT-305 W/BLOOMFIELD AVENUE. THE SITE WILL BE ON THE LEFT HAND SIDE.

SHEET INDEX

DO NOT SCALE DRAWINGS

ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS AT THE PROPOSED PROJECT SITE SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION PHASE. THE PROJECT OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO PROCEEDING WITH THE PROPOSED WORK AFFECTED BY SUCH DISCREPANCIES. IN THE EVENT OF LACK OF SUCH NOTIFICATION, SUCH DISCREPANCIES SHALL BECOME THE RESPONSIBILITY OF THE PREVAILING CONTRACTOR RESPONSIBLE FOR CONSTRUCTION.

PROJECT DESCRIPTION

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT INSTALLATION AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS TELECOMMUNICATIONS SERVICE.
2. THIS FACILITY WILL CONSUME NO UNRECOVERABLE ENERGY.
3. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR   DATE

DRAWING SCALE NOTE:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

TITLE SHEET

DRAWING NO:

T01

SCALE: AS SHOWN		
CEA PROJECT NO.: 9810.413	3/28/23	

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – VERIZON WIRELESS
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – VERIZON WIRELESS
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC. 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACK FILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH VERIZON WIRELESS NETWORK STANDARD (NSTD123) TO THE MAXIMUM EXTENT FEASIBLE UNLESS PRECLUDED OR LIMITED BY DESIGN SHOWN ON THESE DRAWINGS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. 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 ENGINEERING. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR 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.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.......3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER ....2 IN.
   #5 AND SMALLER & WWF ....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL ....¾ IN.
   BEAMS AND COLUMNS ....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER:
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON WIRELESS SPECIFICATION 35292-000-3PS-OET-00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"Ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.

7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.

2. COORDINATION OF WORK:
   SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
   SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANEL BOARD AND CIRCUIT ID'S).

8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON- CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR   DATE

DRAWING SCALE NOTE:

[illegible]

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) MOD	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

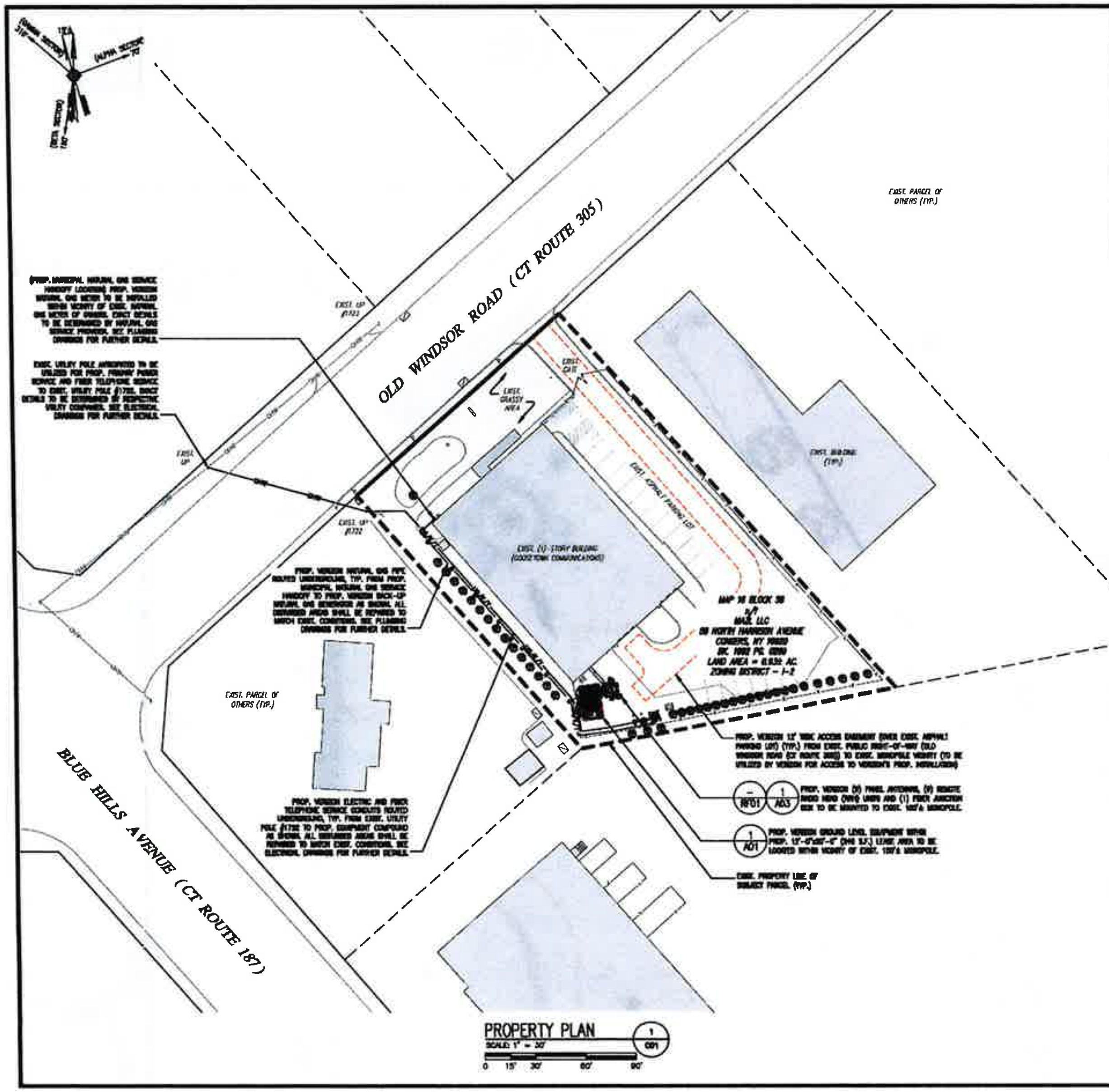
DRAWING TITLE:

GENERAL NOTES

DRAWING NO:

GN01

SCALE: N/A	[illegible]	[illegible]
CEA PROJECT NO.: 06210.413	3/28/23	[illegible]



GENERAL NOTES:

1. INITIAL DESIGN VISIT DATE: 1/13/23
2. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD '83)
4. SITE CONTROL POINT: CENTER OF EXISTING MONOPOLE; LATITUDE: N. 41°-51'-13.86" (NAD '83); LONGITUDE: W. 72°-42'-18.86" (NAD '83)
5. PARENT PARCEL OWNER: WAZ LLC, 58 NORTH HARRISON AVENUE, CONGERS, NY 10920
6. TOWER OWNER: NETWORK SERVICES, LLC, 58 NORTH HARRISON AVENUE, CONGERS, NY 10920
7. TOWER OWNER ID: UNKNOWN
8. SITE ADDRESS: 7A OLD WINDSOR ROAD, BLOOMFIELD, CT 06002
9. APPLICANT: CELLCO PARTNERSHIP (dba VERIZON WIRELESS), 20 ALEXANDER DRIVE, 2nd FLOOR, WALLINGFORD, CT 06492
10. JURISDICTION: CONNECTICUT SITING COUNCIL
11. TAX ID: MAP 18 BLOCK 38
12. DEED REFERENCE: BK. 1992 PG. 0208
13. PLAN REFERENCES: TOWN OF BLOOMFIELD ASSESSOR/GIS MAPS
14. ZONING CLASSIFICATION: I-2 (INDUSTRIAL)
15. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREIN WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY SITE WORK. CALL DIGSAFE 1-888-344-7233 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
16. THE PROPERTY LINES SHOWN WERE COMPILED UTILIZING TOWN OF BLOOMFIELD ASSESSOR'S PLANS, GIS, RECORDED DEEDS AND PLANS OF REFERENCE AS INDICATED. A COMPLETE BOUNDARY SURVEY WAS NOT UTILIZED IN THE PREPARATION OF THESE PLANS.
17. THE SITE IS LOCATED IN FLOOD HAZARD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON FLOOD INSURANCE RATE MAP FOR THE TOWN OF BLOOMFIELD, (MAP NUMBER 09003C0356F) EFFECTIVE 9/26/2008.
18. BEARING SYSTEM OF THIS PLAN IS BASED ON GRID NORTH. TRUE NORTH WAS ESTABLISHED FROM GPS OBSERVATIONS. IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF TRUE NORTH.

LEGEND

- PROPERTY LINE
- ABUTTING PROPERTY LINE
- PROPERTY OFFSET/RADIUS
- EXIST. EASEMENT
- EXIST. CHAIN LINK FENCE
- EXIST. STOCKADE FENCE
- EXIST. EDGE OF PAVEMENT
- EXIST. OVERHEAD UTILITIES
- APPROXIMATE ZONING BOUNDARY
- APPROXIMATE TOWN LINE

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

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SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/29/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

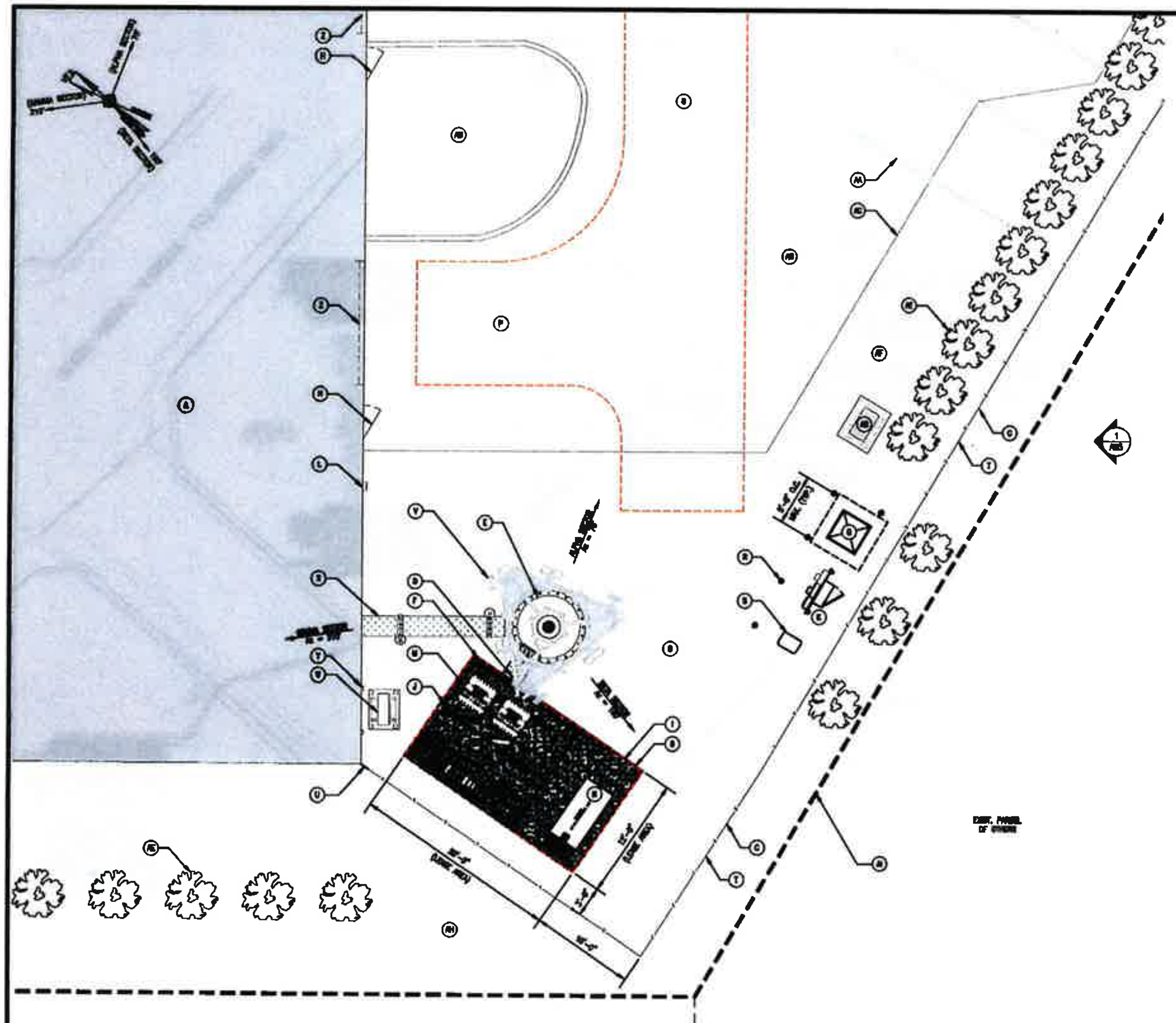
DRAWING TITLE:

PROPERTY PLAN

DRAWING NO:

C01

SCALE: 1" = 30'
98210.413
3/29/23



SITE CONTROL POINT:
CENTER OF EXISTING MONOPOLE
N 41°-51'-18.96" (41.855266°) (NAD '83)
W 72°-42'-16.98" (72.704717°) (NAD '83)
GROUND ELEVATION – 150.0' AMSL (NAVD '88)
PER GOOGLE EARTH

MONOPOLE VICINITY PLAN (1/A01)

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

LEGEND

ITEM	DESCRIPTION
A	EXIST. (1) STORY BUILDING (GOOSETOWN COMMUNICATIONS)
B	LIMITS OF VERIZON'S PROP. 20'-0"x12'-0" (240 S.F.) LEASE AREA/EQUIPMENT PAD (TYP.)
C	EXIST. 7'± CHAIN-LINK FENCE (TYP.)
D	PROP. VERIZON [illegible] CABLES ROUTED ALONG PROP. OVERHEAD CABLE ICE BRIDGE (TYP.) FROM VERIZON'S PROP. EQUIPMENT PAD TO EXIST. MONOPOLE AS SHOWN.
E	EXIST. 150'± MONOPOLE
F	PROP. VERIZON GPS ANTENNA MOUNTED TO PROP. METAL DECK ICE SHIELD. TOP OF GPS ANTENNA SHALL BE MOUNTED 1'-0" ABOVE TOP OF ICE SHIELD.
G	EXIST. GRAVEL COVER WITHIN EXIST. MONOPOLE VICINITY
H	EXIST. PERSONNEL ACCESS DOOR
I	PROP. VERIZON 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE EQUIPMENT PAD (TYP.)
J	PROP. VERIZON 12'-0"x11'-10" (140± S.F.) METAL DECK ICE SHIELD (SHOWN TRANSPARENT FOR CLARITY) ABOVE PROP. EQUIPMENT
K	APPROXIMATE LOCATION OF PROP. TELCO CABINET AND 3-GANG ELECTRIC METER BANK (TO BE EXPANDABLE TO 6-GANG AND DESIGNED TO ACCOMMODATE [illegible] ELECTRIC SERVICE). EXACT LOCATION, DETAILS AND DESIGN TO BE DETERMINED BY RESPECTIVE UTILITY COMPANIES.
L	EXIST. GOOSETOWN COMMUNICATIONS GENERATOR PLUG
M	PROP. VERIZON EQUIPMENT CABINET MOUNTED TO PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD (TYP.)
N	PROP. VERIZON [illegible] NATURAL GAS GENERATOR MOUNTED TO PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD
O	PROP. VERIZON 12' WIDE ACCESS EASEMENT (OVER EXIST. ASPHALT PARKING LOT) (TYP.) FROM EXIST. PUBLIC RIGHT-OF-WAY (OLD WINDSOR ROAD (CT ROUTE [illegible])) TO EXIST. MONOPOLE VICINITY (TO BE UTILIZED BY VERIZON FOR ACCESS TO VERIZON'S PROP. INSTALLATIONS. SEE SHEET [illegible] FOR CONTINUATION TO OLD WINDSOR ROAD (CT ROUTE [illegible]).
P	PROP. VERIZON [illegible] PARKING SPACE OR TURN-AROUND AREA
Q	APPROXIMATE LOCATION OF PROP. ELECTRIC TRANSFORMER (EXACT DETAILS AND LOCATION TO BE DETERMINED BY ELECTRIC COMPANY)
R	PROP. [illegible] CONCRETE FILLED STEEL BOLLARD (TYP. OF [illegible])
S	PROP. TELCO HANDHOLE (EXACT DETAILS TO BE DETERMINED BY TELEPHONE COMPANY)
T	EXIST. FENCE TO BE REPAIRED/REINFORCED BY VERIZON AS REQUIRED.
U	EXIST. FENCE GAP TO BE INFILLED BY VERIZON AS REQUIRED
V	PROP. VERIZON [illegible] PANEL ANTENNAS, [illegible] UNITS AND (1) [illegible] JUNCTION BOX TO BE MOUNTED TO PROP. [illegible] STEEL MOUNTING PLATFORM ON EXIST. 150'± MONOPOLE.
W	EXIST. GOOSETOWN COMMUNICATIONS AC CONDENSING UNIT AND PEDESTAL
X	EXIST. GOOSETOWN COMMUNICATIONS OVERHEAD CABLE ICE BRIDGE (TYP.)
Y	EXIST. GOOSETOWN COMMUNICATIONS AC CONDENSING UNIT DISCONNECT SWITCH
Z	EXIST. OVERHEAD DOOR
AA	EXIST. PARKING STRIPE (TYP.)
AB	EXIST. ASPHALT PARKING LOT
AC	APPROXIMATE EDGE OF EXIST. ASPHALT SURFACE (TYP.)
AD	EXIST. MULCH BED
AE	APPROXIMATE LOCATION OF EXIST. EVERGREEN TREE (TYP.) (ALL TO REMAIN)
AF	EXIST. GRAVEL AREA
AG	EXIST. STORM DRAIN (EXIST. UNDERGROUND DRAIN PIPES (NOT SHOWN FOR CLARITY) SHALL BE IDENTIFIED IN FIELD AND LEFT UNDISTURBED DURING ALL PHASES OF CONSTRUCTION.
AH	EXIST. GRASSY AREA
AI	APPROX. EXIST. PROPERTY LINE (TYP.)

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE: [illegible]

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) [illegible]	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

MONOPOLE VICINITY PLAN

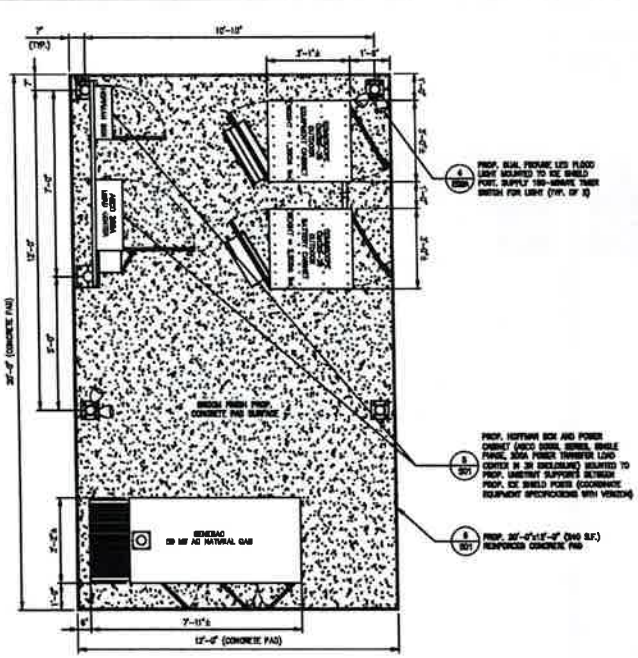
DRAWING NO:

A01

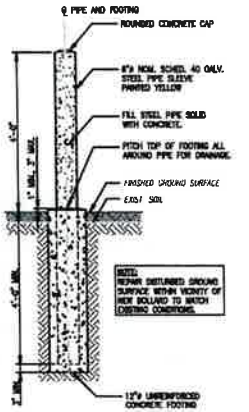
SCALE: 3/16" = 1'-0"

CEA PROJECT NO.: 06210.413

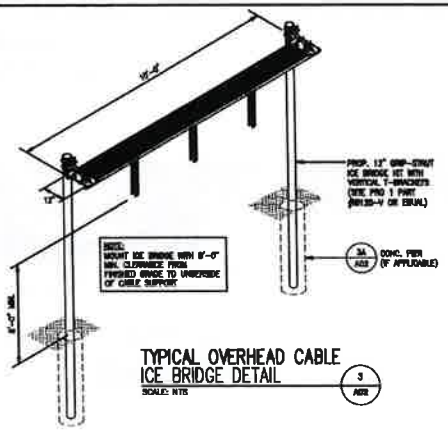
ORIGINAL ISSUE DATE: 3/28/23



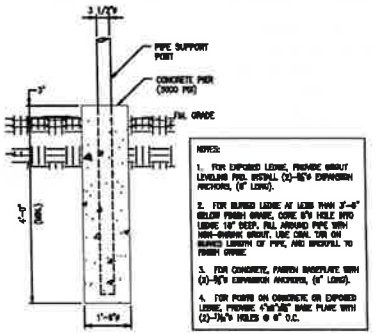
EQUIPMENT AREA PLAN



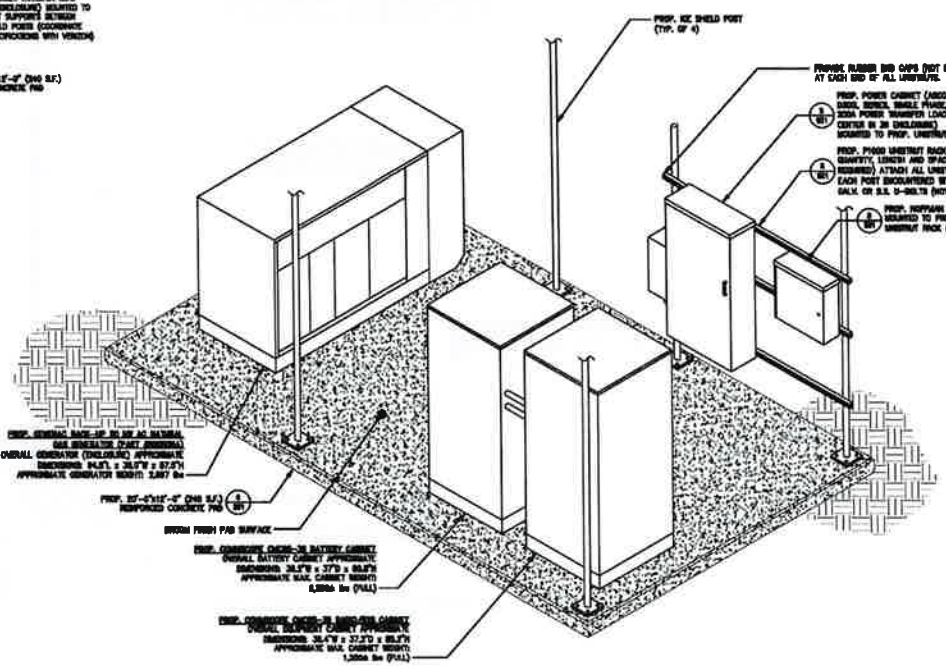
TYPICAL BOLLARD DETAIL



TYPICAL OVERHEAD CABLE ICE BRIDGE DETAIL



CABLE BRIDGE PIER



EQUIPMENT AREA ISOMETRIC VIEW

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
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MARLBOROUGH, MA 01752
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www.chappellengineering.com

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ENGINEER/LAND SURVEYOR DATE

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

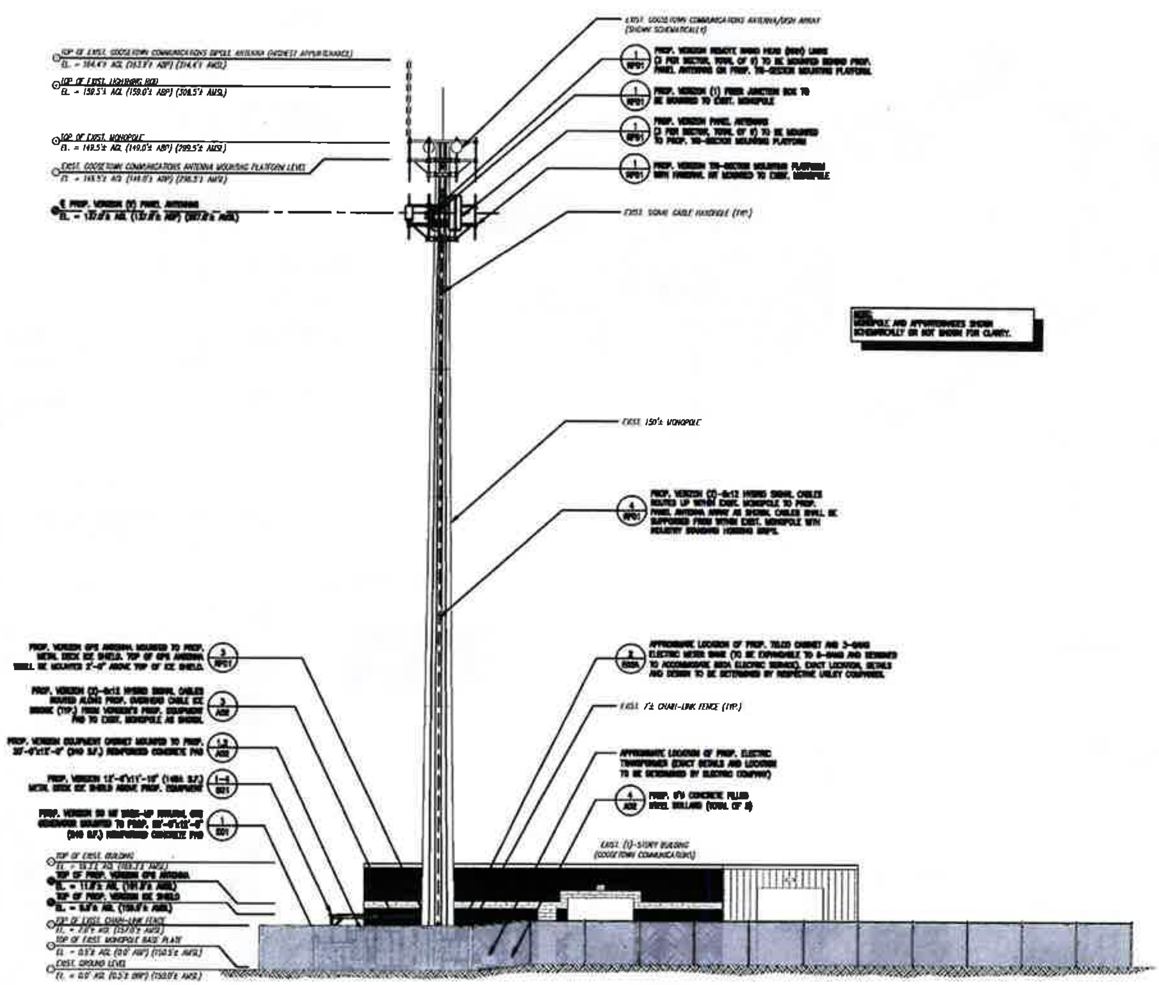
DRAWING TITLE:

EQUIPMENT AREA PLAN & DETAILS

DRAWING NO:

A02

SCALE:	DESIGNED BY:	VZW PROJECT NO:
AS SHOWN	DRAWN BY:	VZW LOCATION CODE:
CEA PROJECT NO:	CHECKED BY:	VZW SUBSITE ID:
00810.413	ORIGINAL ISSUE DATE: 3/28/23	



SOUTHEAST SITE ELEVATION
SCALE: 1" = 10'
0 5' 10' 20' 30'

LEGEND

AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Structural | Land Surveying

R.K. EXECUTIVE CENTRE
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MARLBOROUGH, MA 01752
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3	REVISED PER (7/28/23) RFDS	8/21/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

SOUTHEAST SITE ELEVATION

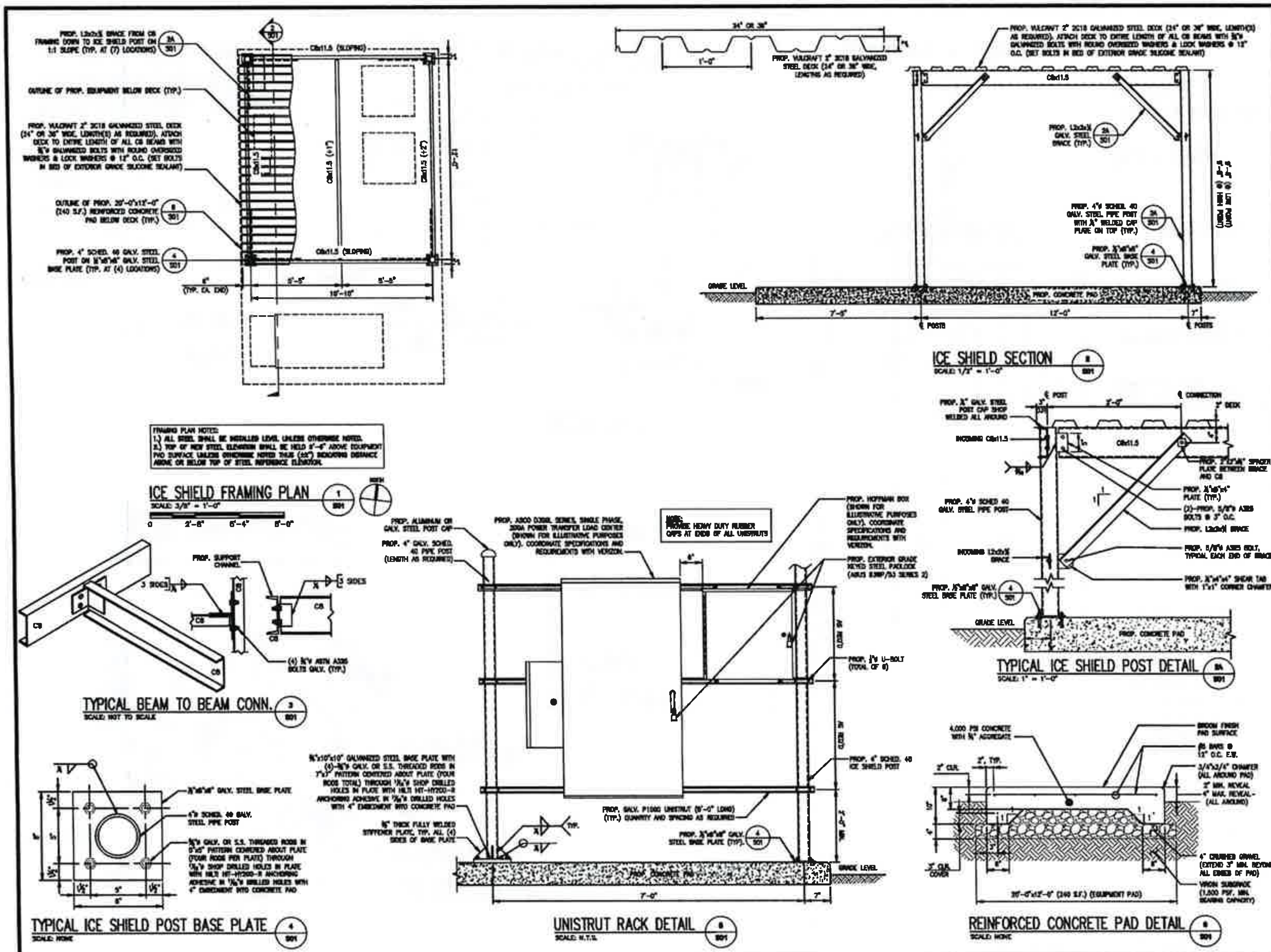
DRAWING NO:

A03

SCALE: 1" = 10'

CEA PROJECT NO.: 86210.413

ORIGINAL ISSUE DATE: 3/28/23


ICE SHIELD FRAMING PLAN 1 S01
SCALE: 3/8" = 1'-0"
FRAMING PLAN NOTES:
1.) ALL STEEL SHALL BE INSTALLED LEVEL UNLESS OTHERWISE NOTED.
2.) TOP OF NEW STEEL ELEVATION SHALL BE HELD 8'-6" ABOVE EQUIPMENT PAD SURFACE UNLESS OTHERWISE NOTED THUS (±X') INDICATING DISTANCE ABOVE OR BELOW TOP OF STEEL REFERENCE ELEVATION.
PROP. L3x3x¼ BRACE FROM C8 FRAMING DOWN TO ICE SHIELD POST ON 1:1 SLOPE (TYP. AT (7) LOCATIONS)
OUTLINE OF PROP. EQUIPMENT BELOW DECK (TYP.)
OUTLINE OF PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD BELOW DECK (TYP.)
PROP. 4" SCHED. 40 GALV. STEEL POST ON ½"x8"x8" GALV. STEEL BASE PLATE (TYP. AT (4) LOCATIONS)
C8x11.5 (SLOPING)
12'-0"
10'-10"
5'-5"
ICE SHIELD SECTION 2 S01
SCALE: 1/2" = 1'-0"
PROP. VULCRAFT 2" 2C18 GALVANIZED STEEL DECK (24" OR 36" WIDE, LENGTHS AS REQUIRED)
PROP. 4"Ø SCHED. 40 GALV. STEEL PIPE POST WITH ½" WELDED CAP PLATE ON TOP (TYP.)
GRADE LEVEL
PROP. CONCRETE PAD
7'-5"
12'-0"
TYPICAL BEAM TO BEAM CONN. 3 S01
SCALE: NOT TO SCALE
PROP. SUPPORT CHANNEL
(4) ⅝"Ø ASTM A325 BOLTS GALV. (TYP.)
TYPICAL ICE SHIELD POST BASE PLATE 4 S01
SCALE: NONE
½"x8"x8" GALV. STEEL BASE PLATE
4"Ø SCHED. 40 GALV. STEEL PIPE POST
UNISTRUT RACK DETAIL 5 S01
SCALE: N.T.S.
NOTE: PROVIDE HEAVY DUTY RUBBER CAPS AT ENDS OF ALL UNISTRUTS
PROP. HOFFMAN BOX (SHOWN FOR ILLUSTRATIVE PURPOSES ONLY). COORDINATE SPECIFICATIONS AND REQUIREMENTS WITH VERIZON.
PROP. ½"Ø U-BOLT (TOTAL OF 8)
PROP. 4" SCHED. 40 ICE SHIELD POST
GRADE LEVEL
7'-0"
TYPICAL ICE SHIELD POST DETAIL 2A S01
SCALE: 1" = 1'-0"
PROP. L3x3x¼ BRACE
PROP. CONCRETE PAD
REINFORCED CONCRETE PAD DETAIL 6 S01
SCALE: NONE
4,000 PSI CONCRETE WITH ¾" AGGREGATE
BROOM FINISH PAD SURFACE
#5 BARS @ 12" O.C. E.W.
4" CRUSHED GRAVEL (EXTEND 3" MIN. BEYOND ALL EDGES OF PAD)
VIRGIN SUBGRADE (1,500 PSF. MIN. BEARING CAPACITY)
20'-0"x12'-0" (240 S.F.) (EQUIPMENT PAD)

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR | DATE

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3	REVISED PDX (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS

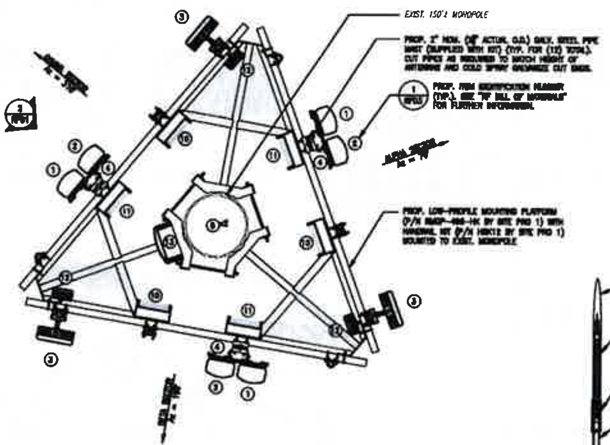
DRAWING NO:

S01

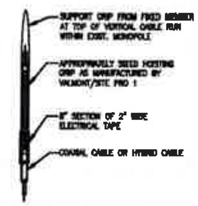
SCALE: AS SHOWN

CEA PROJECT NO.: 98210.413

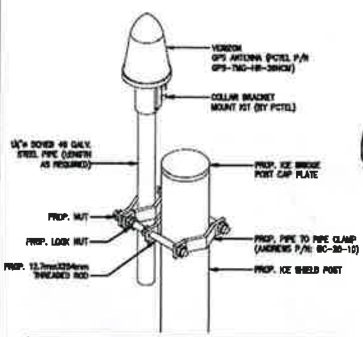
3/28/23



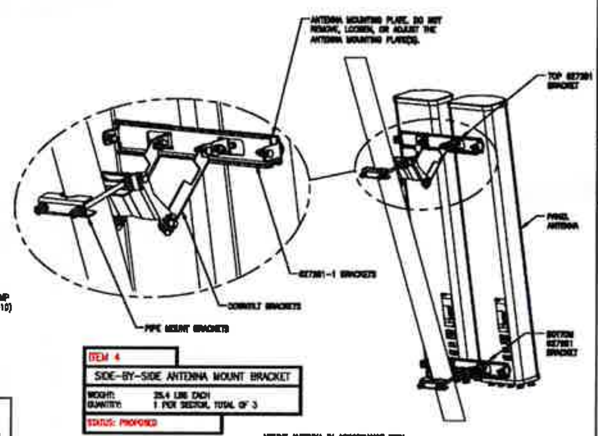
ANTENNA MOUNTING PLAN (1/RF01)
SCALE: 1/2" = 1'-0"



TYPICAL HOISTING GRIP DETAIL (4/RF01)
SCALE: NONE

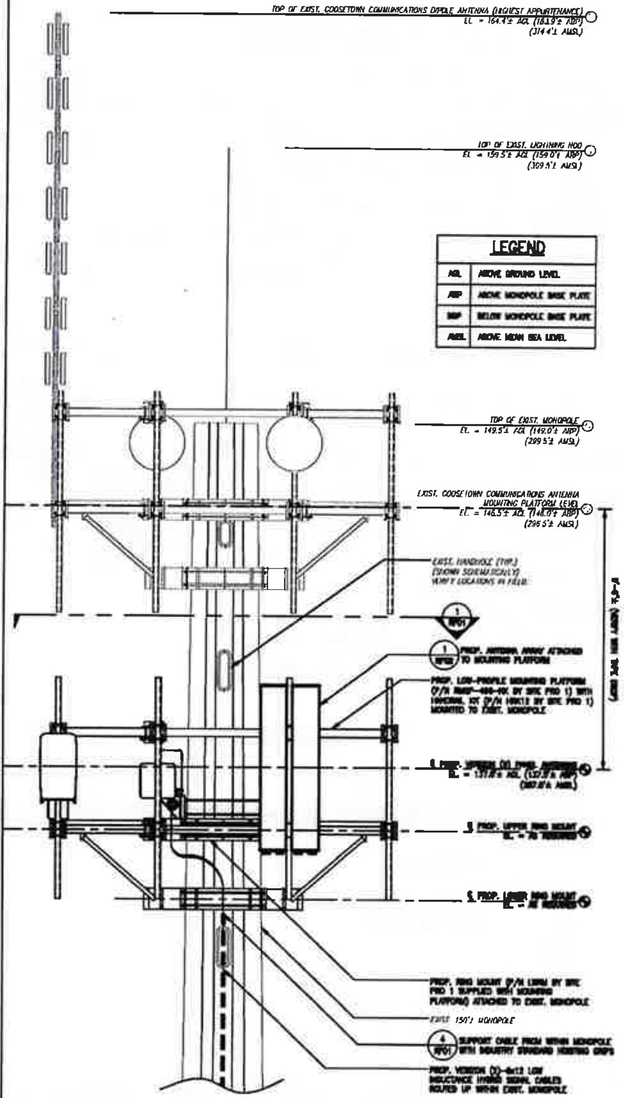


GPS ANTENNA MOUNTING DETAIL (3/RF01)
SCALE: N.T.S.



ITEM 4	
SIDE-BY-SIDE ANTENNA MOUNT BRACKET	
WEIGHT:	25.4 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL SIDE-BY-SIDE ANTENNA MOUNT KIT (COMMSCOPE PART #BSAMNT-SBS-1-2) (5/RF01)
SCALE: NOT TO SCALE



LEGEND	
AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

ANTENNA MOUNTING PLATFORM MOUNTING DETAIL (2/RF01)
SCALE: 1/2" = 1'-0"

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
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MARLBOROUGH, MA 01752
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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

ANTENNA MOUNTING PLAN AND DETAILS

DRAWING NO:

RF01

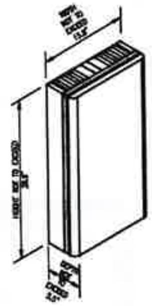
SCALE: AS SHOWN
CEA PROJECT NO.: 9K210.413
3/28/23

COMMSCOPE
NHH-65B-R2B

ITEM 1	
LTE (700/850/5G/1900 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	43.7 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

COMMSCOPE
NHHSS-65B-R2B-R2BT4

ITEM 2	
LTE (2100/CBRS MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	48.1 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	



SAMSUNG
MT6413-77A

ITEM 3	
MT6413-77A ANTENNA	
MAX. DIMENSIONS:	35.1"H x 15.9"W x 5.5"D
MAX. WEIGHT:	57.3 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL PROP. PANEL ANTENNA SPECIFICATIONS (1/RF02)

SCALE: N.T.S.

SAMSUNG
RF4461d-13A

ITEM 10	
LTE/NR (700/850/5G MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.3"D
WEIGHT:	79.1 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

SAMSUNG
RF4439d-25A B25/B66A

ITEM 11	
LTE/NR (1900/2100 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.0"D
WEIGHT:	74.7 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

SAMSUNG
RT4423-48A

ITEM 12	
(BAND 48 (3.5 GHz)) NR AU RRH	
DIMENSIONS:	11.8"H x 8.7"W x 4.3"D
WEIGHT:	18.7 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL REMOTE RADIO HEAD (RRH) UNIT DIMENSIONS (2/RF02)

SCALE: N.T.S.

Procedure
Mounting Procedures

4.1 A mounting base is delivered with the unit. The base allows either wall/ladder or pole mounted installation. See picture to identify the holes for each installation method.

4.2 *Option 1: Pole Mount*
Using supplied hardware, mount Bracket to 2" to 4" diameter pole

4.3 *Option 2: Unistrut*

4.4 *Option 3: Monopole*
Use 1" stainless steel bands (not supplied) through slots on bracket to mount to Monopole

Gland/Insert Definitions

5.1 See picture to identify Brass Gland Assembly Definitions.

Assembled in unit as shipped

Qty	Connector Size	Pos	Insert P/N	Insert Hole	Cable Type
2	M75	A	190-[illegible]	42mm	5x12 RL
4	M75	B	190-0738	3x 16.8mm	1x2

Included in kit shipped with unit

Qty	Connector Size	Insert P/N	Insert Hole	Cable Type	Purpose	Pos
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	190-0805	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	2x 8.5mm	[illegible]	[illegible]	[illegible]

ITEM 13	
FIBER JUNCTION BOX	
DIMENSIONS:	29.38"H x 16.5"W x 12.8"D
WEIGHT:	32.0 LBS
QUANTITY:	TOTAL OF 1
STATUS: PROPOSED	

TYPICAL FIBER JUNCTION BOX DIMENSIONS, SCHEMATIC AND MOUNTING PROCEDURE (3/RF02)

SCALE: N.T.S.

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
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www.chappellengineering.com

SEAL:

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS

DRAWING NO:
RF02

SCALE: AS SHOWN | CEA PROJECT NO: 98210.413 | 3/28/23

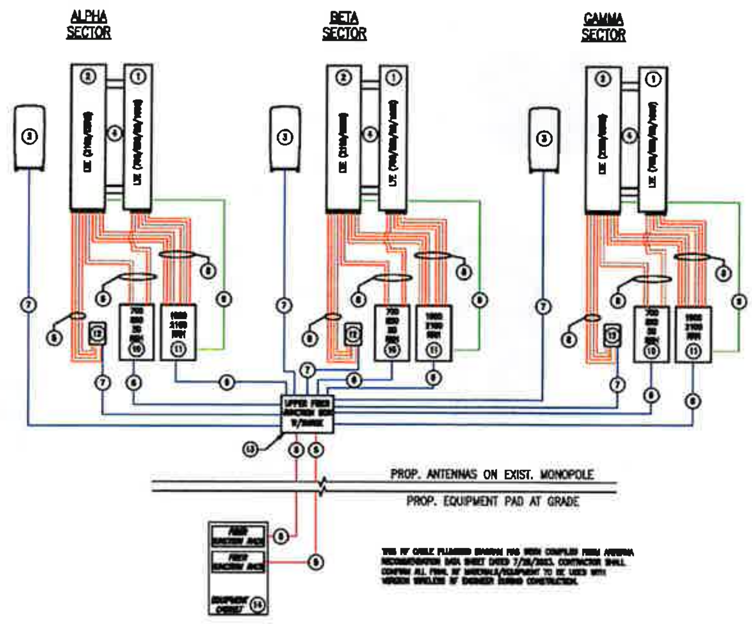
RF BILL OF MATERIALS (PROP. (FINAL) CONFIGURATION)

SITE NAME: BLOOMFIELD 5 CT — A = ALPHA SECTOR B = BETA SECTOR G = GAMMA SECTOR

ITEM (SEE PLAN)	DESCRIPTION	BAND	QTY	STATUS	CABLE LENGTH/UNIT SIZE	COMMENTS
1	PANEL ANTENNA	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
2	PANEL ANTENNA	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
3	PANEL ANTENNA	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
4	[illegible]	-	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
5	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
6	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
7	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
8	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
9	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
10	[illegible]	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
11	[illegible]	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
12	[illegible]	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
13	[illegible]	-	1 TOTAL	PROP.	[illegible]	[illegible]
14	[illegible]	-	1 TOTAL	PROP.	[illegible]	[illegible]

[illegible]

RF BILL OF MATERIALS (FINAL CONFIGURATION) 1/RF03
SCALE: NONE



RF CABLE PLUMBING DIAGRAM (FINAL CONFIGURATION) 2/RF03
SCALE:

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

REVISIONS

NO.	DESCRIPTION	DATE
0	[illegible]	3/28/23
1	[illegible]	4/11/23
2	[illegible]	4/14/23
3	[illegible]	8/31/23
4	[illegible]	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

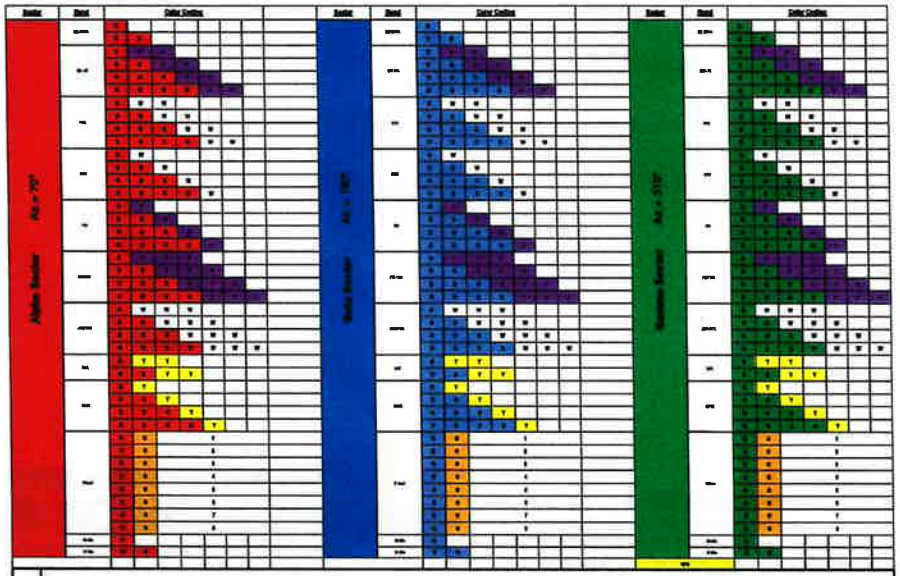
DRAWING TITLE:

RF BILL OF MATERIALS AND RF CABLE PLUMBING DIAGRAM

DRAWING NO:

RF03

SCALE: AS SHOWN
3/28/23



Main Line Cable Length/Information

CABLE LENGTH PROVIDED BELOW IS APPROXIMATE IN NATURE AND REFLECTED AS AN ASSUMED VALUE TO PROVIDE ADEQUATE LENGTH. ANY FIELD MEASUREMENTS OF ANTICIPATED CABLE LENGTH IS DISCOURAGED IN AN EFFORT TO AVOID SLACK AND TO OPTIMIZE SIGNAL. SUCH FIELD MEASUREMENTS MAY SUPERCEDE THE LENGTH PROVIDED BELOW AT THE DISCRETION OF THE GENERAL CONTRACTOR

155'±

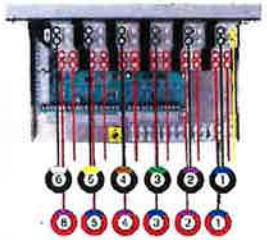
TWO (2) PROPOSED 6x12
HYBRID SIGNAL CABLES

LINE COLOR CODE SPECIFICATIONS 1 RF04

Hybrid Cable on Towers

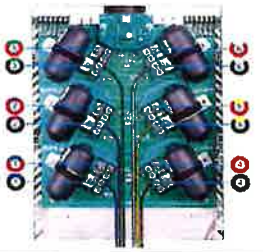
Hybrid Cable 1

Sector	Identification Color	-48V	RTN
700 Alpha			
AWS Alpha			
PCS Alpha			
850 Alpha			
Spare	Yellow		
Spare	White		



Hybrid Cable 2

Sector	Identification Color	-48V	RTN
700 Beta			
AWS Beta			
PCS Beta			
850 Beta			
Spare	Yellow		
Spare	White		



HYBRID CABLE COLOR CODE SPECIFICATIONS 2 RF04

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 461-7400
www.chappelengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TBA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/01/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

RF COLOR CODE SPECIFICATIONS

DRAWING NO:

RF04

N/A		
06310.413	3/28/23	

GENERAL PLUMBING NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE AND FULLY OPERATING SYSTEM INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY AS INDICATED ON DRAWINGS AND AS DESCRIBED IN THESE SPECIFICATIONS.

2. THE CONTRACTOR SHALL PERFORM ALL CUTTING, DEMOLISHING, REMOVAL, DISPOSAL, PATCHING, SEALING, RESTORATION AND ALL ELSE REQUIRED TO COMPLETE THE PLUMBING INSTALLATION.

3. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LOCALLY PRESIDING BUILDING CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

4. THE CONTRACTOR SHALL PAY ALL FEES AND TAXES, OBTAIN ALL PERMITS AND APPROVALS, FILE THE REQUIRED DOCUMENTS AND CAUSE ALL INSPECTIONS.

5. SHOP DRAWINGS OF THE FOLLOWING SHALL BE SUBMITTED TO THE OWNER'S PROJECT REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION:

   A. LAYOUT OF ALL EQUIPMENT
   B. DIMENSIONED AND DETAILED PIPING LAYOUT
   C. MANUFACTURER'S SPECIFICATIONS OF ALL EQUIPMENT SPECIFIED
   D. DETAILED CONTROL WIRING DIAGRAMS

6. ALL PIPE HANGERS SHALL BE ATTACHED TO THE BUILDING/SUPPORT STRUCTURE. PROVIDE TRAPEZE SUPPORTS AS REQUIRED.

7. THE DRIBBING OF HAMMERS, CHOPPING, CORE DRILLING, WORK IN OTHER TENANT SPACES OR OCCUPIED AREAS, WORK CREATING FUMES ETC. OR WORK DEEMED BY THE OWNER TO BE A NUISANCE TO OTHER TENANTS SHALL BE DONE AFTER WORKING HOURS.

8. ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS AND FLOORS SHALL BE FIRESTOPPED WITH HILTI FIRESTOPPING MATERIAL. PROVIDE PIPE SLEEVES FOR ALL PENETRATIONS SEALED WITH AN APPROVED FIRESTOP.

9. THIS CONTRACTOR SHALL FURNISH A ONE (1) YEAR GUARANTEE ON PARTS AND LABOR OF THE INSTALLATION FROM THE DATE OF OWNER ACCEPTANCE AND A FIVE (5) YEAR COMPRESSOR WARRANTY WHERE AVAILABLE.

10. CONTRACTOR SHALL FURNISH ALL NECESSARY CONTROLS, STARTERS, PUMPS, MOTORS, PANELS AND RELAYS ETC. FOR A FULLY FUNCTIONING SYSTEM.

11. BAKELITE LABELS SHALL BE INSTALLED AT ALL NEW EQUIPMENT FOR IDENTIFICATION PURPOSES.

12. ANY REQUIRED SHUTDOWNS OF BASE BUILDING SYSTEMS FOR CONNECTION OF TENANT SYSTEMS MUST BE PRIOR APPROVED AND COORDINATED WITH ALL APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES. THIS CONTRACTOR SHALL ASSUME ALL FEES REQUIRED BY THE OWNER TO ARRANGE AND SUPERVISE THE SHUTDOWN(S).

13. THE CONTRACTOR SHALL VISIT THE LOCATIONS OF ALL PROPOSED WORK AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING AND FORECASTED CONDITIONS AND LIMITATIONS.

14. VERIFY ALL EXISTING CONDITIONS. ALL NEW PIPING AND EQUIPMENT SHALL BE COORDINATED WITH ALL EXISTING DUCTWORK, PIPING, ELECTRICAL AND GENERAL SITE CONDITIONS.

15. ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL AND GENERAL SITE CONDITIONS SHOWN ARE APPROXIMATE AND EXACT CONDITIONS MUST BE VERIFIED IN THE FIELD THROUGHOUT CONSTRUCTION.

16. ALL WORK SHALL CONFORM TO THE GOVERNING BASE BUILDING/PROPERTY STANDARDS.

17. THE CONTRACTOR SHALL COORDINATE WITH THE BASE BUILDING/PROPERTY MANAGEMENT AS TO THE DELIVERY OF EQUIPMENT AND SCHEDULING OF WORK SO AS TO NOT INTERFERE WITH THE OPERATION OF THE OCCUPIED FACILITIES. ANY REQUIRED SHUTDOWNS OF THE EXISTING BASE BUILDING/PROPERTY SYSTEMS OR WORK OUTSIDE OF THE DEMISING AREA SHALL BE STRICTLY COORDINATED WITH ALL APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES.

18. ALL ANCILLARY POWER AND LINE VOLTAGE WIRING SHALL BE DONE BY A LICENSED AND INSURED ELECTRICAL CONTRACTOR BASED UPON THE DIAGRAMS FURNISHED BY THE MECHANICAL CONTRACTOR.

GENERAL PLUMBING NOTES (CONTINUED):

19. ALL MATERIAL AND APPARATUS SHALL BE NEW AND IN FIRST CLASS CONDITION. ALL MATERIAL AND APPARATUS SHALL HAVE MARKINGS OR A NAMEPLATE IDENTIFYING THE MANUFACTURER AND PROVIDING SUFFICIENT REFERENCE TO ESTABLISH QUALITY, SIZE AND CAPACITY. ALL WORKMANSHIP SHALL BE OF THE FINEST POSSIBLE BY EXPERIENCED MECHANICS OF THE PROPER TRADE. IN GENERAL, ALL MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE CONSIDERED ACCEPTABLE. ALL HOISTS, SCAFFOLDS, STAGING, RUNWAYS, TOOLS, MACHINERY AND EQUIPMENT REQUIRED FOR THE PERFORMANCE OF THE WORK SHALL BE FURNISHED BY THIS CONTRACTOR. MATERIAL AND EQUIPMENT SHALL BE STORED AND MAINTAINED IN CLEAN CONDITION AND PROTECTED FROM WEATHER, MOISTURE AND PHYSICAL DAMAGE.

20. THE CONTRACTOR SHALL PERSONALLY INSPECT THE SITE OF THE PROPOSED WORK DURING THE CUSTOMER'S BID WALK OR AS OTHERWISE ARRANGED WITH APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

21. DIRT AND REFUSE RESULTING FROM THE PERFORMANCE OF THE WORK SHALL BE REMOVED FROM THE PREMISES DAILY TO PREVENT ACCUMULATION. THE CONTRACTOR SHALL COOPERATE IN MAINTAINING REASONABLY CLEAN PREMISES AT ALL TIMES THROUGHOUT CONSTRUCTION. IMMEDIATELY PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL PERFORM A FINAL CLEANUP OF DIRT AND REFUSE RESULTING FROM THE WORK PERFORMED. THE CONTRACTOR SHALL CLEAN ALL MATERIAL AND EQUIPMENT INSTALLED UNDER THE CONTRACT. DIRT, DUST, PLASTER, STAINS AND ALL FOREIGN MATTER SHALL BE REMOVED FROM ALL SURFACES. DAMAGED FINISHES SHALL BE TOUCHED UP AND RESTORED TO THEIR ORIGINAL CONDITION.

22. THE DRAWINGS ARE SCHEMATIC IN NATURE, BUT SHOW THE VARIOUS COMPONENTS OF THE SYSTEMS APPROXIMATELY TO SCALE AND ATTEMPT TO INDICATE HOW THEY ARE TO BE INTEGRATED WITH OTHER PARTS OF THE BUILDING/STRUCTURE. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS. DETERMINE EXACT LOCATIONS BY FIELD MEASUREMENTS, CHECKING THE REQUIREMENTS OF OTHER TRADES AND BY REVIEWING ALL CONTRACT DOCUMENTS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS WHICH COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

GAS PIPING NOTES:

1. GAS PIPING SHALL BE DESIGNED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE LATEST REVISION AND IN ACCORDANCE WITH NFPA 54.

2. GAS PIPE SIZING SHALL BE BASED ON TABLE M-605.4.1(2) IN THE BOCA NATIONAL MECHANICAL CODE. A MAXIMUM PIPE LENGTH OF 200 FT. SHALL BE USED FOR THIS DESIGN.

3. GAS PIPING SHALL BE OF MATERIAL SPECIFIED ON PLANS WITH ALL INDUSTRY STANDARD FITTINGS. WHERE GAS PIPING CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE SUPPLY PIPE, A 100# SHUT-OFF GAS COCK AND A UNION.

4. GAS PIPING HANGERS AND SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF "STANDARD PRACTICE FOR PIPE HANGERS AND SUPPORTS – MATERIALS, DESIGN, MANUFACTURE, SELECTION, APPLICATION AND INSTALLATION" (MSS/ASS SP-58-2009). ALL PIPE SHALL BE SUPPORTED IN A NEAT AND WORKMANLIKE MANNER.

5. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS OR RUNNING THREADS. NO GAS VALVES SHALL BE INSTALLED IN ABOVE CEILING OR BELOW GRADE LOCATIONS.

6. ALL GAS VENTS FROM PRESSURE RELIEF OR PRESSURE LIMITING DEVICES SHALL BE PIPED THE FULL OUTLET SIZE AND SHALL BE FITTED WITH AN AGA APPROVED FITTING WITH INSECT SCREEN. PROVIDE CAULKING OR PROPER FLASHING AT VENTS.

7. BRANCH OUTLET PIPES SHALL BE TAKEN FROM THE TOP OR SIDES OF THE HORIZONTAL LINES AND NOT THE BOTTOM.

8. USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.

9. INSPECT, TEST AND PURGE THE GAS PIPING SYSTEM IN ACCORDANCE TO NFPA 54 – PART 4 AND ALL LOCAL REQUIREMENTS. MINIMUM REQUIREMENTS SHALL BE 5 PSIG FOR A PERIOD OF 2 HOURS.

PLUMBING PROCEDURAL, PREPARATION AND TESTING NOTES:

1. DUE TO THE NATURE OF THIS SYSTEM AND OTHER SIMILAR SYSTEMS IN USE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE SYSTEMS AS SPECIFIED. SUBSTITUTIONS SHALL NOT BE CONSIDERED AT THIS TIME UNLESS DIRECTED BY OWNER.

2. ALL WORK WITHIN LIVE ELECTRICAL PANELS SHALL OCCUR DURING HOURS ACCEPTABLE TO THE PANEL OWNER.

3. THE CONTRACTOR SHALL PROVIDE TWO (2) DAYS ADVANCED NOTIFICATION OF ALL DELIVERIES TO THE SITE AND SEVEN (7) DAYS ADVANCED NOTIFICATION OF ANY REQUIRED SERVICE SHUT-DOWNS.

4. THE CONTRACTOR SHALL MAINTAIN INTERFACE WITH THE OWNER AND WITH ALL OF THEIR CONTRACTORS, VENDORS AND ENGINEERING FIRMS.

5. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING TO BE HELD AT THE JOB SITE OR IN THE AREA WHERE THE INSTALLATION WILL TAKE PLACE.

6. PRIOR TO THE START OF CONSTRUCTION, ALL WORKERS SHALL BE BRIEFED ON ALL SAFETY REQUIREMENTS PERTINENT TO THE WORKING ENVIRONMENT.

7. THE CONTRACTOR SHALL INSURE THE AVAILABILITY AND ACCESSIBILITY OF ADEQUATE ON-SITE FIRE EXTINGUISHERS, SAFETY EQUIPMENT BOARDS AND FIRST AID STATIONS.

8. ALL CONNECTIONS, TEST MEASUREMENTS AND ADJUSTMENTS SHALL BE DIRECTLY WITNESSED BY AN OWNER APPROVED PROJECT SUPERVISOR.

9. PRIOR TO THE START-UP OF THE SYSTEMS, THE CONTRACTOR SHALL CHECK ALL COMPONENTS AND DEVICES, LUBRICATE ITEMS ACCORDINGLY AND TIGHTEN ALL CONNECTIONS. AFTER ALL SYSTEMS HAVE BEEN INSPECTED AND ADJUSTED, CONFIRM ALL OPERATING FEATURES REQUIRED BY THE DRAWINGS AND SPECIFICATIONS AND MAKE FINAL ADJUSTMENTS AS NECESSARY.

10. APPROPRIATE FACTORY REPRESENTATIVES SHALL BE ON SITE TO COMMISSION THE SYSTEM.

11. CONTRACTOR SHALL INSPECT AND TEST ALL PIPING AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS AND EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

12. AUTHORIZED PERSONNEL SHALL CONDUCT CLEANING, PURGING AND TESTING PROCEDURES. TESTING OF PIPING SHALL UTILIZE HYDROSTATIC OR PNEUMATIC MEASURES. OXYGEN OR LP GAS IS NOT TO BE USED.

13. PURGE PIPING WITH INERT GAS PRIOR TO INTRODUCING LP GAS.

14. CONDUCT A FUNCTIONAL TEST OF ALL ISOLATION VALVES, EXCESS FLOW VALVES AND PRESSURE RELIEF VALVES.

15. CONTRACTOR SHALL SUBMIT TO THE OWNER THREE (3) COPIES EACH OF MATERIAL FOR MAINTENANCE AND OPERATION INSTRUCTION MANUALS APPROPRIATELY BOUND INTO MANUAL FORM INCLUDING APPROVED COPIES OF MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, MAINTENANCE INSTRUCTIONS, OPERATING INSTRUCTIONS AND PARTS LISTS (REVISED IF NECESSARY TO SHOW SYSTEM AND EQUIPMENT AS ACTUALLY INSTALLED). CONTRACTOR SHALL ALSO PROVIDE ADEQUATE VERBAL INSTRUCTIONS OF SYSTEM OPERATION AND RE-START TO OWNER'S REPRESENTATIVE AT THE CONCLUSION OF THE WORK.

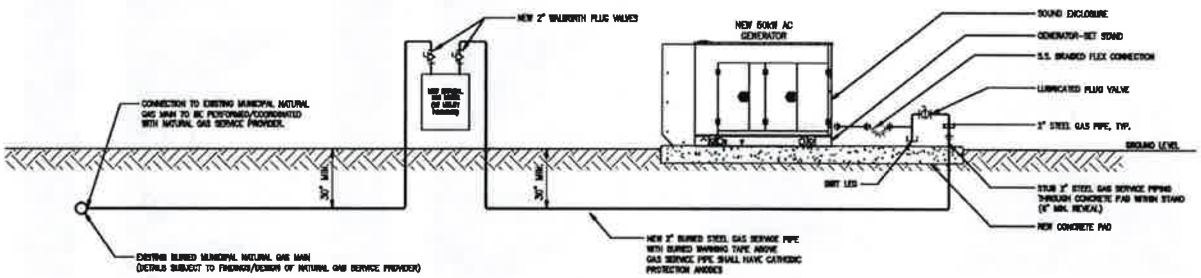
GENERATOR: GENERAC SG050NA (NATURAL GAS)
SUPPLIED BY VERIZON,
INSTALLED BY CONTRACTOR.

CONTRACTOR SHALL OBTAIN FULL SPECIFICATIONS FROM VERIZON WIRELESS PRIOR TO BID.

CONTRACTOR SHALL ARRANGE FOR GENERATOR START-UP SERVICES.

LEGEND

Symbol	Description
	PLUG VALVE
	UNION
	PIPE DROP
	PIPE RISE
	PUSH BUTTON SWITCH



NOTE:
ALL DETAILS SHOWN SCHEMATICALLY. THE CONTRACTOR SHALL COORDINATE WITH GAS SUPPLIER TO REVIEW ALL COMPONENTS AND PERFORM A PRESSURE TEST TO INSURE A COMPATIBLE FUEL DELIVERY ARRANGEMENT IS MADE TO THE GENERATOR. NATURAL GAS SUPPLIER SHALL ALSO REVIEW ALL SAFETY COMPONENTS TO INSURE THEY MEET THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

NATURAL GAS PIPING SCHEMATIC (1 / P01)
SCALE: NOT TO SCALE

CLIENT:
verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR — DATE

DRAWING SCALE NOTE:
THESE DRAWINGS HAVE BEEN PREPARED IN ARCH D (24"x36") FORMAT. AS SUCH, THE WRITTEN SCALES SHOWN ON ANY REPRODUCTIONS OF A NONCONFORMING SIZE SHALL BE CONSIDERED INVALID. ALL BAR SCALES MAY BE USED REGARDLESS OF REPRODUCTION SIZE. WHERE IN CONFLICT, BAR SCALES SHALL SUPERSEDE WRITTEN SCALES.

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REVISIONS

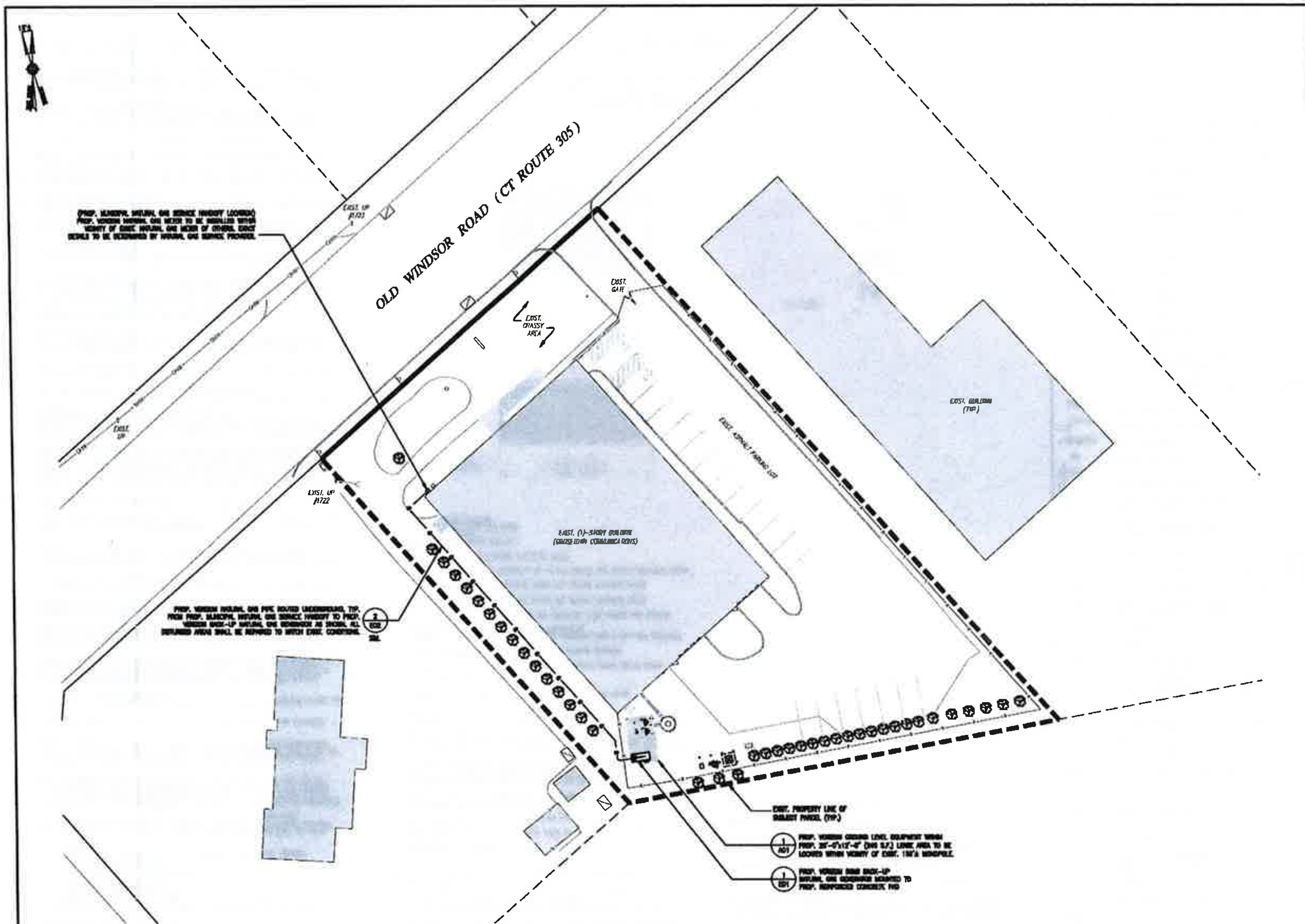
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
PLUMBING NOTES AND SCHEMATIC

DRAWING NO:
P01

SCALE: NOT TO SCALE	DESIGNED BY: [illegible] / DRAWN BY: [illegible] / CHECKED BY: [illegible]	VZW PROJECT NO.: [illegible]
CEA PROJECT NO.: 06210.413	ORIGINAL ISSUE DATE: 3/28/23	VZW LOCATION CODE: [illegible] / SITE LOCATION ID: [illegible]



PLUMBING PLAN
SCALE: 1" = 20'
0 10' 20' 40' 60'

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

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MARLBOROUGH, MA 01752
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SEAL:

ENGINEER/LAND SURVEYOR DATE

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NO.	DESCRIPTION	DATE
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3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

SITE PLUMBING PLAN

DRAWING NO:

P02

SCALE: 1" = 20'
CEA PROJECT NO.: 98210.413
3/28/23

ELECTRICAL SPECIFICATIONS

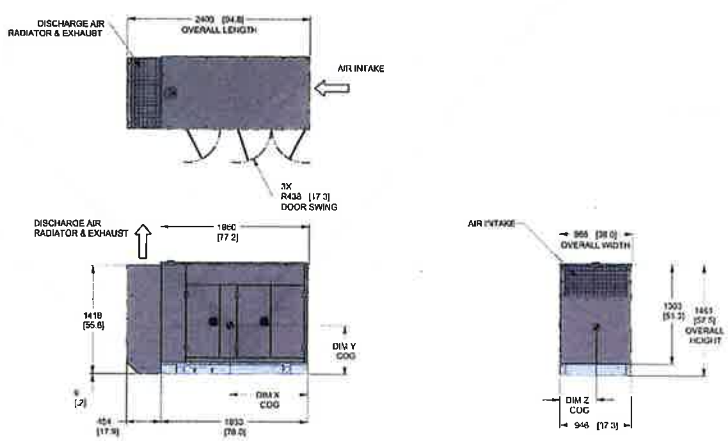
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO MAKE READY FOR USE THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS. MAKE ALL NECESSARY CONNECTIONS AT "PACKAGED" EQUIPMENT.
2. THE ELECTRICAL SYSTEMS SHALL BE SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. ALL MATERIAL AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THE WORK SHALL BE FURNISHED AT NO EXTRA COST.
3. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND NATIONAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   THE 2022 CONNECTICUT STATE BUILDING CODE
   THE NATIONAL ELECTRICAL CODE (NFPA-70)
   THE CONNECTICUT ELECTRICAL CODE
   THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
   THE LIFE SAFETY CODE (NFPA 101)
   THE STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURE AND ANTENNAS (TIA/EIA-222-H)
4. MATERIALS AND EQUIPMENT SHALL BE NEW, UNUSED AND UNDERWRITERS' LABORATORIES, INC. LISTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS IN A TIMELY FASHION, INCLUDING RESPONSIBILITY FOR DETERMINING AVAILABILITY/LEAD TIME FOR ALL NECESSARY EQUIPMENT.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES FOR PERMITS AND INSPECTIONS. WHERE NEW COMMERCIAL POWER SERVICE IS PROVIDED TO THE SITE, OR EXISTING SERVICE MUST BE MODIFIED, CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE ELECTRIC UTILITY, SHALL PERFORM ALL OF HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY, AND SHALL PAY ALL UTILITY SERVICE BACK CHARGES.
6. ALL WIRING OUTSIDE SHALL BE INSTALLED IN HEAVY-GAUGE, (SCHEDULE 40) RIGID STEEL CONDUIT, HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE WITH AN ADDITIONAL FACTORY-APPLIED FINISH INSIDE AND OUTSIDE. CUT ENDS SHALL BE REAMED, THREADED AND COLD GALVANIZED. NO COMPRESSION FITTING WILL BE ACCEPTED.
7. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 AND INSTALLED NOT LESS THAN 30 INCHES BELOW FINISHED GRADE.
8. WIRING INSTALLED IN THE BUILDING THAT IS SHOWN TO BE IN CONDUIT SHALL BE INSTALLED IN EMT. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
9. LIQUID TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL MOTOR TERMINATIONS AND FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION. FLEXIBLE METAL CONDUIT SHALL CONSIST OF A FLEXIBLE, CORROSION RESISTANT METAL CORE WITH AN EXTRUDED, WATERTIGHT, SYNTHETIC JACKET. CONDUITS SMALLER THAN 1-1/2" SHALL HAVE A CONTINUOUS GROUND CONDUCTOR UNDER THE JACKET.
10. NO CONDUIT SMALLER THAN 3/4" ELECTRICAL TRADE SIZE SHALL BE USED, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS. BOX SIZES SHALL BE 4" SQUARE MINIMUM, BUT NOT LESS THAN THAT REQUIRED BY THE CONNECTICUT ELECTRICAL CODE.
11. FITTINGS AND EXPOSED SWITCH, OUTLET AND CONTROL STATION BOXES AND OTHER EXPOSED BOXES 4" SQUARE SHALL BE CAST OR MALLEABLE IRON WITH CADMIUM-ZINC FINISH AND CAST COVERS WITH STAINLESS STEEL SCREWS.
12. FLUSH SWITCH AND OUTLET BOXES SHALL BE HOT-DIPPED GALVANIZED, PRESSED STEEL WITH NYLON COVER PLATES, COLOR AS DETERMINED BY THE ENGINEER.
13. EXCEPT AS OTHERWISE SHOWN, TERMINAL, JUNCTION AND PULL BOXES LARGER THAT 4" SQUARE SHALL BE SHEET STEEL. STEEL BOXES SHALL BE HOT-DIPPED GALVANIZED. BOXES AND COVERS SHALL BE NOT LESS THAN 14 GAUGE METAL. COVERS SHALL BE GASKETED AND FASTENED WITH STAINLESS STEEL HARDWARE.
14. FITTINGS USED WITH LIQUID TIGHT, FLEXIBLE CONDUIT SHALL BE OF THE SCREW-IN, COMPRESSION TYPE WITH SEALING RING. FITTINGS LARGER THAN 1-1/4" SHALL BE FURNISHED WITH INTERNAL GROUND LUGS.
15. HANGERS, RODS, BACK PLATES, BEAM CLAMPS, ETC. SHALL BE GALVANIZED IRON OR STEEL. CONDUITS SHALL BE SUPPORTED AT LEAST EVERY 8 FEET.
16. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS. CONDUIT RUNS SHALL BE STRAIGHT AND TRUE. CONDUIT SHALL BE SUPPORTED BY MEANS OF TWO-HOLE PIPE CLAMPS. BACK PLATES SHALL BE INSTALLED WHERE REQUIRED TO RAISE CONDUITS FROM THE SURFACE. MULTIPLE, HORIZONTAL RUNS SHALL BE SUPPORTED ON TRAPEZE HANGERS WITH STEEL HORIZONTAL MEMBERS AND THREADED RODS NOT LESS THAN 3/8 INCHES IN DIAMETER. HANGERS SHALL BE ATTACHED TO STRUCTURAL STEEL BY MEANS OF BEAM CLAMPS. SPOT TYPE INSERTS SHALL BE USED IN CONCRETE.
17. CONDUIT BENDS SHALL BE CAREFULLY MADE TO PREVENT DISTORTION OF THE CIRCULAR CROSS-SECTION. NO CONDUIT RUN SHALL HAVE MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN PULLING POINTS. CHANGES IN DIRECTION SHALL BE MADE WITH BENDS, STANDARD ELBOWS AND PULLBOXES. BENDS IN PARALLEL RUNS SHALL BE CONCENTRIC.
18. CONDUIT SHALL NOT BE SUPPORTED FROM PIPING, PIPING SUPPORTS, DUCTWORK, SUSPENDED CEILING SUPPORTS OR MECHANICAL EQUIPMENT SUBJECT TO VIBRATION OR REMOVAL.
19. THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY PLUGGED DURING BUILDING CONSTRUCTION UNTIL WIRES ARE TO BE PULLED. SPARE CONDUITS SHALL BE FURNISHED WITH THREADED CAPS.
20. CONDUITS SHALL BE TERMINATED AT UNGASKETED SHEET STEEL BOXES AND ENCLOSURES WITH DOUBLE LOCK NUTS AND INSULATED BUSHINGS. BUSHINGS INSTALLED ON CONDUITS CONTAINING GROUND WIRES SHALL BE GROUNDING TYPE. CONDUITS SHALL BE TERMINATED AT GASKETED SHEET METAL BOXES AND ENCLOSURES WITH CONDUIT HUBS.
21. CONDUCTORS SHALL BE ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT-DRAWN COPPER. NO CONDUCTOR SMALLER THAT NO. 12 AWG SHALL BE USED, EXCEPT AS OTHERWISE NOTED.
22. WIRE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE 600 VOLT, TYPE THHN. WIRE FOR CONTROL CIRCUITS SHALL BE 600 VOLT, TYPE THHN, NO. 14 AWG, STRANDED. SERVICE CONDUCTORS AND FEEDERS SHALL BE TYPE XHHW. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID. NO. 8 AWG AND LARGER SHALL BE STRANDED.
23. ALL CONDUCTORS SHALL BE CAREFULLY HANDLED TO AVOID KINKS OR DAMAGE TO INSULATION. LUBRICATIONS SHALL BE USED TO FACILITATE WIRE PULLING. LUBRICANTS SHALL BE UL LISTED FOR USE WITH THE INSULATION SPECIFIED.
24. ALL EQUIPMENT AND MATERIALS SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE CONNECTICUT ELECTRICAL CODE, AND THE GROUNDING REQUIREMENTS OF VERIZON WIRELESS AND LUCENT.
25. DISCONNECT SWITCHES SHALL BE 480 OR 240 VOLT, HEAVY-DUTY, QUICK-MAKE, QUICK BREAK, VISIBLE BLADE, 2 POLE WITH EXTERNAL OPERATING HANDLE AND FULL COVER INTERLOCK. SWITCHES INSTALLED OUTSIDE SHALL BE NEMA TYPE 3R ENCLOSED.
26. WALL SWITCHES SHALL BE SINGLE POLE 3-WAY OR 4-WAY, INDICATING, TOGGLE-ACTION, FLUSH, QUIET TYPE, SPECIFICATION GRADE, RATED 20 AMPERE, 120-277 VOLT. COLOR AS DETERMINED BY ENGINEER.
27. GENERAL PURPOSE RECEPTACLES SHALL BE DUPLEX, 2 POLE, 3 WIRE, STRAIGHT BLADE, NYLON FACE, GROUNDING TYPE, 20 AMPERE, 125 VOLT, SPECIFICATION GRADE. COLOR AS DETERMINED BY ENGINEER.
28. PANELS SHALL BE FURNISHED AS DIRECTED BY THESE DRAWINGS WITH TYPED DIRECTORIES.
29. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC TYPE WITH RMS SYMMETRICAL INTERRUPTING RATING OF NOT LESS THAN 22,000 AMPERE FOR 240 VOLT BREAKERS. ENCLOSED BREAKERS SHALL HAVE PADLOCKING PROVISIONS AND EXTERNAL OPERATING HANDLE WITH FULL COVER INTERLOCK. BREAKERS SHALL BE 1" MODULES MINIMUM.
30. NAMEPLATES SHALL BE PROVIDED FOR ALL EQUIPMENT INDICATING VOLTAGE, PHASE, USE AND SOURCE OF ORIGIN. DEVICES SHALL BE LABELED INDICATING VOLTAGE AND BRANCH CIRCUIT. BRANCH CONDUCTORS SHALL BE LABELED INDICATING BRANCH CIRCUIT. FEEDER CONDUCTORS SHALL INDICATE PHASE.
31. ALL EXTERIOR CONDUCTOR/LUG TERMINALS SHALL HAVE AN ANTIOXIDANT APPLIED.
32. ALL SPRING TYPE WIRE CONDUCTORS USED IN EXTERIOR BOXES SHALL BE SILICON FILLED.
33. ELECTRICAL CONTRACTOR SHALL AS PART OF HIS WORK INCLUDE ALL FITTINGS, SLEEVES AND MINOR CUTTING REQUIRED FOR HIS WORK, INCLUDING FIRESTOPPING.
34. THE ELECTRICAL CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE HIS OWN, WHERE DIRECTED, STORAGE AND OFFICE SPACE.
35. FIVE COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
36. ELECTRICAL CONTRACTOR'S WORK SHALL INCLUDE ALL LABOR AND MATERIALS, SCAFFOLDING TOOL AND TRANSPORTATION NECESSARY FOR COMPLETE INSTALLATION.
37. ELECTRICAL CONTRACTOR TO FURNISH ENGINEER ONE SET OF MYLARS OF "AS BUILT" DRAWINGS.
38. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY POWER & LIGHTING AS REQ'D.

GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE TO BECOME AWARE OF THE EXISTING CONDITIONS.
2. BRANCH CIRCUIT RUNS 100 FT AND OVER SHALL BE #10 AWG CONDUCTORS.
3. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHT, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PLUMBING CONTRACTORS AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT, THE POWER WIRING, THE CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS REQUIRED BY THIS CONTRACTOR FOR COMPLETELY OPERATIVE HVAC AND PLUMBING SYSTEMS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. INTERRUPTIONS TO THE EXISTING ELECTRICAL SERVICE FOR SPLICING CONNECTIONS, RENOVATION OF EXISTING DISTRIBUTION, BRANCH CIRCUITS, INSTALLATION OF NEW ELECTRIC SERVICE, AND SHALL BE AS SHORT AS POSSIBLE, AND TO THE CONVENIENCE OF THE OWNER.
6. ALL CONDUIT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. NO INTERIOR HORIZONTAL CONDUIT BELOW 7'-6" AFF IN FINISHED SPACES.
7. ALL WIRING TO BE 3/4"C, 2#12 & 1#12 GROUND, UNLESS OTHERWISE NOTED.
8. NO BX OR ROMEX CABLE IS PERMITTED.
9. ALL WIRING DEVICES AND EQUIPMENT SHALL BE 20A SPECIFICATION GRADE AND UL LISTED.
10. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED.
11. ALL RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS.
12. ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE PVC SLEEVES.
13. ALL SWITCHES SHALL BE FORTY-EIGHT (48) INCHES AFF, UNLESS OTHERWISE NOTED.
14. ALL RECEPTACLES SHALL BE EIGHTEEN (18) INCHES AFF, UNLESS OTHERWISE NOTED.
15. ALL WIRING SHALL BE IN METAL RACEWAY & NO. 12 AWG COPPER MIN. UNLESS OTHERWISE NOTED.
16. WIRE COLOR SHALL BE PER STANDARD CODING BY PHASE.
17. FOR UTILITY BILLING, PLEASE SEND TO:
    VERIZON WIRELESS
    20 ALEXANDER DRIVE, 2nd FLOOR
    WALLINGFORD, CT 06492

GROUNDING GENERAL NOTES

1. ALL EXTERIOR CONDUCTORS SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. MINIMUM BEND RADIUS SHALL BE EIGHT (8) INCHES.
2. ALL CONNECTIONS TO HALO GROUND RING AND ALL CABLE TRAY JUMPERS SHALL BE #6 AWG, INSULATED, STRANDED, COPPER WIRE.
3. ALL WIRE-TO-WIRE CONNECTIONS SHALL BE THREE-CLAMP, C TAP COMPRESSION (T&B #54740 ORANGE OR EQUIVALENT). ALL GROUND BAR CONNECTIONS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS (T&B OR EQUIVALENT). ALL OTHER CONNECTIONS TO STEEL SURFACES SHALL USE LUG-TYPE CONNECTORS.
4. MECHANICALLY BOND ANTENNA MOUNTS WITH #2 AWG, BARE, STRANDED CONDUCTORS.
5. ALL GROUNDING WORK SHALL COMPLY WITH VERIZON WIRELESS STANDARDS.
6. CONNECT GROUND CONDUCTOR TO EXISTING GROUNDING SYSTEM. ATTACH TO WALLS, PARAPET, CABLE TRAY, ETC. WITH A CLAMPS AS NECESSARY. REMOVE PAINT, FIREPROOFING, MILL SCALE, ETC. TO ACHIEVE GOOD CAD WELD GROUND CONNECTION.
7. CONNECT TO HALO GROUND USING C-TAP (#54730).
8. CONNECT TO ENCLOSURES USING BLUE GROUND LUGS.



GENERAC 50kW NATURAL GAS GENERATOR (PART #SG050N)
OVERALL GENERATOR (ENCLOSURE) APPROXIMATE
DIMENSIONS: 94.8"L x 38.0"W x 57.5"H
APPROXIMATE MAX. IN-SERVICE WEIGHT: 2,887 lbs

GENERATOR DETAIL (1/E01)
SCALE: NONE

LEGEND

ELECTRICAL SYMBOLS

Symbol	Description
(M)	METER
⊠	GROUND ROD/TEST (OBSERVATION) WELL
⊗	GROUND ROD
▲	CADWELD TYPE CONNECTION
●	COMPRESSION TYPE CONNECTION
-----	GROUNDING WIRE
(detail)	REPRESENTS DETAIL NUMBER
▭	1'X4' SURFACE MTD. FLUORESCENT LIGHTING FIXTURE
	SELF CONTAINED EMERG. LIGHTING UNIT
S	20A-120V-1P TOGGLE SWITCH
	MAGNETIC DOOR SWITCH (DOOR JAMB TYPE)
	20A-120V QUADRAPLEX RECEPTACLE, GROUNDING TYPE, 2-CKT. NO.
WP/GFI	20A-120V DUPLEX RECEPTACLE, GROUNDING TYPE. WP = WEATHERPROOF, GFI = GROUND FAULT
TL	SIMPLEX RECEPTACLE, GROUNDING TYPE. TL = TWIST LOCK
(J)	JUNCTION BOX
	PANELBOARD "P1"
*	MOTOR - NUMERAL DENOTES HORSEPOWER
	WEATHER PROOF DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH - "3R" & "1" - NEMA ENCLOSURE
*	THERMOSTAT — *T_H - HI TEMPERATURE ALARM THERMOSTAT
*	HUMIDISTAT — *$H_{H/L}$ - HI/LO HUMIDITY ALARM HUMIDISTAT
	COMBINATION SMOKE/HEAT DETECTOR WITH MINI HORN SIMPLEX CAT.#2098-9806 WITH FORM A & C CONTACTS
P1-2	HOMERUN TO PANEL (FURNISH & INSTALLED BY MECHANICAL)
	SURGE ARRESTOR - JOSLYN CAT. NO. 1456-80
AFF	ABOVE FINISHED FLOOR
*	MOTORIZED DAMPER
	EXPOSED CONDUIT 3#12-3/4"C.
(ATC)	ALARM TERMINAL CABINET

*EQUIPMENT FURNISHED AND INSTALLED BY OTHERS AND WIRED BY THIS CONTRACTOR

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
GPS	GLOBAL POSITIONING SYSTEM
PCS	PERSONAL COMMUNICATION SYSTEM
RWY	RACEWAY
TYP.	TYPICAL
RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING
DWG	DRAWING
EMT	INTERIOR GROUND RING (HALO)
GEN	GENERATOR
GR	GROWTH
CIGBE	COAX GROUND BAR EXTERNAL
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER GROUND BAR
PVC	RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
EBH	ETHERNET BACK HAUL

CLIENT:
verizon✓

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR — DATE

DRAWING SCALE NOTE:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

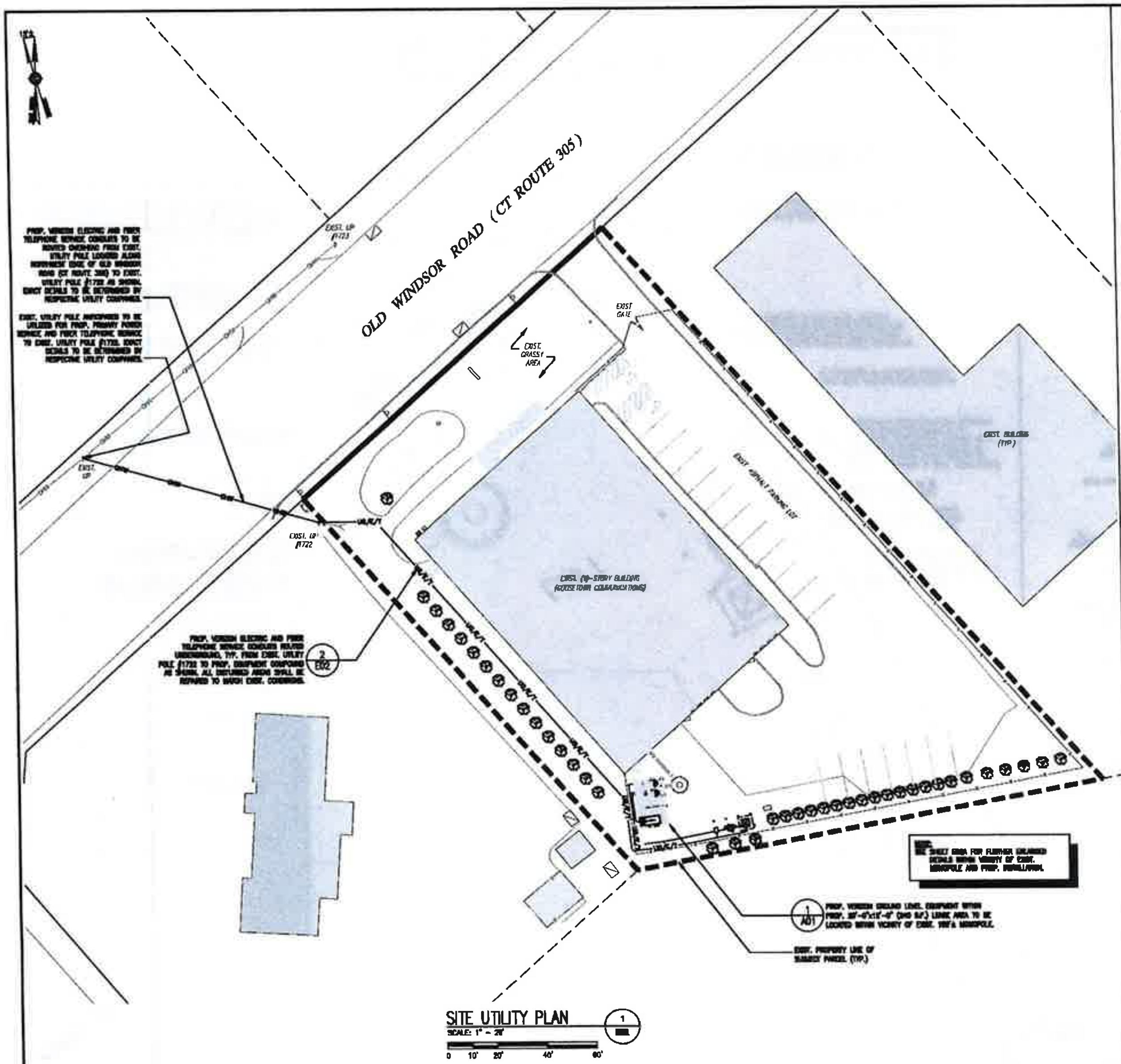
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/26/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

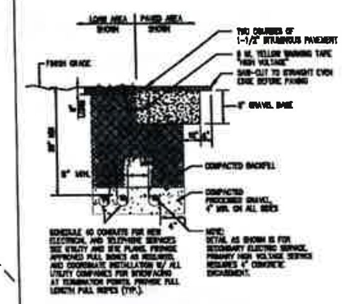
DRAWING TITLE:
ELECTRICAL SPECIFICATIONS AND NOTES

DRAWING NO.:
E01

SCALE: AS SHOWN
CEA PROJECT NO.: 88210.413
3/28/23



SITE UTILITY PLAN (1)
SCALE: 1" = 20'



TYPICAL BURIED CONDUIT DETAIL (2)
SCALE: NONE

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR | DATE

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3	REVISED PER (7/20/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

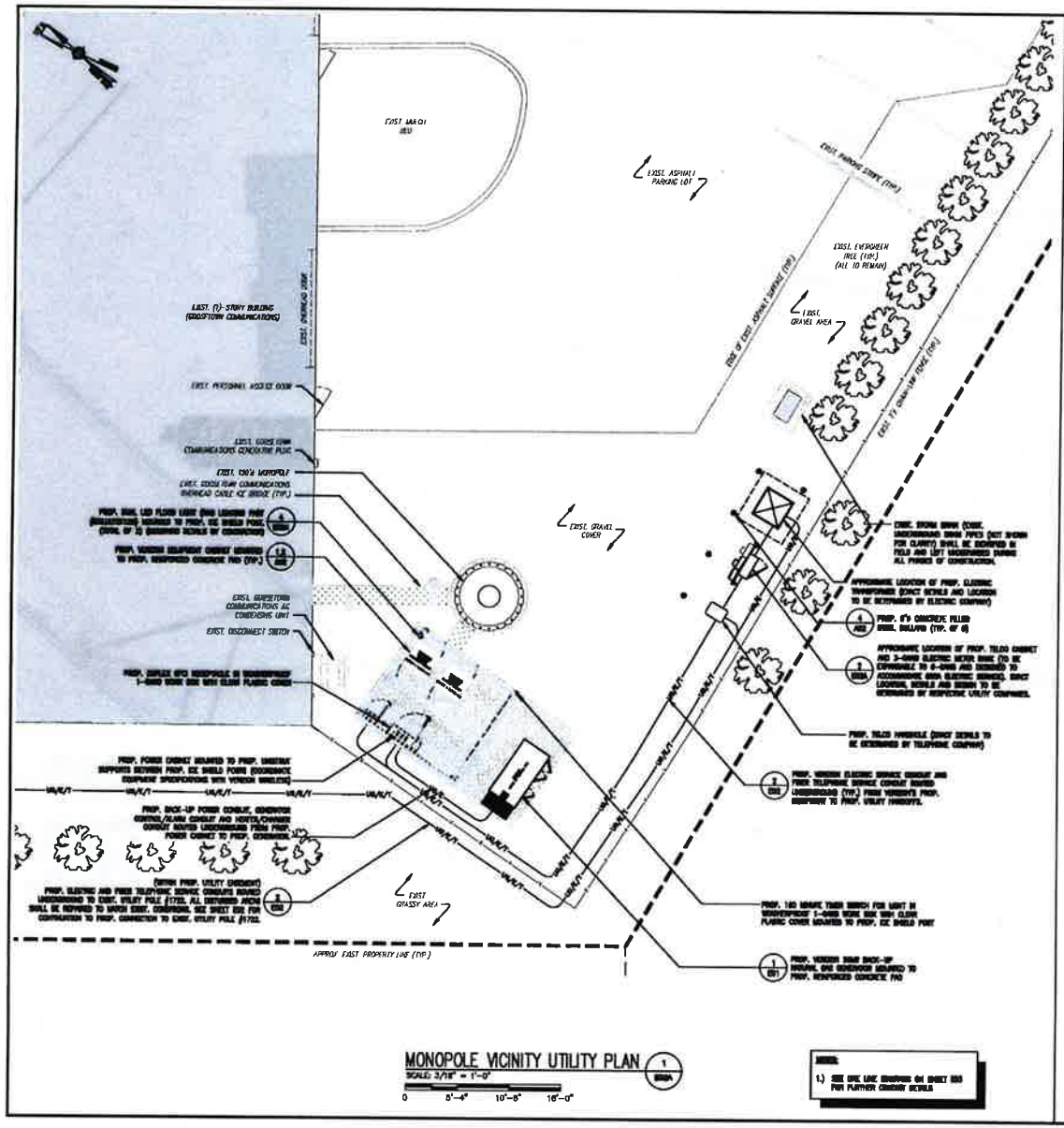
DRAWING TITLE:

SITE UTILITY PLAN
& DETAILS

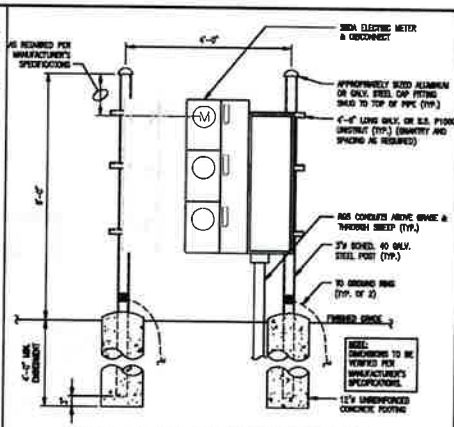
DRAWING NO:

E02

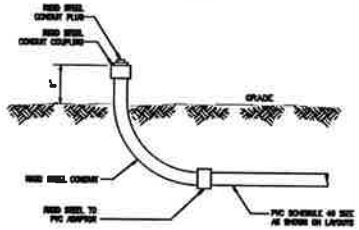
SCALE: AS NOTED
98210.413
3/28/23



MONOPOLE VICINITY UTILITY PLAN (1 SHEET E03A)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"



ELECTRIC METER UNISTRUT RACK (3 SHEET E03A)
SCALE: 3/4"=1'-0"
0 1'-4" 2'-8" 4'-0"



TYPICAL CONDUIT STUB-UP DETAIL (3 SHEET E03A)
SCALE: NONE

TYPICAL LED FLOOD LIGHT DETAIL (4 SHEET E03A)
SCALE: N.T.S.

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

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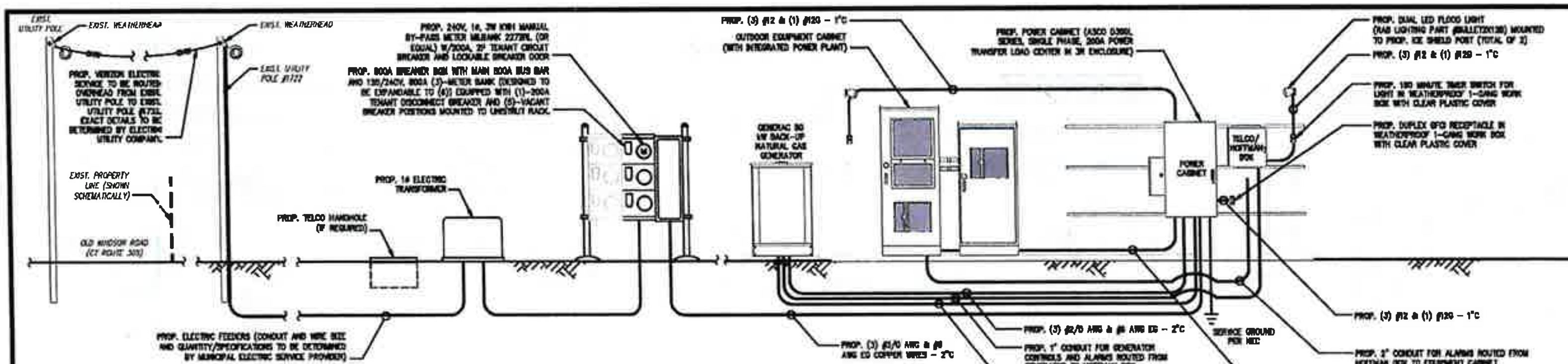
3	REVISED PER (7/28/22) NYDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

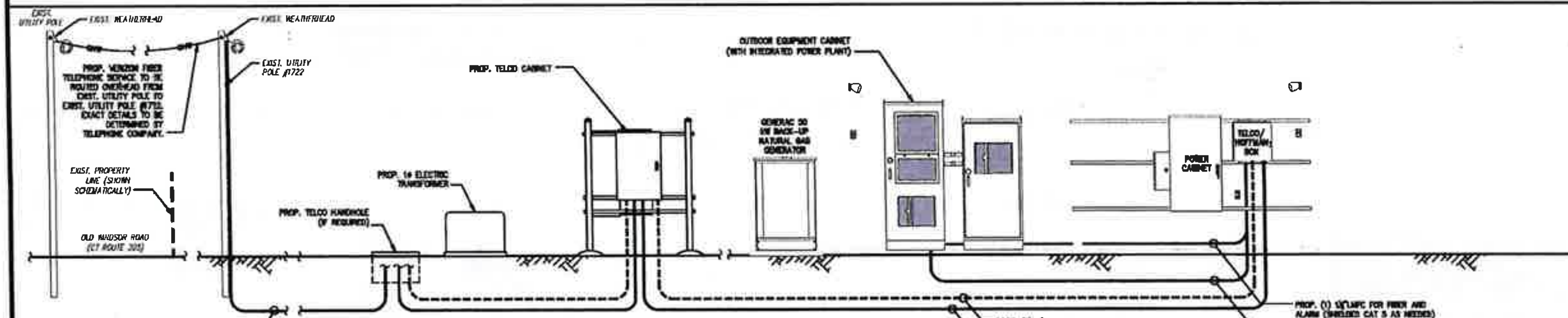
DRAWING TITLE:
MONOPOLE VICINITY UTILITY PLAN & DETAILS

DRAWING NO:
E02A

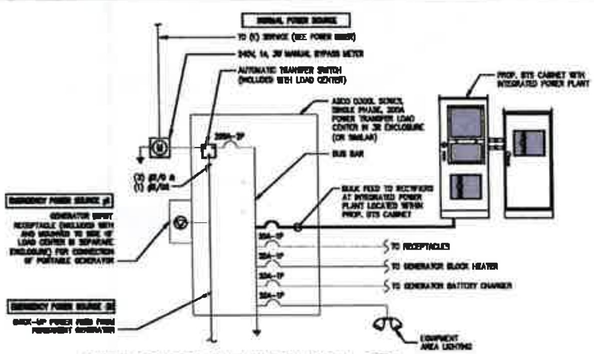
SCALE:	DRAWN BY:	VZW PROJECT NO.:
AS SHOWN		
SITE PROJECT NO.:	ORIGINAL ISSUE DATE:	VZW LOCATION CODE:
06210.413	3/28/23	



ELECTRICAL ONE LINE DIAGRAM (1E / E03)
SCALE: NOT TO SCALE



TELCO/FIBER ONE LINE DIAGRAM (1T / E03)
SCALE: NOT TO SCALE



POWER SOURCE ONE LINE DIAGRAM (2 / E03)
SCALE: NOT TO SCALE

ELECTRICAL PANEL SCHEDULE

ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE — 65,000 A.I.C. NEMA 3R

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	RECTIFIER #1	30	30	FUTURE RECTIFIER	2
3					4
5	RECTIFIER #2	30	30	FUTURE RECTIFIER	6
7					8
9	RECTIFIER #3	30	20	PAD LIGHTING	10
11			-	BLANK	12
13	RECTIFIER #4	30	-	BLANK	14
15			-	BLANK	16
17	GFCI RECEPTACLE/LIGHT	20	-	BLANK	18
19	GENERATOR BLOCK HEATER	20	-	BLANK	20
21	GENERATOR BATTERY CHARGER	20	-	BLANK	22
23	BLANK	-	-	BLANK	24
25	BLANK	-	-	BLANK	26
27	BLANK	-	-	BLANK	28
29	BLANK	-	-	BLANK	30

ELECTRICAL PANEL SCHEDULE (3 / E03)
SCALE: NTS

ONE-LINE DIAGRAM NOTES:

1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS INSIDE AND OUT.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

3) ALL CONDUIT ROUTING SHOWN ON THESE DIAGRAMS IS SCHEMATIC IN NATURE AND INTENDED TO CONVEY GENERAL INTENT ONLY.

4) ALL PROPOSED UTILITY DESIGN ELEMENTS SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN TO BE PROVIDED BY UTILITY PROVIDERS AND VERIZON WIRELESS. CONTRACTOR SHALL OBTAIN A COPY OF THE FINAL UTILITY DESIGN BY UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK.

UTILITY CONTACTS

ELECTRICAL: EVERSOURCE ENERGY
247 STATION DRIVE, SE 210
WESTWOOD, MA 02090
(781) 441-3810

TELEPHONE: VERIZON
185 FRANKLIN STREET
BOSTON, MA 02107
(800) 941-9900

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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3	REVISED PER (7/26/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

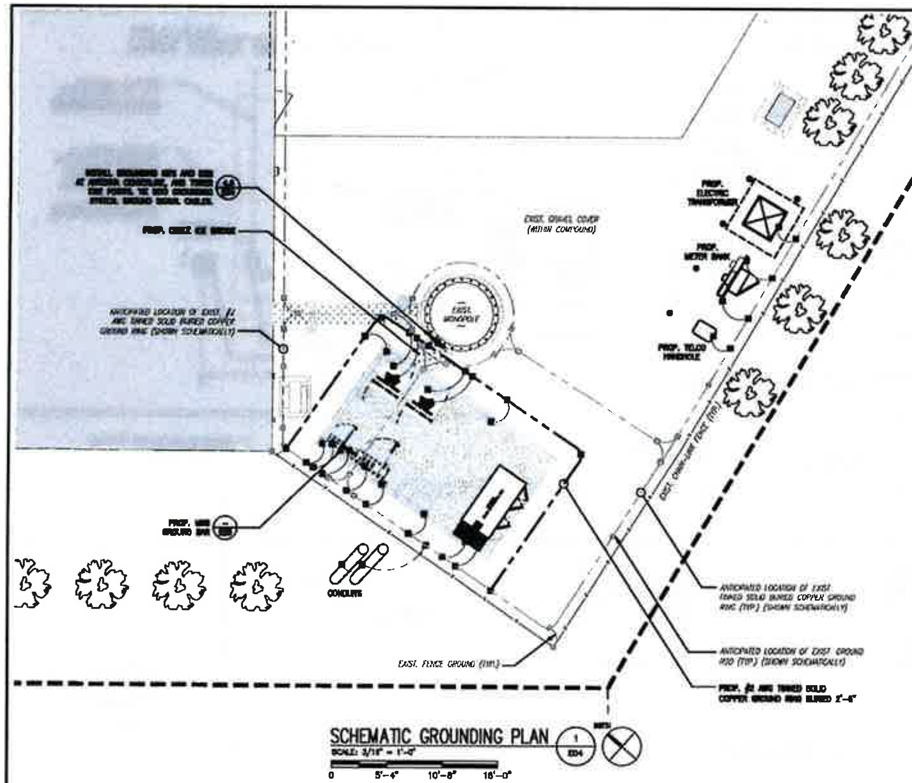
DRAWING TITLE:

ELECTRICAL DIAGRAMS & DETAILS

DRAWING NO:

E03

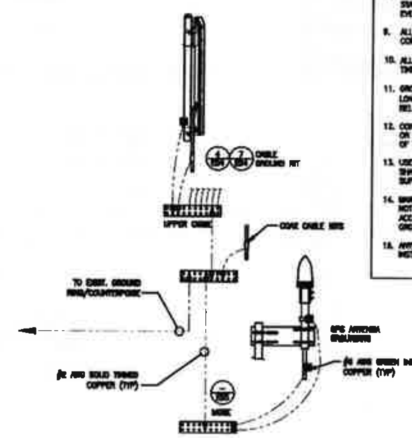
SCALE: AS SHOWN
CEA PROJECT NO.: 66310.413
ORIGINAL ISSUE DATE: 3/28/23



SCHEMATIC GROUNDING PLAN (1/E04)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

GROUNDING LEGEND

- ■ EXOTHERMIC GROUND
- • GROUND ROD
- ◎ TEST WELL
- PROP. #2 AWG EQUIPMENT GROUNDING
- PROP. GROUND HALO
- EXIST. SITE GROUNDING (SHOWN SCHEMATICALLY)



ANTENNA GROUNDING RISER DIAGRAM (2/E04)
SCALE: NOT TO SCALE

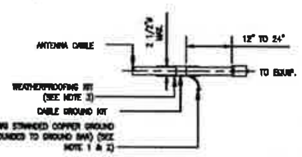
ELECTRICAL AND GROUNDING NOTES:

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1Φ, 60 Hz.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

GROUNDING

5. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"Ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
12. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
15. ANTENNA GROUND KITS SHALL BE FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.

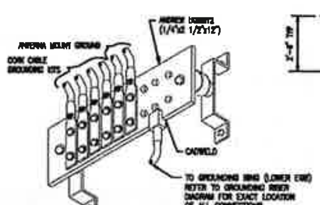


CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

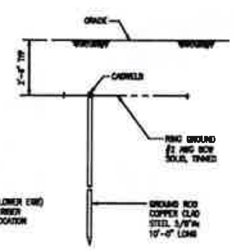
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

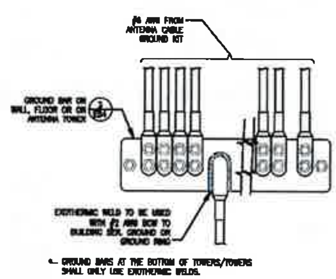
DETAIL (3/E04)
SCALE: NOT TO SCALE



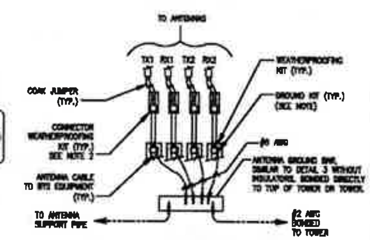
GROUND BAR (EGB) (4/E04)
SCALE: NOT TO SCALE



GROUND ROD (5/E04)
SCALE: NOT TO SCALE



INSTALLATION OF GROUND WIRE TO GROUND BAR
DETAIL (6/E04)
SCALE: NOT TO SCALE



CONNECTION OF GROUND WIRE TO GROUNDING BAR, TOWER
DETAIL (7/E04)
SCALE: NOT TO SCALE

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR — DATE

DRAWING SCALE NOTE:

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/26/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

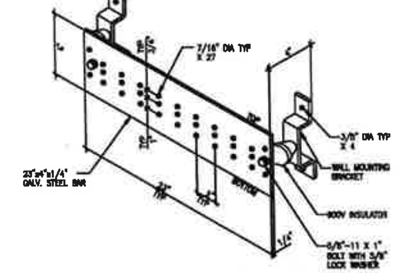
DRAWING TITLE:

SCHEMATIC GROUNDING PLAN & DETAILS

DRAWING NO:

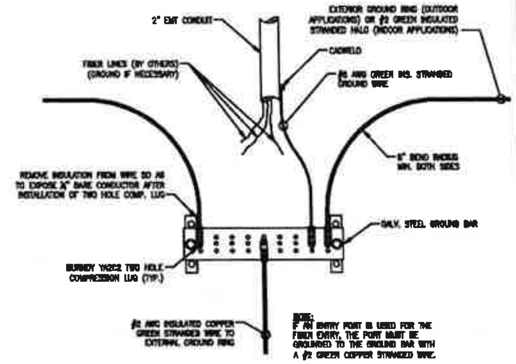
E04

SCALE: AS SHOWN
CEA PROJECT NO.: 86210.413
3/28/23



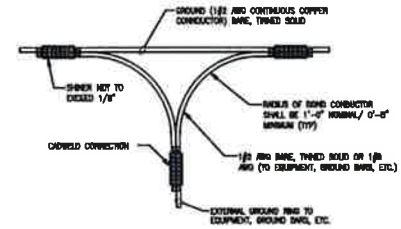
1. SURFACE PREPARATION: ALL CONNECTIONS MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE MADE BARE TO ENSURE PROPER CONTACT. NO WASHERS SHALL BE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS SHALL HAVE AN ANTI-OXIDANT AGENT APPLIED PRIOR TO INSTALLATION.
2. BUSS PREPARATION: ALL GALV. STEEL BUSSES SHALL BE CLEANED, POLISHED AND AN ANTI-OXIDANT APPLIED. NO FINGERPRINTS OR DISCOLORED STEEL WILL BE PERMITTED.
3. TERMINATIONS: ALL EQUIPMENT TERMINATIONS SHALL BE MADE WITH A BURNDY TWO HOLE COMPRESSION LUG WITH 10-24x3/4" LONG S.S. SCREWS, NUTS AND LOCK WASHERS. ALL BUSS TERMINATIONS SHALL BE MADE WITH A CAD-WELD OR BURNDY YC2C2 2 HOLE COMPRESSION LUG OR EQUAL. ALL INTERIOR HALO ATTACHMENTS SHALL BE MADE USING A BURNDY YC2C2 COMPRESSION LUG.

TYP. INTERIOR & EXTERIOR GROUND BAR
SCALE: N.T.S.



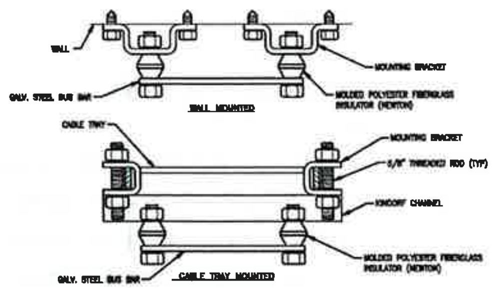
NOTE:
IF AN ENTRY PORT IS USED FOR THE FIBER ENTRY, THE PORT MUST BE GROUNDED TO THE GROUND BAR WITH A #2 GREEN COPPER STRANDED WIRE.

INTERIOR GROUNDING AT TELCO ENTRY
SCALE: N.T.S.

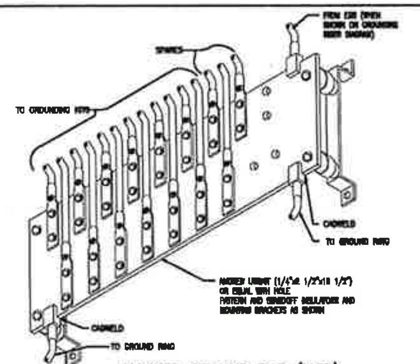


NOTE: ALL CONNECTION TO GROUND SHALL BE NON-DIRECTIONAL

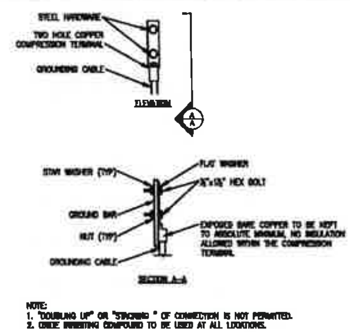
NON-DIRECTIONAL SPLICE
SCALE: N.T.S.



BUS BAR MOUNTING
SCALE: N.T.S.

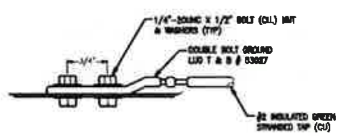


MASTER GROUND BAR (MGB)
SCALE: NOT TO SCALE

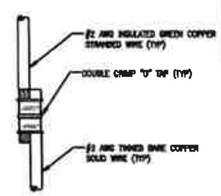


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

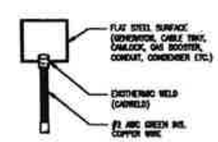
TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



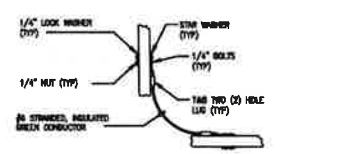
TYPICAL EQUIPMENT GROUND CONNECTION
SCALE: N.T.S.



TYPICAL GROUND CONNECTION SPLICE DETAIL
SCALE: N.T.S.



TYP. CADWELD #2 GREEN TO FLAT STEEL SURFACE
SCALE: NOT TO SCALE



CABLE TRAY GROUNDING
SCALE: N.T.S.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
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MARLBOROUGH, MA 01752
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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

GROUNDING DETAILS

DRAWING NO:

E05

SCALE: AS SHOWN
CEA PROJECT NO.: 96210.413
3/28/23

verizon fuze | RFDS

NORTHEAST > North East > New England > New England West > BLOOMFIELD 5 CT

RF Submit by: Brauer, Mark - mark.brauer2@verizonwireless.com - 7/28/2023, 7:36:38 AM

EE Submit by: , - -

Project Details

FUZE Project ID: 16433987
Project Name: BLOOMFIELD 5 CT
Project Alt Name: BLOOMFIELD 5 CT - MKT 66 - MC
Project Type: Initial Build
Modification Type:
Designed Sector Carrier 4G: 18
Designed Sector Carrier 5G: 3
Additional Sector Carrier 4G: N/A
Additional Sector Carrier 5G: N/A
FP Solution Type & Tech Type: MCR;4G_700,4G_850,4G_AWS,4G_CBRS,4G_PCS,5G_L-Sub6
Carrier Aggregation: false
MPT Id:
eCIP-0: false
Suffix:

Location Information

Site ID: 616946037
E-NodeB ID: 068538,0689551
MDG Location ID: 5000920838
PSLC: 783866
Switch Name: Windsor 1
Tower Owner:
Tower Type: Monopole
Site Type: MACRO
Site Sub Type: TRADITIONAL
Street Address: 7A Old Windsor Road
City: Bloomgfield
State: CT
Zip Code: 06002
County: Hartford
Latitude: 41.855561 / 41° 51' 20.0196" N
Longitude: -72.704708 / 72° 42' 16.9488" W

RFDS Project Scope: New build monopole
Update 01/23/2023 - Antenna centerline updated per LEs REV 0 dated 01/20/23
Update 04/13/2023 - corrected antenna quantity
Update 07/28/2023 - Update to latest RRHs

Antenna Summary

Added

700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
					5G	Samsung	MT6413-77A	137	138.2	70(0444) 190(0445) 310(0446)		false	PHYSICAL	3	
LTE	LTE 5G	LTE				CommScope	NHH-65B-R2B	137	140	70(01) 190(02) 310(03) 70(0444) 190(0445) 310(0446)		true	PHYSICAL	3	000000001900056292
			LTE	LTE		CommScope	NHHSS-65B-R2BT4	137	140	70(01) 190(02) 310(03) 70(19) 190(20) 310(21)		true	PHYSICAL	3	000000001900055945

Removed

700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Retained

700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Added: 9 **Removed:** 0 **Retained:** 0

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower			LTE	LTE			Samsung	B2/B66A RRH ORAN (RF4439d-25A)			PHYSICAL	3	
RRU	Tower						5G	Samsung	MT6413-77A			PHYSICAL	0	
RRU	Tower	LTE	LTE 5G					Samsung	RF4461d-13A			PHYSICAL	3	
RRU	Tower					LTE		Samsung	RT4423-48A			PHYSICAL	3	
Hybrid Cable	Tower							N/A	6x12 Hybriflex			PHYSICAL	2	
Mount	Tower							Commscope	BASMNT-SBS-1-2			PHYSICAL	3	
OVP Box	Tower							N/A	12 OVP			PHYSICAL	1	

Removed

Equipment Type	Location	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Service Info

CBRS 3_5 GHz

		0002	
Sector	**19**	**20**	**21**
Azimuth	70	190	310
Cell / ENode B ID	068538	068538	068538
Antenna Model	NHHSS-65B-R2BT4	NHHSS-65B-R2BT4	NHHSS-65B-R2BT4
Antenna Make	CommScope	CommScope	CommScope
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	4	4	4
Tip Height	140	140	140
Regulatory Power	34.98	34.98	34.98
DLEARFCN	55790	55790	55790
Channel Bandwidth(MHz)	10	10	10
Total ERP (W)	47.97	47.97	47.97
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	RT4423-48A	RT4423-48A	RT4423-48A
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	15085554	15085555	15085556
Source	ATOLL_API	ATOLL_API	ATOLL_API

700 MHz LTE

		0002	
Sector	**01**	**02**	**03**
Azimuth	70	190	310
Cell / ENode B ID	068538	068538	068538
Antenna Model	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	CommScope	CommScope	CommScope
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	4	4	4
Tip Height	140	140	140
Regulatory Power	73.41	73.41	73.41
DLEARFCN	5230	5230	5230
Channel Bandwidth(MHz)	10	10	10
Total ERP (W)	660.69	660.69	660.69
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	RF4461d-13A	RF4461d-13A	RF4461d-13A
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	15085545	15085548	15085551
Source	ATOLL_API	ATOLL_API	ATOLL_API

850 MHz LTE

		0002	
Sector	01	02	03
Azimuth	70	190	310
Cell / ENode B ID	068538	068538	068538
Antenna Model	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	CommScope	CommScope	CommScope
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	4	4	4
Tip Height	140	140	140
Regulatory Power	317.55	317.55	317.55
DLEARFCN	2450	2450	2450
Channel Bandwidth(MHz)	10	10	10
Total ERP (W)	714.5	714.5	714.5
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	RF4461d-13A	RF4461d-13A	RF4461d-13A
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	15085542	15085543	15085544
Source	ATOLL_API	ATOLL_API	ATOLL_API

850 MHz 5GNR

		0002	
Sector	0444	0445	0446
Azimuth	70	190	310
Cell / ENode B ID	0689551	0689551	0689551
Antenna Model	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	CommScope	CommScope	CommScope
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	4	4	4
Tip Height	140	140	140
Regulatory Power	317.55	317.55	317.55
DLEARFCN	2450	2450	2450
Channel Bandwidth(MHz)	10	10	10
Total ERP (W)	714.5	714.5	714.5
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	RF4461d-13A	RF4461d-13A	RF4461d-13A
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	15085542	15085543	15085544
Source	ATOLL_API	ATOLL_API	ATOLL_API

1900 MHz LTE

		0002	
Sector	01	02	03
Azimuth	70	190	310
Cell / ENode B ID	068538	068538	068538
Antenna Model	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B
Antenna Make	CommScope	CommScope	CommScope
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	2	2	2
Tip Height	140	140	140
Regulatory Power	254.54	254.54	254.54
DLEARFCN	1050	1050	1050
Channel Bandwidth(MHz)	10	10	10
Total ERP (W)	1396.37	1396.37	1396.37
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	15085546	15085549	15085552
Source	ATOLL_API	ATOLL_API	ATOLL_API

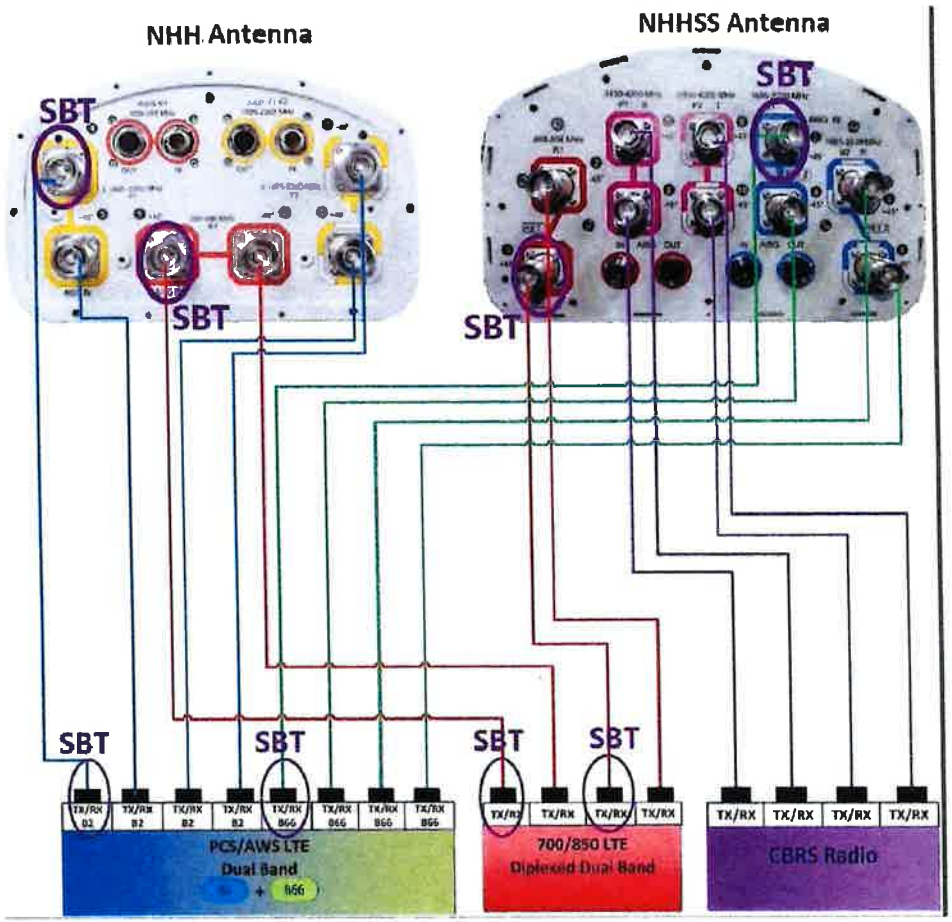
2100 MHz LTE

		0002	
Sector	01	02	03
Azimuth	70	190	310
Cell / ENode B ID	068538	068538	068538
Antenna Model	NHHSS-65B-R2BT4	NHHSS-65B-R2BT4	NHHSS-65B-R2BT4
Antenna Make	CommScope	CommScope	CommScope
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	2	2	2
Tip Height	140	140	140
Regulatory Power	138.91	138.91	138.91
DLEARFCN	2050	2050	2050
Channel Bandwidth(MHz)	20	20	20
Total ERP (W)	1524.05	1524.05	1524.05
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	15085547	15085550	15085553
Source	ATOLL_API	ATOLL_API	ATOLL_API

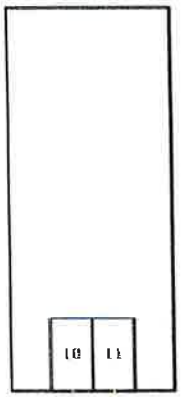
nL-Sub6

Sector	0444	0445	0446
Azimuth	70	190	310
Cell / ENode B ID	0689551	0689551	0689551
Antenna Model	MT6413-77A	MT6413-77A	MT6413-77A
Antenna Make	Samsung	Samsung	Samsung
Antenna Centerline(Ft)	137	137	137
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	-1	-1	-1
Tip Height	138.2	138.2	138.2
Regulatory Power	746.98	746.98	746.98
DLEARFCN	650006	650006	650006
Channel Bandwidth(MHz)	100	100	100
Total ERP (W)	21627.19	21627.19	21627.19
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	MT6413-77A	MT6413-77A	MT6413-77A
Number of Tx, Rx Lines	2,2	2,2	2,2
Position			
Transmitter Id	15085557	15085558	15085559
Source	ATOLL_API	ATOLL_API	ATOLL_API

Service Comments


NHH Antenna
NHHSS Antenna
SBT
SBT
SBT
SBT
SBT
SBT
SBT
SBT
TX/RX
B2
B66
PCS/AWS LTE
Dual Band
+
700/850 LTE
Diplexed Dual Band
CBRS Radio

Sub 6

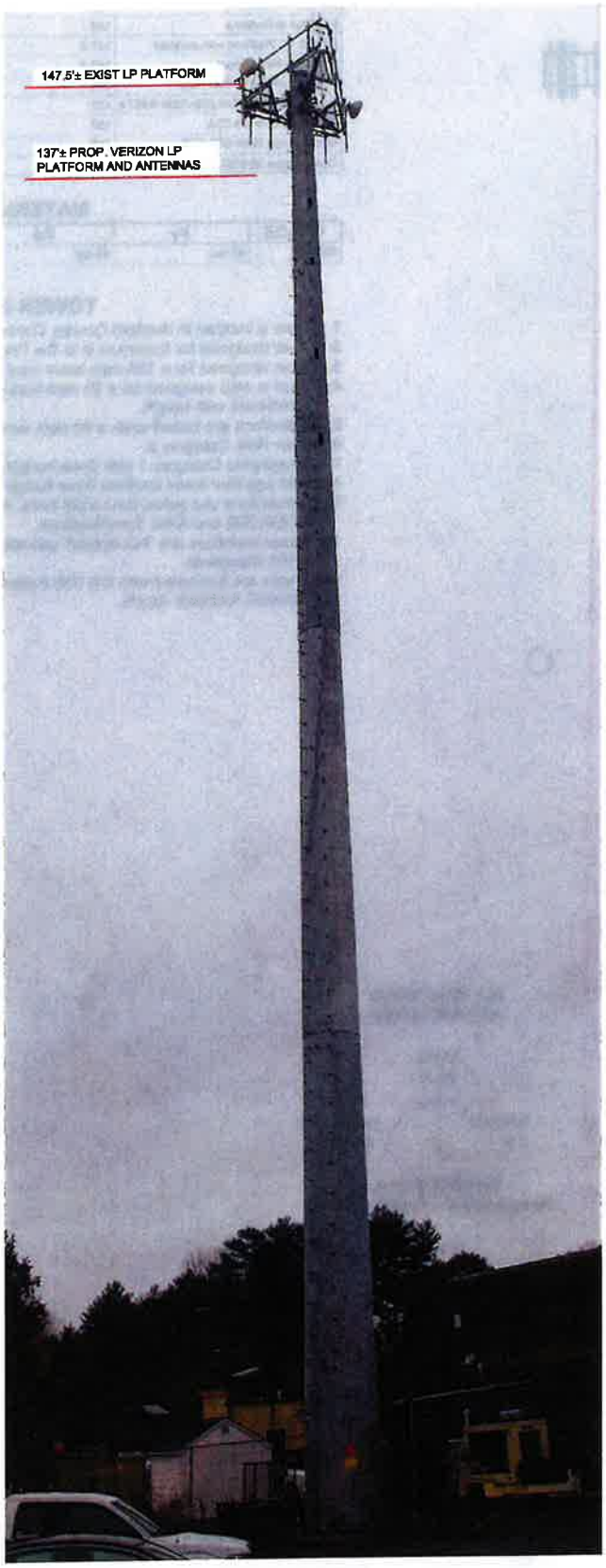


Appendix C – Calculations

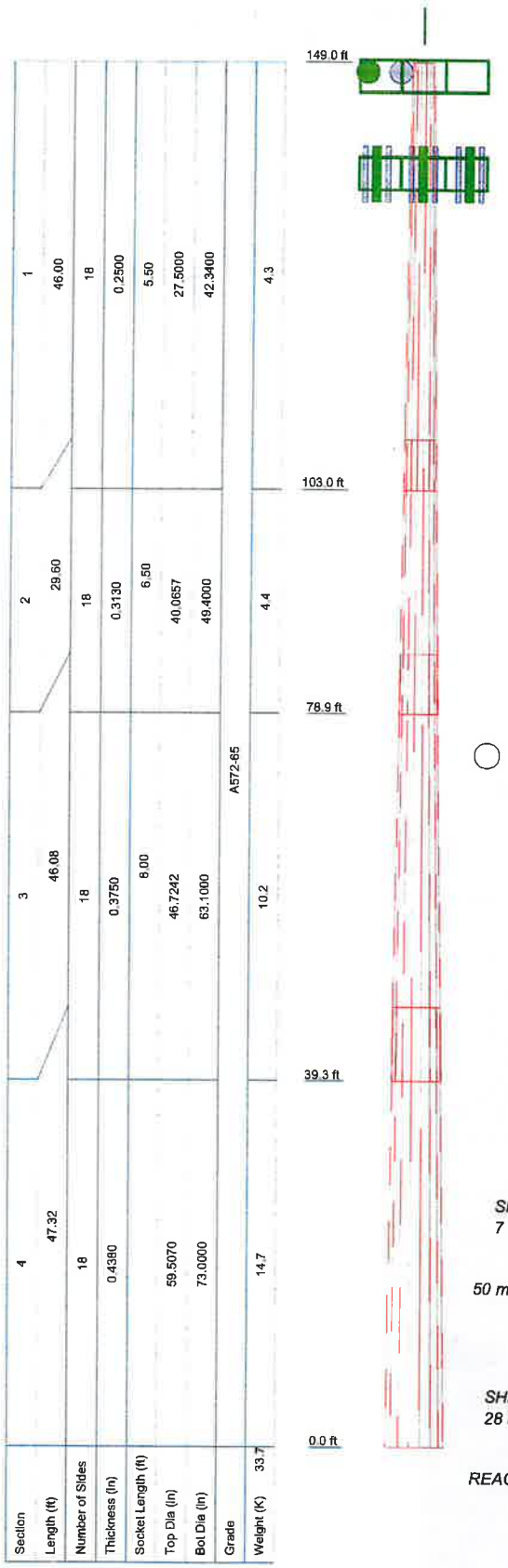
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural Land Surveying

201 BOSTON POST ROAD WEST
MARLBOROUGH, MA 01752
P. (508) 481-7400
F. (508) 481-7406
www.chappellengineering.com

TITLE: 7A Old Windsor Rd, Bloomfield, CT 06002			PAGE:
PROJECT #: Bloomfield 5 CT New Site Build (96210.413)			
DATE: March 14, 2023	BY: CJS	CHK: JMF	



TOWER PICTURE 2 SDC
SCALE: N.T.S.



ALL REACTIONS ARE FACTORED

AXIAL 69 K
SHEAR 7 K
MOMENT 594 kip-ft
TORQUE 0 kip-ft
50 mph WIND - 1.2000 in ICE

AXIAL 49 K
SHEAR 28 K
MOMENT 2512 kip-ft
TORQUE 2 kip-ft
REACTIONS - 135 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' Dipole Antenna	156	Samsung MT6413-77A	137
Lightning Rod	153	Commscope NHH-65B-R2B	137
2.5' Dish w/Radome	148	Commscope NHHSS-65B-R2B-R2BT4	137
2.5' Dish w/Radome	148	Samsung MT6413-77A	137
PiROD 15' Platform with handrail	147.5	(3) Samsung RF4461d-13A	137
Universal Ring Mount	143.5	(3) Samsung RF4439d-25A B25/B66A	137
Commscope NHH-65B-R2B	137	(3) Samsung RT4423-48A	137
Commscope NHHSS-65B-R2B-R2BT4	137	Rayco Fiber Junction Box	137
Samsung MT6413-77A	137	PiROD 15' Platform with handrail	137
Commscope NHH-65B-R2B	137	Universal Ring Mount	133
Commscope NHHSS-65B-R2B-R2BT4	137		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 135 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.20 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Weld together tower sections have flange connections.
9. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
10. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
11. Welds are fabricated with ER-70S-6 electrodes.
12. TOWER RATING: 42.9%

Chappell Engineering Assoc. LLC
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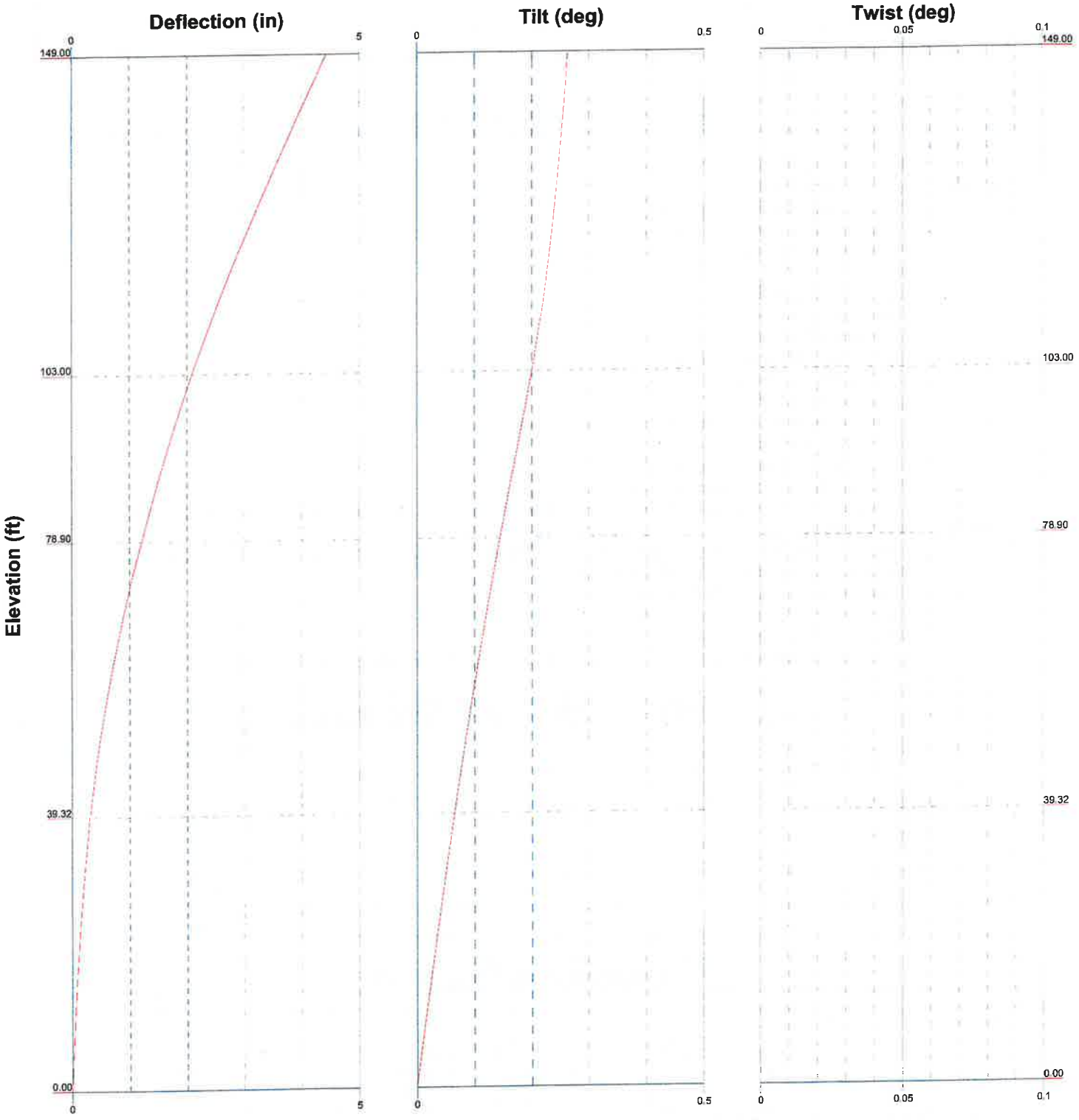
Marlborough, MA 01752
Phone: (508) 481-7400
FAX: (508) 481-7406

Job: Bloomfield 5 CT 96210.413			
Project: 7A Old Windsor Rd, Bloomfield CT 06002			
Client: Verizon NSB 96210.413	Drawn by: CJS	App'd:	
Code: TIA-222-H	Date: 09/05/23	Scale: NTS	
Path:		Dwg No. E-1	

TIA-222-H - Service - 60 mph

Maximum Values



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Job: Bloomfield 5 CT 96210.413			
Project: 7A Old Windsor Rd, Bloomfield CT 06002			
Client: Verizon NSB 96210.413	Drawn by: CJS	App'd:	
Code: TIA-222-H	Date: 09/05/23	Scale: NTS	
Path:		Dwg No. E-5	

tnxTower	Job	Page
	Bloomfield 5 CT 96210.413	1 of 7
Chappell Engineering Assoc. LLC 201 Boston Post Road West Marlborough, MA 01752 Phone: (508) 481-7400 FAX: (508) 481-7406	Project 7A Old Windsor Rd, Bloomfield CT 06002	Date 12:31:54 09/05/23
	Client Verizon NSB 96210.413	Designed by CJS

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Tower base elevation above sea level: 0.00 ft.
Wind speed of 135 mph.
Risk Category II.
Exposure Category B.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.2000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	149.00-103.00	46.00	5.50	18	27.5000	42.3400	0.2500	1.0000	A572-65 (65 ksi)
L2	103.00-78.90	29.60	6.50	18	40.0657	49.4000	0.3130	1.2520	A572-65 (65 ksi)
L3	78.90-39.32	46.08	8.00	18	46.7242	63.1000	0.3750	1.5000	A572-65 (65 ksi)
L4	39.32-0.00	47.32		18	59.5070	73.0000	0.4380	1.7520	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	27.8857	21.6229	2028.5415	9.6738	13.9700	145.2070	4059.7522	10.8135	4.4000	17.6
	42.9546	33.3984	7475.1715	14.9420	21.5087	347.5414	14960.1789	16.7024	7.0118	28.047
L2	42.3966	39.4927	7884.7337	14.1122	20.3534	387.3924	15779.8424	19.7501	6.5007	20.769
	50.1138	48.7661	14845.2728	17.4259	25.0952	591.5583	29710.0793	24.3877	8.1435	26.018
L3	49.7328	55.1672	14972.8045	16.4540	23.7359	630.8082	29965.3107	27.5888	7.5635	20.169
	64.0156	74.6584	37110.5722	22.2674	32.0548	1157.7228	74269.9754	37.3363	10.4456	27.855
L4	62.6737	82.1184	36199.0344	20.9695	30.2295	1197.4719	72445.7004	41.0670	9.7023	22.151
	74.0586	100.8766	67103.6613	25.7595	37.0840	1809.5044	134295.619	50.4479	12.0771	27.573

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
							3			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 149.00-103.00				1	1	1			
L2 103.00-78.90				1	1	1			
L3 78.90-39.32				1	1	1			
L4 39.32-0.00				1	1	1			

Monopole Base Plate Data

Base Plate Data

Base plate is square	
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	1.7500 in
Number of bolts	24
Embedment length	57.0000 in
f'_c	5 ksi
Grout space	2.0000 in
Base plate grade	A572-50
Base plate thickness	2.2500 in
Bolt circle diameter	80.0000 in
Outer diameter	84.3000 in
Inner diameter	54.7500 in
Base plate type	Plain Plate

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
7/8	A	No	Yes	Inside Pole	149.00 - 0.00	3	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54
							2" Ice	0.00	0.54
Step Bolts	B	No	Yes	CaAa (Out Of Face)	149.00 - 0.00	1	No Ice	0.03	0.50
							1/2" Ice	0.13	1.00
							1" Ice	0.23	1.50
							2" Ice	0.43	2.50
RFS Hybriflex Cable 1.25in	B	No	Yes	Inside Pole	138.00 - 0.00	2	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30

tnxTower	Job	Page
	Bloomfield 5 CT 96210.413	3 of 7
Chappell Engineering Assoc. LLC 201 Boston Post Road West Marlborough, MA 01752 Phone: (508) 481-7400 FAX: (508) 481-7406	Project 7A Old Windsor Rd, Bloomfield CT 06002	Date 12:31:54 09/05/23
	Client Verizon NSB 96210.413	Designed by CJS

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
12' Dipole Antenna	C	None		0.0000	156.00	No Ice	2.25	2.25	0.04
						1/2" Ice	3.94	3.94	0.06
						1" Ice	5.63	5.63	0.08
						2" Ice	9.01	9.01	0.12
Lightning Rod	C	None		0.0000	153.00	No Ice	0.38	0.38	0.01
						1/2" Ice	0.99	0.99	0.01
						1" Ice	1.60	1.60	0.01
						2" Ice	2.82	2.82	0.01
PiROD 15' Platform with handrail	C	None		0.0000	147.50	No Ice	33.80	33.80	2.04
						1/2" Ice	43.60	43.60	2.75
						1" Ice	53.40	53.40	3.45
						2" Ice	73.00	73.00	4.86
Universal Ring Mount	C	None		0.0000	143.50	No Ice	2.50	2.50	0.42
						1/2" Ice	3.00	3.00	0.60
						1" Ice	3.50	3.50	0.78
						2" Ice	4.50	4.50	1.14
PiROD 15' Platform with handrail	C	None		0.0000	137.00	No Ice	33.80	33.80	2.04
						1/2" Ice	43.60	43.60	2.75
						1" Ice	53.40	53.40	3.45
						2" Ice	73.00	73.00	4.86
Universal Ring Mount	C	None		0.0000	133.00	No Ice	2.50	2.50	0.42
						1/2" Ice	3.00	3.00	0.60
						1" Ice	3.50	3.50	0.78
						2" Ice	4.50	4.50	1.14
Commscope NHH-65B-R2B	A	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.44	0.05
						1/2" Ice	8.53	5.94	0.10
						1" Ice	9.00	6.47	0.16
						2" Ice	9.95	7.57	0.30
Commscope NHHSS-65B-R2B-R2BT4	A	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.34	0.05
						1/2" Ice	8.53	5.79	0.10
						1" Ice	9.00	6.26	0.16
						2" Ice	9.95	7.20	0.29
Samsung MT6413-77A	A	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	3.81	1.46	0.06
						1/2" Ice	4.06	1.65	0.08
						1" Ice	4.32	1.84	0.11
						2" Ice	4.86	2.26	0.18
Commscope NHH-65B-R2B	B	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.44	0.05
						1/2" Ice	8.53	5.94	0.10
						1" Ice	9.00	6.47	0.16
						2" Ice	9.95	7.57	0.30
Commscope NHHSS-65B-R2B-R2BT4	B	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.34	0.05
						1/2" Ice	8.53	5.79	0.10
						1" Ice	9.00	6.26	0.16
						2" Ice	9.95	7.20	0.29
Samsung MT6413-77A	B	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	3.81	1.46	0.06
						1/2" Ice	4.06	1.65	0.08
						1" Ice	4.32	1.84	0.11
						2" Ice	4.86	2.26	0.18
Commscope NHH-65B-R2B	C	From Face	3.00 0.00 0.00	0.0000	137.00	No Ice	8.08	5.44	0.05
						1/2" Ice	8.53	5.94	0.10
						1" Ice	9.00	6.47	0.16
						2" Ice	9.95	7.57	0.30
Commscope NHHSS-65B-R2B-R2BT4	C	From Face	3.00 0.00	0.0000	137.00	No Ice	8.08	5.34	0.05
						1/2" Ice	8.53	5.79	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	9.00	6.26	0.16
						2" Ice	9.95	7.20	0.29
Samsung MT6413-77A	C	From Face	3.00	0.0000	137.00	No Ice	3.81	1.46	0.06
			0.00			1/2" Ice	4.06	1.65	0.08
			0.00			1" Ice	4.32	1.84	0.11
						2" Ice	4.86	2.26	0.18
(3) Samsung RF4461d-13A	C	None		0.0000	137.00	No Ice	1.88	1.27	0.08
						1/2" Ice	2.05	1.42	0.10
						1" Ice	2.22	1.57	0.12
						2" Ice	2.60	1.89	0.17
(3) Samsung RF4439d-25A B25/B66A	C	None		0.0000	137.00	No Ice	1.88	1.25	0.08
						1/2" Ice	2.05	1.39	0.09
						1" Ice	2.22	1.54	0.11
						2" Ice	2.60	1.86	0.17
(3) Samsung RT4423-48A	C	None		0.0000	137.00	No Ice	0.86	0.42	0.02
						1/2" Ice	0.97	0.51	0.03
						1" Ice	1.10	0.61	0.04
						2" Ice	1.37	0.83	0.06
Rayco Fiber Junction Box	C	None		0.0000	137.00	No Ice	2.51	1.97	0.03
						1/2" Ice	2.71	2.15	0.05
						1" Ice	2.91	2.33	0.08
						2" Ice	3.35	2.73	0.15

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
2.5' Dish w/Radome	A	Paraboloid w/Radome	From Face	4.00	Worst		148.00	2.50	No Ice	4.91	0.05
				4.00					1/2" Ice	5.24	0.08
				0.00					1" Ice	5.57	0.10
									2" Ice	6.24	0.16
2.5' Dish w/Radome	C	Paraboloid w/Radome	From Face	4.00	Worst		148.00	2.50	No Ice	4.91	0.05
				6.00					1/2" Ice	5.24	0.08
				0.00					1" Ice	5.57	0.10
									2" Ice	6.24	0.16

Load Combinations

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

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 103	4.431	12	0.2657	0.0019
L2	108.5 - 78.9	2.330	12	0.2096	0.0006
L3	85.4 - 39.32	1.423	12	0.1595	0.0003
L4	47.32 - 0	0.438	12	0.0826	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.00	12' Dipole Antenna	12	4.431	0.2657	0.0019	186410
153.00	Lightning Rod	12	4.431	0.2657	0.0019	186410
148.00	2.5' Dish w/Radome	12	4.375	0.2645	0.0019	186410
147.50	PiROD 15' Platform with handrail	12	4.348	0.2640	0.0018	186410
143.50	Universal Ring Mount	12	4.126	0.2595	0.0017	169463
137.00	PiROD 15' Platform with handrail	12	3.770	0.2520	0.0014	77671
133.00	Universal Ring Mount	12	3.553	0.2471	0.0013	58253

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 103	25.135	2	1.5070	0.0108
L2	108.5 - 78.9	13.216	2	1.1896	0.0031
L3	85.4 - 39.32	8.071	2	0.9048	0.0017
L4	47.32 - 0	2.486	2	0.4683	0.0006

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.00	12' Dipole Antenna	2	25.135	1.5070	0.0108	32898
153.00	Lightning Rod	2	25.135	1.5070	0.0108	32898
148.00	2.5' Dish w/Radome	2	24.820	1.5007	0.0106	32898
147.50	PiROD 15' Platform with handrail	2	24.663	1.4975	0.0104	32898
143.50	Universal Ring Mount	2	23.408	1.4721	0.0095	29907
137.00	PiROD 15' Platform with handrail	2	21.385	1.4296	0.0081	13707
133.00	Universal Ring Mount	2	20.156	1.4021	0.0072	10280

Base Plate Design Data

Plate Thickness in	Number of Anchor Bolts	Anchor Bolt Size in	Actual Allowable Ratio Bolt Tension K	Actual Allowable Ratio Bolt Compression K	Actual Allowable Ratio Plate Stress ksi	Actual Allowable Ratio Stiffener Stress ksi	Controlling Condition	Ratio
2.2500	24	1.7500	61.08 142.46 0.43	64.82 236.48 0.27	18.760 45.000 0.42		Bolt T	0.43 ✔

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	149 - 103 (1)	TP42.34x27.5x0.25	46.00	0.00	0.0	31.9905	-11.72	1871.44	0.006
L2	103 - 78.9 (2)	TP49.4x40.0657x0.313	29.60	0.00	0.0	46.7297	-16.67	2733.69	0.006
L3	78.9 - 39.32 (3)	TP63.1x46.7242x0.375	46.08	0.00	0.0	71.2745	-28.05	4169.56	0.007
L4	39.32 - 0 (4)	TP73x59.507x0.438	47.32	0.00	0.0	100.877 0	-48.55	5901.28	0.008

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	149 - 103 (1)	TP42.34x27.5x0.25	344.52	1645.98	0.209	0.00	1645.98	0.000
L2	103 - 78.9 (2)	TP49.4x40.0657x0.313	669.31	2896.55	0.231	0.00	2896.55	0.000
L3	78.9 - 39.32 (3)	TP63.1x46.7242x0.375	1364.64	5472.55	0.249	0.00	5472.55	0.000
L4	39.32 - 0 (4)	TP73x59.507x0.438	2511.97	9219.58	0.272	0.00	9219.58	0.000

tnxTower	Job	Page
	Bloomfield 5 CT 96210.413	7 of 7
Chappell Engineering Assoc. LLC 201 Boston Post Road West Marlborough, MA 01752 Phone: (508) 481-7400 FAX: (508) 481-7406	Project 7A Old Windsor Rd, Bloomfield CT 06002	Date 12:31:54 09/05/23
	Client Verizon NSB 96210.413	Designed by CJS

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	149 - 103 (1)	TP42.34x27.5x0.25	12.56	561.43	0.022	1.93	1982.22	0.001
L2	103 - 78.9 (2)	TP49.4x40.0657x0.313	15.58	820.11	0.019	1.93	3378.25	0.001
L3	78.9 - 39.32 (3)	TP63.1x46.7242x0.375	20.96	1250.87	0.017	1.93	6559.76	0.000
L4	39.32 - 0 (4)	TP73x59.507x0.438	27.55	1770.38	0.016	1.93	11250.08	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	149 - 103 (1)	0.006	0.209	0.000	0.022	0.001	0.216 ✔	1.000	4.8.2 ✔
L2	103 - 78.9 (2)	0.006	0.231	0.000	0.019	0.001	0.238 ✔	1.000	4.8.2 ✔
L3	78.9 - 39.32 (3)	0.007	0.249	0.000	0.017	0.000	0.256 ✔	1.000	4.8.2 ✔
L4	39.32 - 0 (4)	0.008	0.272	0.000	0.016	0.000	0.281 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	149 - 103	Pole	TP42.34x27.5x0.25	1	-11.72	1871.44	21.6	Pass
L2	103 - 78.9	Pole	TP49.4x40.0657x0.313	2	-16.67	2733.69	23.8	Pass
L3	78.9 - 39.32	Pole	TP63.1x46.7242x0.375	3	-28.05	4169.56	25.6	Pass
L4	39.32 - 0	Pole	TP73x59.507x0.438	4	-48.55	5901.28	28.1	Pass
						Summary		
						Pole (L4)	28.1	Pass
						Base Plate	42.9	Pass
						RATING =	**42.9**	**Pass**

Appendix D – Photos


KOHLER

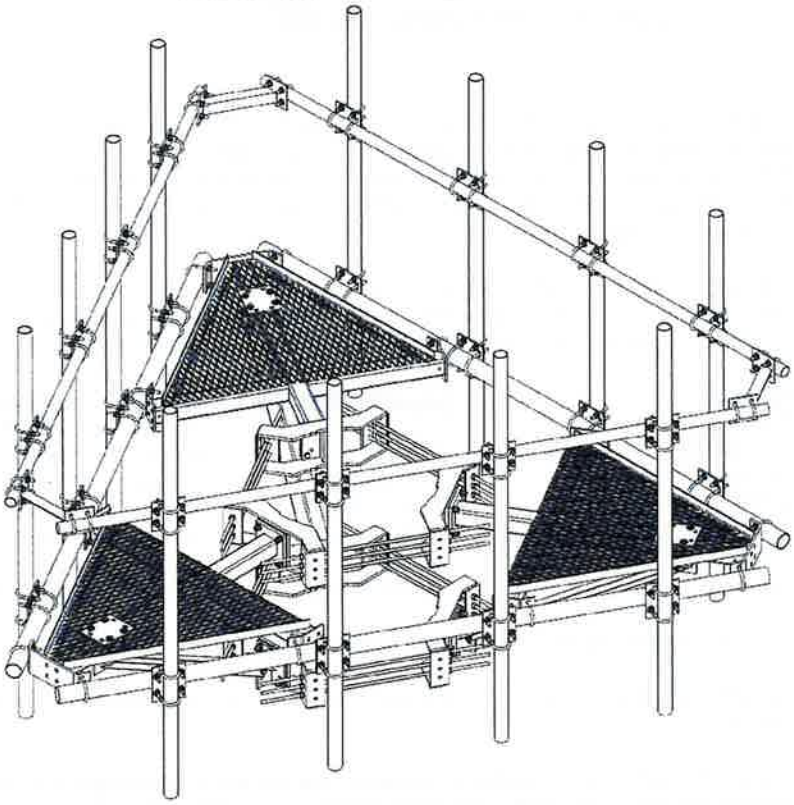

KOHLER.


STOP

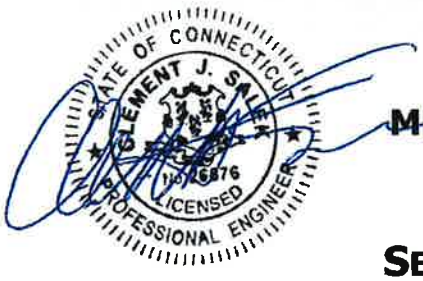
verizon

20 Alexander Drive
Wallingford, CT 06492

MOUNT ANALYSIS
BLOOMFIELD 5 CT



Address:
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002
MDG LOCATION ID: 5000920838



Date:
SEPTEMBER 12, 2023 (REV. 4)

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying

R.K. Executive Centre ■ 201 Boston Post Road West ■ Suite 101 ■ Marlborough, MA 01752
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CHAPPELL
ENGINEERING
ASSOCIATES, LLC
Civil • Structural • Land Surveying

September 12, 2023

verizon

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Wallingford, CT 06492

RE:

Applicant Site Name:	Bloomfield 5 CT
MDG Location ID:	5000920838
Site Address:	7A Old Windsor Road, Bloomfield, CT 06002

To whom it may concern:

Chappell Engineering Associates, LLC has performed a structural analysis of the proposed Verizon braced low-profile antenna mounting platform being proposed at the existing 150'+/- monopole located at the above-referenced address at approximately 137 ft AGL to analyze the effect of the proposed Verizon antenna installation on the subject platform. Our analysis has been performed in accordance with the 2022 Connecticut State Building Code (2021 International Building Code) with Connecticut Amendments.

The proposed antenna support structure will consist of one (1) low-profile antenna frame supporting twelve (12) individual antenna pipes mounts. Our analysis has considered the following total major equipment loads indicated on the antenna design summary (included in this report) to be installed on the proposed low-profile antenna frame:

Appurtenance	Size (HxWXD)(in)	Weight	Location	Status
(3) NHH-65B-R2B Panel Antennas	72.0x11.9x7.1	43.7lbs	Face of Mount	Proposed
(3) NHHSS-65B-R2B-R2BT4 Panel Antennas	72.0x11.9x7.1	48.1lbs	Face of Mount	Proposed
(3) Samsung MT6413-77A Panel	28.9x15.8x5.5	57.3lbs	Face of Mount	Proposed
(3) Samsung RF4461d-13A RRH	15.0x15.0x10.2	79.1lbs	Face of Mount	Proposed
(3) Samsung RF4439d-25A B25/B66A RRH	15.0x15.0x10.0	74.7lbs	Face of Mount	Proposed
(3) Samsung RT4423-48A RRH	11.8x8.7x4.2	18.7lbs	Face of Mount	Proposed
(1) Fiber Junction Box	29.58x16.5x12.6	32.0lbs	Face of Mount	Proposed

The proposed antennas and ancillary hardware are shown on the enclosed Lease Exhibits.

We have modeled the entire low-profile antenna frame under both wind and wind/ice loads. Our analysis and results are included in this report.

Based upon our analysis of the antenna mounts being proposed, **we consider the proposed RMQP-496-HK low-profile mounting frame assembly has adequate capacity** to support the proposed antenna configuration as shown. **The maximum percentage stress capacity as determined by our analysis are the antenna mounting pipes supporting the combined dual-mount antennas with a capacity of 53%.** Our analysis assumes the proposed antenna mounting platform will be properly installed and maintained according to manufacturers' recommendations.

If you have any questions regarding this matter, please do not hesitate to call.

Very truly yours,
CHAPPELL ENGINEERING ASSOCIATES, LLC

CLEMENT J. SALEK
No. 26876
LICENSED PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

Clement J Salek, P.E.
CJS/cjs

Appendix A – Construction Drawings

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN DATE: 7/28/23
ANTENNA MOUNT STRUCTURAL ANALYSIS DATE: 6/12/23
ANTENNA SUPPORT STRUCTURE (150'± MONOPOLE) STRUCTURAL ANALYSIS DATE: 6/12/23

verizon

20 ALEXANDER DRIVE, 2nd FLOOR, WALLINGFORD, CT 06492

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

PROJECT TYPE: WIRELESS TELECOMMUNICATIONS COLLOCATION ON EXISTING 150'± MONOPOLE

SITE INFORMATION:

PARENT PARCEL OWNER:	MAZL LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920
TOWER OWNER:	GOOSETOWN NETWORK SERVICES, LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920 (845) 268-7500
TOWER OWNER ID:	UNKNOWN
APPLICANT:	CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE, 2nd FLOOR WALLINGFORD, CT 06492
SITE ADDRESS:	7A OLD WINDSOR ROAD BLOOMFIELD, CT 06002
COUNTY:	HARTFORD COUNTY, CT
SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE N 41°-51'-19.96" (41.855544°) (NAD '83) W 72°-42'-16.98" (72.704717°) (NAD '83)
JURISDICTION:	CONNECTICUT SITING COUNCIL
TAX ID PARCEL NUMBER:	MAP 16 BLOCK 58
ARCHITECT / ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
POWER COMPANY:	EVERSOURCE ENERGY 247 STATION DRIVE, SE 210 WESTWOOD, MA 02090 (781) 441-3610
TELEPHONE COMPANY:	VERIZON 185 FRANKLIN STREET BOSTON, MA 02107 (800) 941-9900

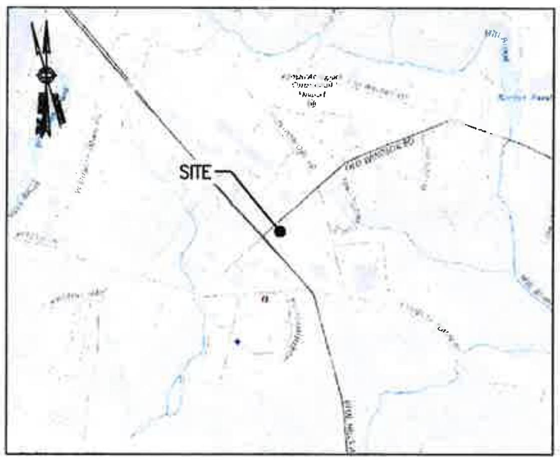
GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON 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 CONTRACTORS EXPENSE.
2. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2022 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

VICINITY MAP

SCALE: 1"=1000'



DRIVING DIRECTIONS

FROM WALLINGFORD, TAKE I-91 NORTH. TAKE EXIT 37 FOR CT-305/BLOOMFIELD AVENUE TOWARD WINDSOR CENTER. USE LEFT 2 LANES TO TURN LEFT ONTO CT-305 W/BLOOMFIELD AVENUE. THE SITE WILL BE ON THE LEFT HAND SIDE.

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DO NOT SCALE DRAWINGS

ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS AT THE PROPOSED PROJECT SITE SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION PHASE. THE PROJECT OWNERS REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO PROCEEDING WITH THE PROPOSED WORK AFFECTED BY SUCH DISCREPANCIES. IN THE EVENT OF LACK OF SUCH NOTIFICATION, SUCH DISCREPANCIES SHALL BECOME THE RESPONSIBILITY OF THE PREVAILING CONTRACTOR RESPONSIBLE FOR CONSTRUCTION.

PROJECT DESCRIPTION

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT INSTALLATION AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS TELECOMMUNICATIONS SERVICE.
2. THIS FACILITY WILL CONSUME NO UNRECOVERABLE ENERGY.
3. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

TITLE SHEET

DRAWING NO:

T01

SCALE: AS SHOWN
CEA PROJECT NO.: 23310.413
DATE: 3/28/23

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   - CONTRACTOR – VERIZON WIRELESS
   - SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER – VERIZON WIRELESS
   - OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC. 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACK FILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH VERIZON WIRELESS NETWORK STANDARD (NSTD123) TO THE MAXIMUM EXTENT FEASIBLE UNLESS PRECLUDED OR LIMITED BY DESIGN SHOWN ON THESE DRAWINGS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. 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 SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR 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.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   - CONCRETE CAST AGAINST EARTH.......3 IN.
   - CONCRETE EXPOSED TO EARTH OR WEATHER:
     - #6 AND LARGER ....2 IN.
     - #5 AND SMALLER & WWF ....1½ IN.
   - CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
     - SLAB AND WALL ....¾ IN.
     - BEAMS AND COLUMNS ....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER:
   - (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   - (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.

   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON WIRELESS SPECIFICATION 25292-000-3PS-CET-00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"Ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.

7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANEL BOARD AND CIRCUIT ID'S).

8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON- CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

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(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

[illegible]

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REVISIONS		
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/29/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/26/23) [illegible]	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

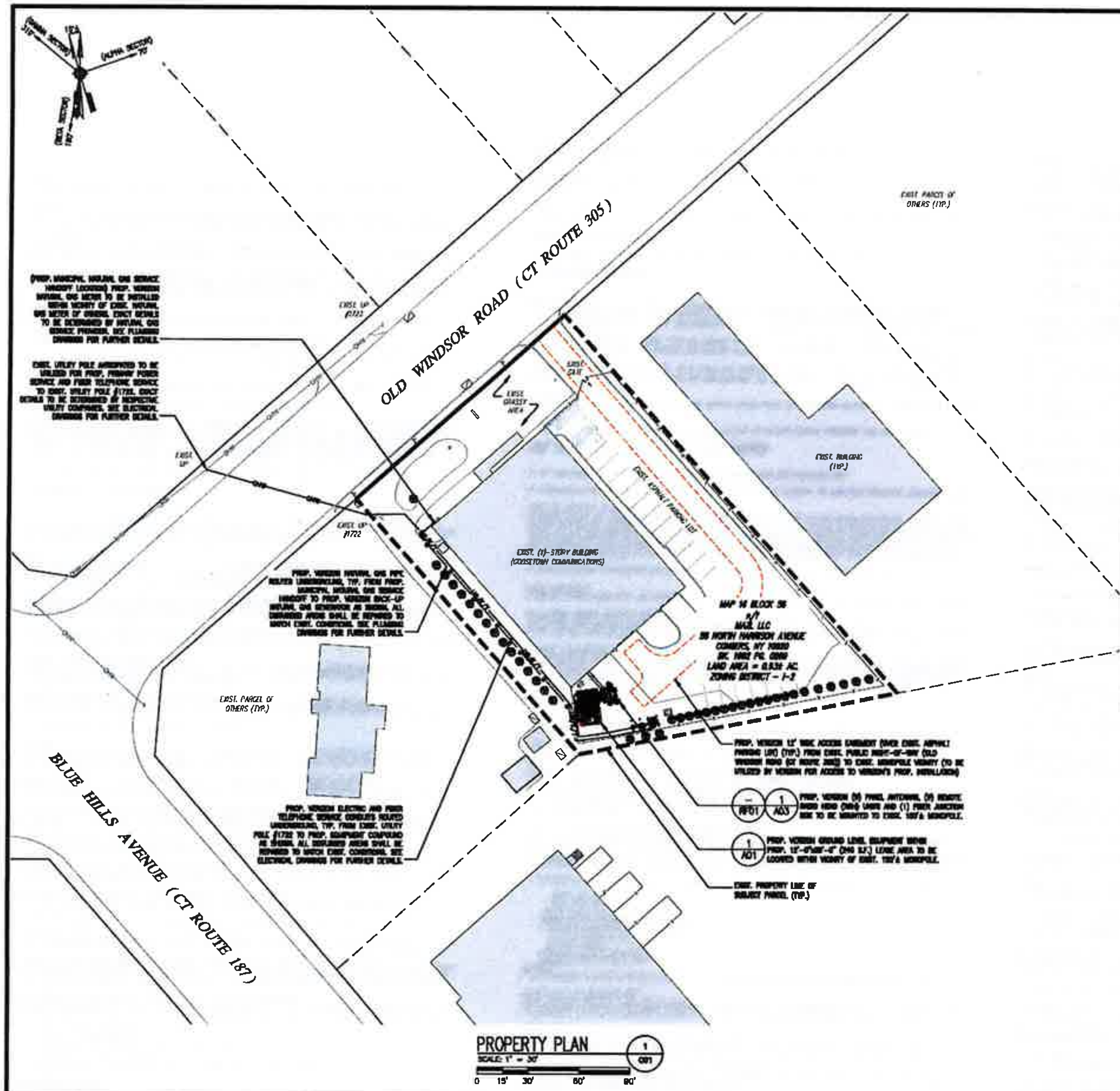
DRAWING TITLE:

GENERAL NOTES

DRAWING NO:

GN01

SCALE: N/A
CEA PROJECT NO.: 00210.413
ORIGINAL ISSUE DATE: 3/29/23
[illegible]



PROPERTY PLAN
SCALE: 1" = 30'
0 15' 30' 60' 90'
1 / C01

GENERAL NOTES:

1. INITIAL DESIGN VISIT DATE: 1/13/23
2. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD '83)
4. SITE CONTROL POINT: CENTER OF EXISTING MONOPOLE LATITUDE: N. 41°-51'-19.88" (41.855644°) (NAD '83) LONGITUDE: W. 72°-42'-15.88" (72.704117°) (NAD '83)
5. PARENT PARCEL OWNER: MAZL LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920
6. TOWER OWNER: GOOSETOWN NETWORK SERVICES, LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920 (845) 268-7880
7. TOWER OWNER ID: UNKNOWN
8. SITE ADDRESS: 7A OLD WINDSOR ROAD BLOOMFIELD, CT 06002
9. APPLICANT: CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE, 2nd FLOOR WALLINGFORD, CT 06492
10. JURISDICTION: CONNECTICUT SITING COUNCIL
11. TAX ID: MAP 16 BLOCK 56
12. DEED REFERENCE: BK. 1992 PG. [illegible]
13. PLAN REFERENCES: TOWN OF BLOOMFIELD ASSESSOR/GIS MAPS
14. ZONING CLASSIFICATION: I-2 (INDUSTRIAL)
15. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREIN WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY SITE WORK. CALL DIGSAFE 1-888-344-7233 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
16. THE PROPERTY LINES SHOWN WERE COMPILED UTILIZING TOWN OF BLOOMFIELD ASSESSOR'S PLANS, GIS, RECORDED DEEDS AND PLANS OF REFERENCE AS INDICATED. A COMPLETE BOUNDARY SURVEY WAS NOT UTILIZED IN THE PREPARATION OF THESE PLANS.
17. THE SITE IS LOCATED IN FLOOD HAZARD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON FLOOD INSURANCE RATE MAP FOR THE TOWN OF BLOOMFIELD, (MAP NUMBER [illegible]) EFFECTIVE 9/26/2008.
18. BEARING SYSTEM OF THIS PLAN IS BASED ON GRID NORTH. TRUE NORTH WAS ESTABLISHED FROM GPS OBSERVATIONS. IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF TRUE NORTH.

LEGEND

- PROPERTY LINE (OR STREET)
- ABUTTING PROPERTY LINE
- PROPERTY OFFSET/RADIUS
- EXIST. EASEMENT
- EXIST. CHAIN LINK FENCE
- EXIST. STOCKADE FENCE
- EXIST. EDGE OF PAVEMENT
- EXIST. OVERHEAD UTILITIES
- APPROXIMATE ZONING BOUNDARY
- APPROXIMATE TOWN LINE

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
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www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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REVISIONS

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

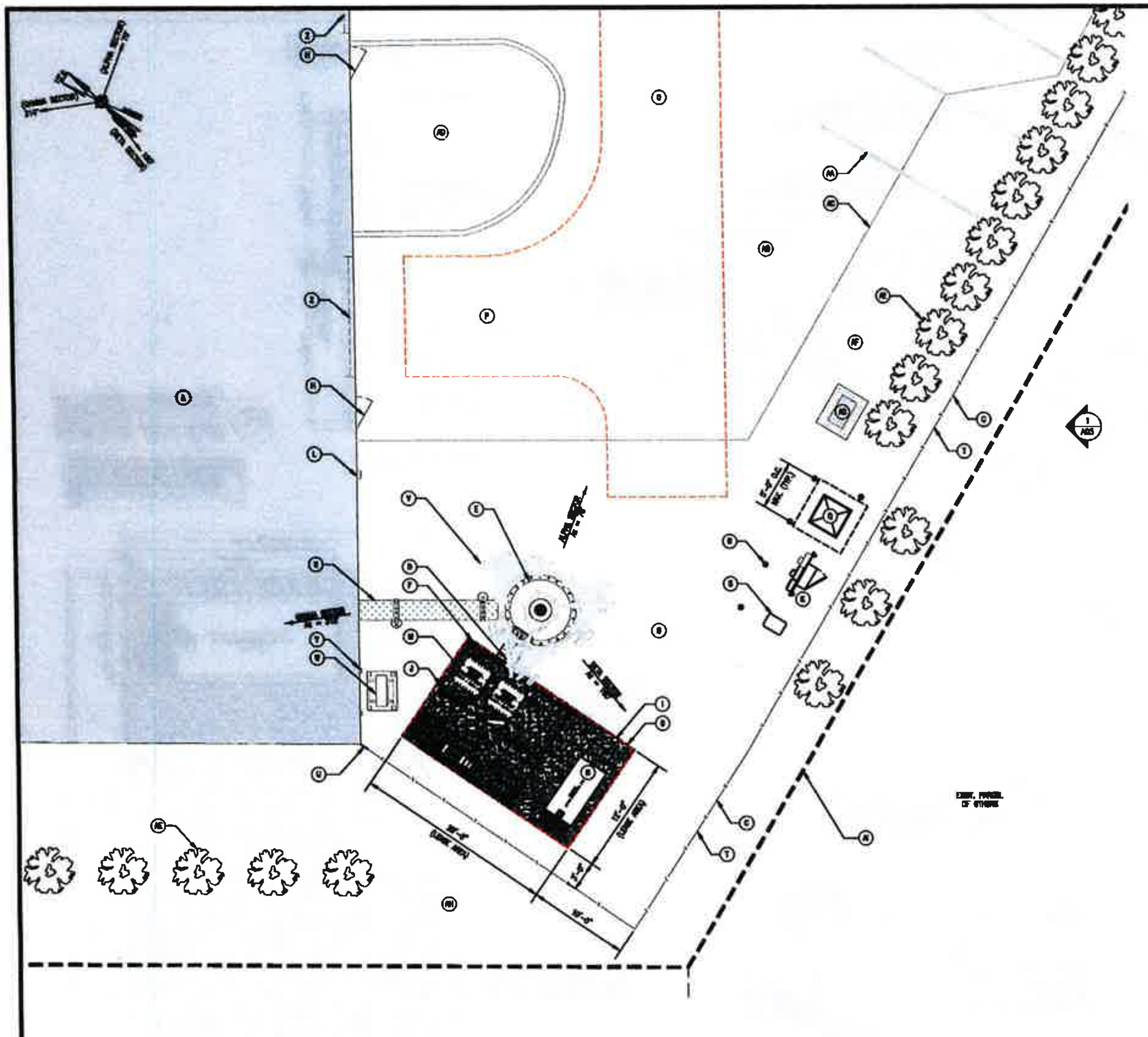
DRAWING TITLE:

PROPERTY PLAN

DRAWING NO:

C01

SCALE: 1" = 30'
CEA PROJECT NO.: 86310.413
ORIGINAL ISSUE DATE: 3/28/23



MONOPOLE VICINITY PLAN (1/A01)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

SITE CONTROL POINT:
CENTER OF EXISTING MONOPOLE
N 41°-51'-18.96" (41.855544°) (NAD '83)
W 72°-42'-16.98" (72.704717°) (NAD '83)
GROUND ELEVATION - 150.0' AMSL (NAVD '88)
PER GOOGLE EARTH

LEGEND

REF.	ITEM	DESCRIPTION
	A	EXIST. (1) STORY BUILDING (GOOSETOWN COMMUNICATIONS)
	B	LIMITS OF VERIZON'S PROP. 20'-0"x12'-0" (240 S.F.) LEASE AREA/EQUIPMENT PAD (TYP.)
	C	EXIST. 7'± CHAIN-LINK FENCE (TYP.)
3/A02	D	PROP. VERIZON (2)-6x12 HYBRID SIGNAL CABLES ROUTED ALONG PROP. OVERHEAD CABLE ICE BRIDGE (TYP.) FROM VERIZON'S PROP. EQUIPMENT PAD TO EXIST. MONOPOLE AS SHOWN.
	E	EXIST. 150'± MONOPOLE
3/RF01	F	PROP. VERIZON GPS ANTENNA MOUNTED TO PROP. METAL DECK ICE SHIELD. TOP OF GPS ANTENNA SHALL BE MOUNTED 2'-0" ABOVE TOP OF ICE SHIELD.
	G	EXIST. GRAVEL COVER WITHIN EXIST. MONOPOLE VICINITY
	H	EXIST. PERSONNEL ACCESS DOOR
6/S01	I	PROP. VERIZON 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE EQUIPMENT PAD (TYP.)
1-4/S01	J	PROP. VERIZON 12'-0"x11'-10" (140± S.F.) METAL DECK ICE SHIELD (SHOWN TRANSPARENT FOR CLARITY) ABOVE PROP. EQUIPMENT
2/E02A	K	APPROXIMATE LOCATION OF PROP. TELCO CABINET AND 3-GANG ELECTRIC METER BANK (TO BE EXPANDABLE TO 6-GANG AND DESIGNED TO ACCOMMODATE 400A ELECTRIC SERVICE). EXACT LOCATION, DETAILS AND DESIGN TO BE DETERMINED BY RESPECTIVE UTILITY COMPANIES.
	L	EXIST. GOOSETOWN COMMUNICATIONS GENERATOR PLUG
1,2/A02	M	PROP. VERIZON EQUIPMENT CABINET MOUNTED TO PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD (TYP.)
1/S01	N	PROP. VERIZON 30kW BACK-UP NATURAL GAS GENERATOR MOUNTED TO PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD
	O	PROP. VERIZON 12' WIDE ACCESS EASEMENT (OVER EXIST. ASPHALT PARKING LOT) (TYP.) FROM EXIST. PUBLIC RIGHT-OF-WAY (OLD WINDSOR ROAD (CT ROUTE 305)) TO EXIST. MONOPOLE VICINITY (TO BE UTILIZED BY VERIZON FOR ACCESS TO VERIZON'S PROP. INSTALLATION). SEE SHEET C01 FOR CONTINUATION TO OLD WINDSOR ROAD (CT ROUTE 305).
	P	PROP. VERIZON 12'x20' PARKING SPACE OR TURN-AROUND AREA
	Q	APPROXIMATE LOCATION OF PROP. ELECTRIC TRANSFORMER (EXACT DETAILS AND LOCATION TO BE DETERMINED BY ELECTRIC COMPANY)
4/A02	R	PROP. 6"Ø CONCRETE FILLED STEEL BOLLARD (TYP. OF 4)
	S	PROP. TELCO HANDHOLE (EXACT DETAILS TO BE DETERMINED BY TELEPHONE COMPANY)
	T	EXIST. FENCE TO BE REPAIRED/REINSTALLED BY VERIZON AS REQUIRED.
	U	EXIST. FENCE GAP TO BE INFILLED BY VERIZON AS REQUIRED
–/RF01	V	PROP. VERIZON (6) PANEL ANTENNAS, (6) RRH UNITS AND (1) FIBER JUNCTION BOX TO BE MOUNTED TO PROP. TRI-SECTOR STEEL MOUNTING PLATFORM ON EXIST. 150'± MONOPOLE.
	W	EXIST. GOOSETOWN COMMUNICATIONS AC CONDENSING UNIT AND PEDESTAL
	X	EXIST. GOOSETOWN COMMUNICATIONS OVERHEAD CABLE ICE BRIDGE (TYP.)
	Y	EXIST. GOOSETOWN COMMUNICATIONS AC CONDENSING UNIT DISCONNECT SWITCH
	Z	EXIST. OVERHEAD DOOR
	AA	EXIST. PARKING STRIPE (TYP.)
	AB	EXIST. ASPHALT PARKING LOT
	AC	APPROXIMATE EDGE OF EXIST. ASPHALT SURFACE (TYP.)
	AD	EXIST. MULCH BED
	AE	APPROXIMATE LOCATION OF EXIST. EVERGREEN TREE (TYP.) (ALL TO REMAIN)
	AF	EXIST. GRAVEL AREA
	AG	EXIST. STORM DRAIN (EXIST. UNDERGROUND DRAIN PIPES (NOT SHOWN FOR CLARITY) SHALL BE IDENTIFIED IN FIELD AND LEFT UNDISTURBED DURING ALL PHASES OF CONSTRUCTION.
	AH	EXIST. GRASSY AREA
	AI	APPROX. EXIST. PROPERTY LINE (TYP.)

CLIENT:
verizon

ARCHITECT/ENGINEER:
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SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:
[illegible]

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REVISIONS

NO.	DESCRIPTION	DATE
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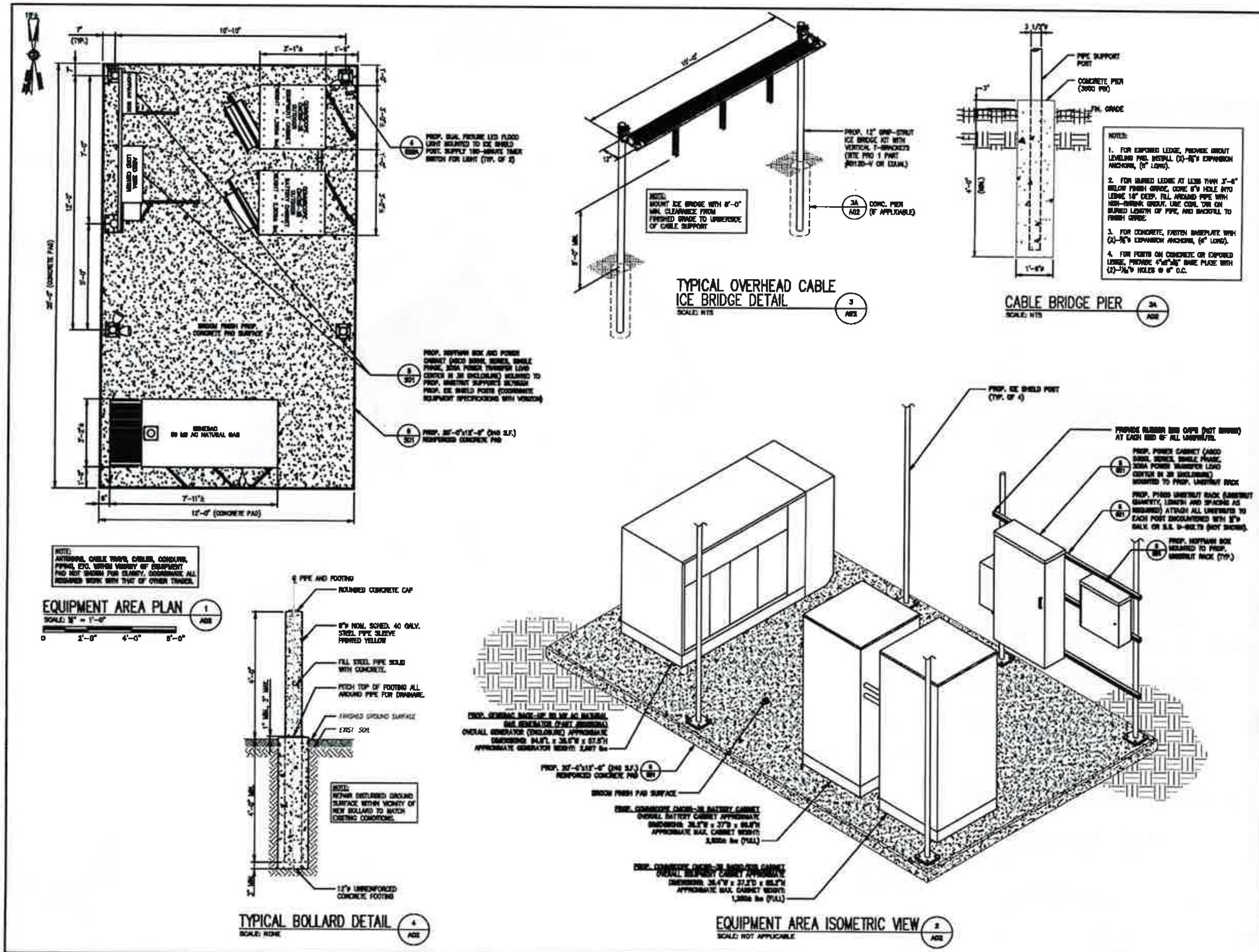
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
MONOPOLE VICINITY PLAN

DRAWING NO:
A01

SCALE: 3/16" = 1'-0"	DESIGNED BY: [illegible] DRAWN BY: [illegible] CHECKED BY: [illegible]	VZW PROJECT NO.: [illegible]
CEA PROJECT NO.: 08210.413	ORIGINAL ISSUE DATE: 3/28/23	VZW LOCATION CODE: [illegible] VZW LOCATION #: [illegible]



CLIENT:

verizon✓

ARCHITECT/ENGINEER:

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

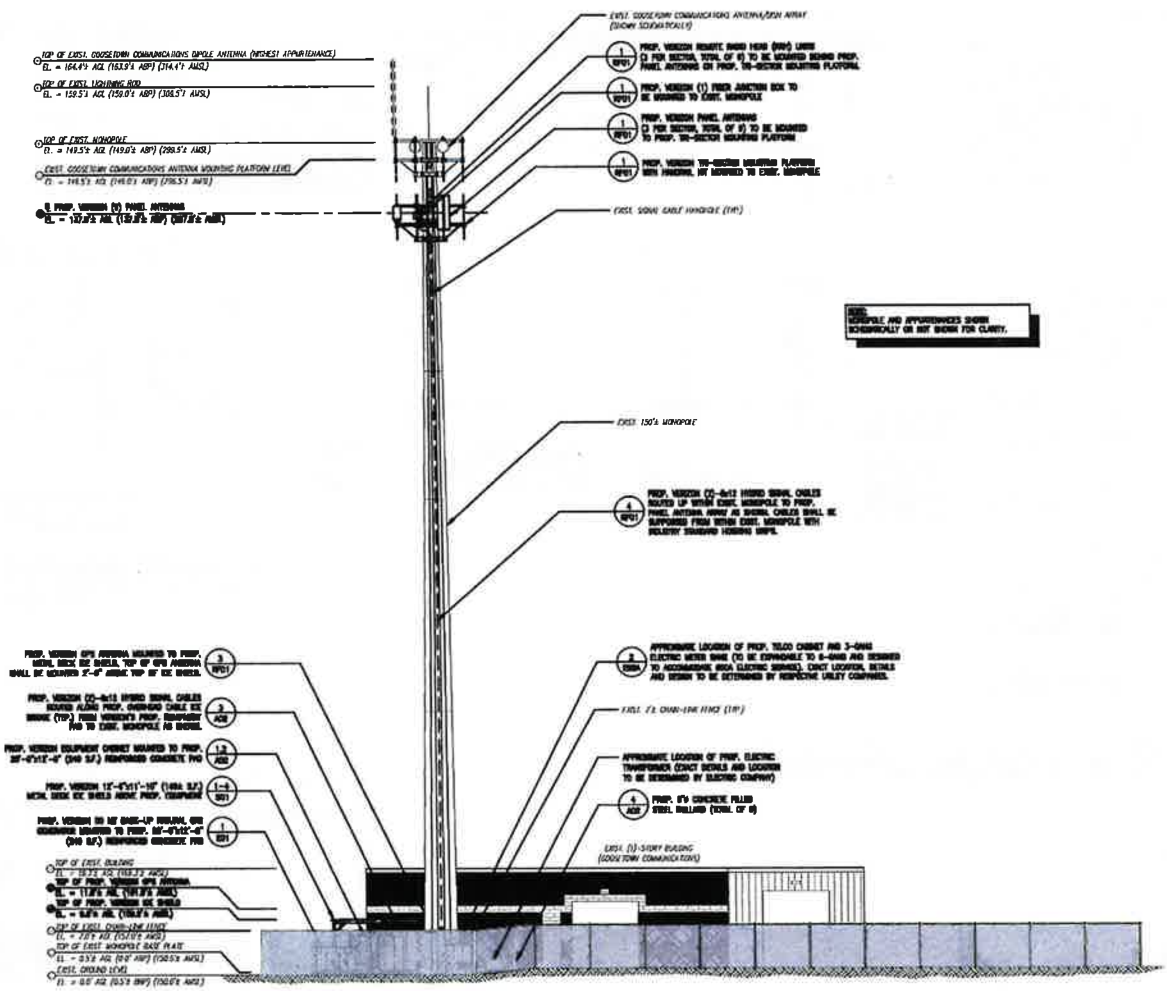
DRAWING TITLE:

EQUIPMENT AREA
PLAN & DETAILS

DRAWING NO:

A02

SCALE: AS SHOWN
CEA PROJECT NO.: 08210.413
3/28/23



SOUTHEAST SITE ELEVATION (1/A03)
SCALE: 1" = 10'
0 5' 10' 20' 30'

LEGEND

AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC

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SUITE 101
MARLBOROUGH, MA 01752
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SEAL:

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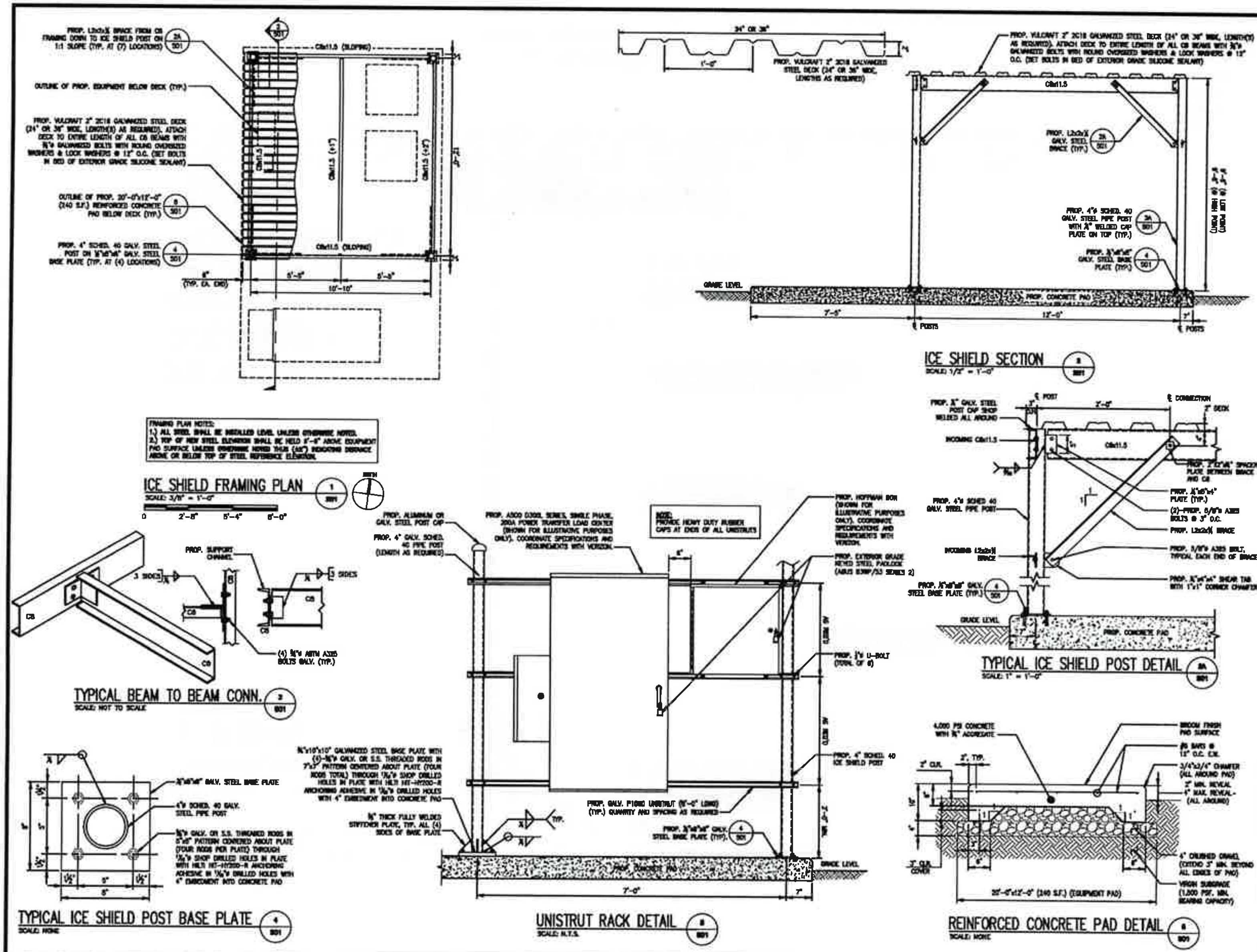
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
SOUTHEAST SITE ELEVATION

DRAWING NO.:
A03

SCALE: 1" = 10'
CEA PROJECT NO.: 08810.413
3/28/23



CLIENT:

verizon

ARCHITECT/ENGINEER:

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

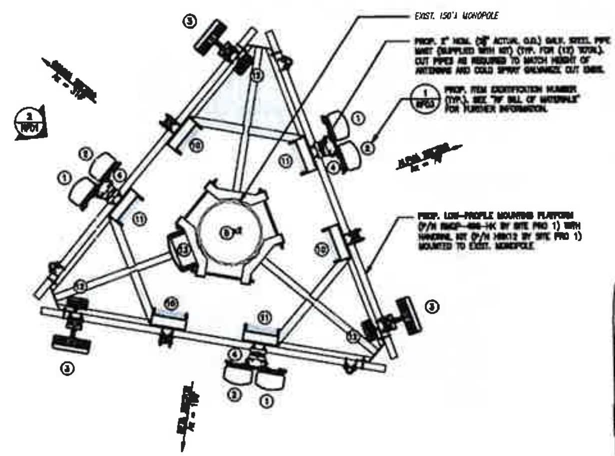
DRAWING TITLE:

ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS

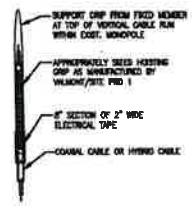
DRAWING NO:

S01

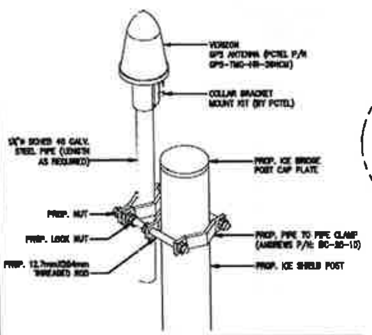
SCALE: AS SHOWN
CEA PROJECT NO.: 88310.413
3/28/23



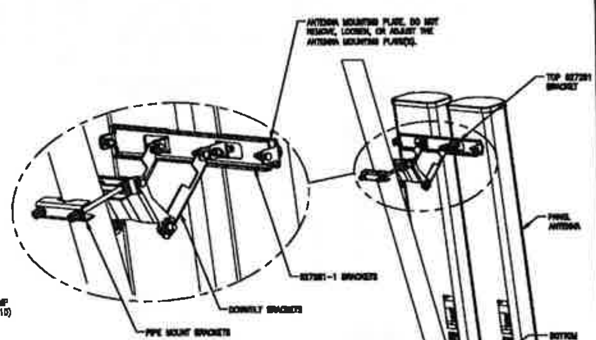
ANTENNA MOUNTING PLAN (1/RF01)
SCALE: 1/2" = 1'-0"



TYPICAL HOISTING GRIP DETAIL (4/RF01)
SCALE: NONE

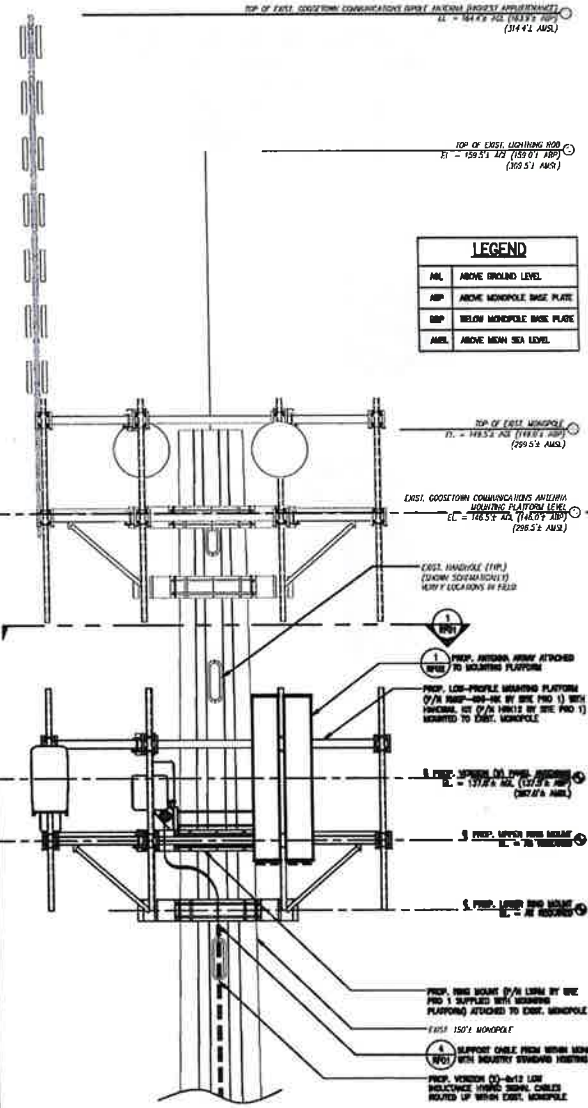


GPS ANTENNA MOUNTING DETAIL (3/RF01)
SCALE: N.T.S.



ITEM 4	
SIDE-BY-SIDE ANTENNA MOUNT BRACKET	
WEIGHT:	25.4 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL SIDE-BY-SIDE ANTENNA MOUNT KIT (COMMSCOPE PART #BSAMNT-SBS-1-2) (5/RF01)
SCALE: NOT TO SCALE



LEGEND	
AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

ANTENNA MOUNTING PLATFORM MOUNTING DETAIL (2/RF01)
SCALE: 1/2" = 1'-0"

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

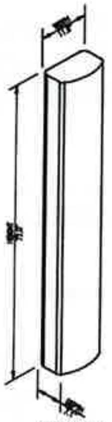
DRAWING TITLE:

ANTENNA MOUNTING PLAN AND DETAILS

DRAWING NO:

RF01

SCALE: AS SHOWN
3/28/23

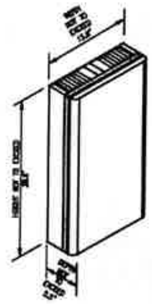


COMMSCOPE
NHH-65B-R2B

ITEM 1	
LTE (700/850/50/1900 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	43.7 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

COMMSCOPE
NHHSS-65B-R2B-R2BT4

ITEM 2	
LTE (2100/CBRS MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	48.1 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	



SAMSUNG
MT6413-77A

ITEM 3	
MT6413-77A ANTENNA	
MAX. DIMENSIONS:	35.9"H x 15.9"W x 5.5"D
MAX. WEIGHT:	57.3 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL PROP. PANEL ANTENNA SPECIFICATIONS (1 / RF02)
SCALE: N.T.S.

SAMSUNG
RF4461d-13A

ITEM 10	
LTE/NR (700/850/5G MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.3"D
WEIGHT:	79.1 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

SAMSUNG
RF4439d-25A B25/B66A

ITEM 11	
LTE/NR (1900/2100 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.0"D
WEIGHT:	74.7 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

SAMSUNG
RT4423-48A

ITEM 12	
(BAND 48 (3.5 GHz)) NR AU RRH	
DIMENSIONS:	11.8"H x 8.7"W x 4.3"D
WEIGHT:	18.7 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL REMOTE RADIO HEAD (RRH) UNIT DIMENSIONS (2 / RF02)
SCALE: N.T.S.

Procedure
Mounting Procedures

4.1 A mounting base is delivered with the unit. The base allows either wall/ladder or pole mounted installation. See picture to identify the holes for each installation method

4.2 *Option 1: Pole Mount* Using supplied hardware, mount Bracket to 2" to 4" diameter pole

4.3 *Option 2: Unistrut*

4.4 *Option 3: Monopole* Use 1" stainless steel bands (not supplied) through slots on bracket to mount to Monopole

Gland/Insert Definitions

5.1 See picture to identify Base Gland Assembly Definitions

Qty	Connector Size	Pos	Insert P/N	Insert Hole	Cable Type
2	M75	A	[illegible]	[illegible]	[illegible]
4	M75	B	190-0730	3x 6.5mm	[illegible]

Qty	Connector Size	Insert P/N	Insert Hole	Cable Type	Purpose	Pos
[illegible]	M75	[illegible]	[illegible]	[illegible]	[illegible]	B
[illegible]	M75	[illegible]	2x [illegible]	2x12 DC	2 glands [illegible] 12 core DC	D
[illegible]	M75	190-0823	2x 10.6mm	2x12 Fiber	1 gland [illegible] 2 x 12 fiber trunk	D
[illegible]	M75	190-0812	2x [illegible]	2 ETH	1 gland [illegible] 2 ethernet cable	D

ITEM 13	
FIBER JUNCTION BOX	
DIMENSIONS:	28.36"H x 18.5"W x 12.8"D
WEIGHT:	32.0 LBS
QUANTITY:	TOTAL OF 1
STATUS: PROPOSED	

TYPICAL FIBER JUNCTION BOX DIMENSIONS, SCHEMATIC AND MOUNTING PROCEDURE (3 / RF02)
SCALE: N.T.S.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/20/23) RFDS	8/21/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS

DRAWING NO:

RF02

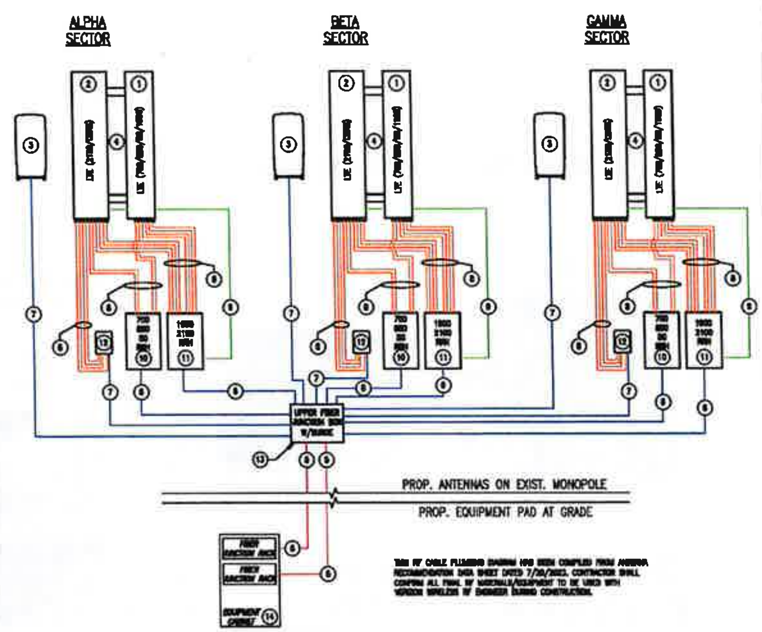
SCALE: AS SHOWN	DRAWN BY: [illegible]	VZW PROJECT NO.: [illegible]
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	VZW LOCATION ID: [illegible]

RF BILL OF MATERIALS (PROP. (FINAL) CONFIGURATION)

SITE NAME: BLOOMFIELD 5 CT — A = ALPHA SECTOR B = BETA SECTOR G = GAMMA SECTOR

ITEM (SEE PLAN)	DESCRIPTION	BAND	QTY	STATUS	CABLE LENGTH/UNIT SIZE	COMMENTS
1	PANEL ANTENNA	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
2	PANEL ANTENNA	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
3	PANEL ANTENNA	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
4	[illegible]	-	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
5	[illegible]	-	2 TOTAL	PROP.	[illegible]	[illegible]
6	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
7	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
8	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
9	[illegible]	-	[illegible]	PROP.	[illegible]	[illegible]
10	[illegible]	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
11	[illegible]	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
12	[illegible]	[illegible]	3 TOTAL (A,B,G)	PROP.	[illegible]	[illegible]
13	[illegible]	-	1 TOTAL	PROP.	[illegible]	[illegible]
14	[illegible]	-	1 TOTAL	PROP.	[illegible]	[illegible]

RF BILL OF MATERIALS (FINAL CONFIGURATION) 1/RF03



RF CABLE PLUMBING DIAGRAM (FINAL CONFIGURATION) 2/RF03

LEGEND

- RED — HYBRID CABLE (MAIN LINE)
- PURPLE — COAXIAL CABLE (MAIN LINE)
- BLUE — 1x1 HYBRID CABLE (JUMPER)
- ORANGE — 1/2"ø COAXIAL CABLE (JUMPER)
- GREEN — RET CONTROL CABLE(S) (JUMPER)

CLIENT: verizon

ARCHITECT/ENGINEER: CHAPPELL ENGINEERING ASSOCIATES, LLC
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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
RF BILL OF MATERIALS AND RF CABLE PLUMBING DIAGRAM

DRAWING NO.:
RF03

SCALE: AS SHOWN | CEA PROJECT NO.: 24210.413 | 3/28/23

CLIENT: verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
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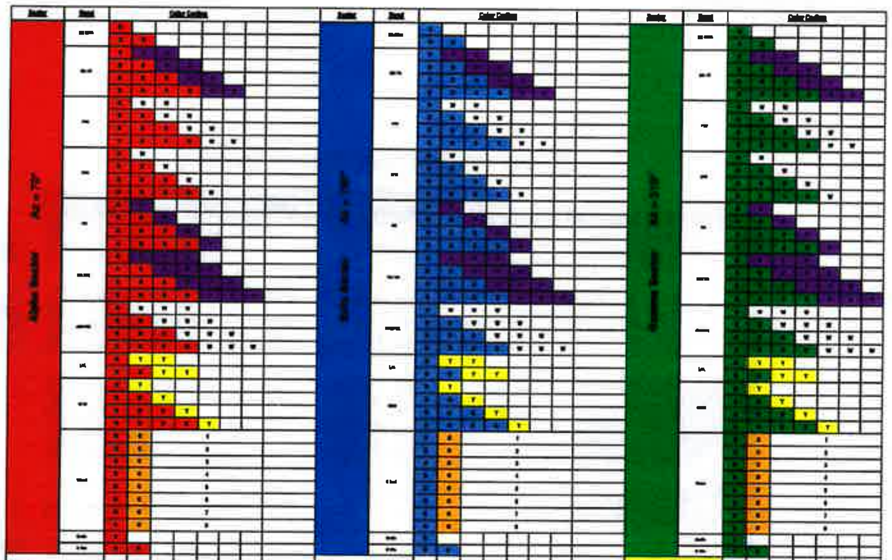
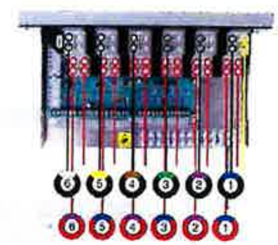
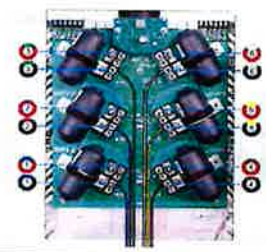


Hybrid Cable on Towers

Hybrid Cable 1			
Sector	Identification Color	-48V	RTN
700 Alpha	Blue		
AWS Alpha	Purple		
PCS Alpha	Green		
850 Alpha	Brown		
Spare	Yellow		
Spare	White		



Hybrid Cable 2			
Sector	Identification Color	-48V	RTN
700 Beta	Blue		
AWS Beta	Purple		
PCS Beta	Green		
850 Beta	Brown		
Spare	Yellow		
Spare	White		



HYBRID CABLE COLOR CODE SPECIFICATIONS (2/RF04)

Main Line Cable Length/Information

CABLE LENGTH PROVIDED BELOW IS APPROXIMATE IN NATURE AND REFLECTED AS AN ASSUMED VALUE TO PROVIDE AVERAGE LENGTH. ANY FIELD MEASUREMENTS OF ANTICIPATED CABLE LENGTH IS ENCOURAGED IN AN EFFORT TO REDUCE SLACK AND TO OPTIMIZE DESIGN. SUCH FIELD MEASUREMENTS MAY SUPERCEDE THE LENGTH PROVIDED BELOW AT THE DISCRETION OF THE GENERAL CONTRACTOR

155'±
TWO (2) PROPOSED 6x12
HYBRID SIGNAL CABLES

LINE COLOR CODE SPECIFICATIONS (1/RF04)

SEAL:

ENGINEER/LAND SURVEYOR DATE

REVISIONS

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2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
RF COLOR CODE SPECIFICATIONS

DRAWING NO:
RF04

SCALE: N/A
CEA PROJECT NO.: 88310.413
3/28/23

GENERAL PLUMBING NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE AND FULLY OPERATING SYSTEM INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY AS INDICATED ON DRAWINGS AND AS DESCRIBED IN THESE SPECIFICATIONS.

2. THE CONTRACTOR SHALL PERFORM ALL CUTTING, DEMOLISHING, REMOVAL, DISPOSAL, PATCHING, SEALING, RESTORATION AND ALL ELSE REQUIRED TO COMPLETE THE PLUMBING INSTALLATION.

3. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LOCALLY PRESIDING BUILDING CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

4. THIS CONTRACTOR SHALL PAY ALL FEES AND TAXES, OBTAIN ALL PERMITS AND APPROVALS, FILE THE REQUIRED DOCUMENTS AND CAUSE ALL INSPECTIONS.

5. SHOP DRAWINGS OF THE FOLLOWING SHALL BE SUBMITTED TO THE OWNER'S PROJECT REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION:

   A. LAYOUT OF ALL EQUIPMENT
   B. DIMENSIONED AND DETAILED PIPING LAYOUT
   C. MANUFACTURER'S SPECIFICATIONS OF ALL EQUIPMENT SPECIFIED
   D. DETAILED CONTROL WIRING DIAGRAMS

6. ALL PIPE HANGERS SHALL BE ATTACHED TO THE BUILDING/SUPPORT STRUCTURE. PROVIDE TRAPEZE SUPPORTS AS REQUIRED.

7. THE DRIVING OF HANGERS, CHIPPING, CORE DRILLING, WORK IN OTHER TENANT SPACES OR OCCUPIED AREAS, WORK CREATING FUMES ETC. OR WORK DEEMED BY THE OWNER TO BE A NUISANCE TO OTHER TENANTS SHALL BE DONE AFTER WORKING HOURS.

8. ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS AND FLOORS SHALL BE FIRESTOPPED WITH HILTI FIRESTOPPING MATERIAL. PROVIDE PIPE SLEEVES FOR ALL PENETRATIONS SEALED WITH AN APPROVED FIRESTOP.

9. THIS CONTRACTOR SHALL FURNISH A ONE (1) YEAR GUARANTEE ON PARTS AND LABOR OF THE INSTALLATION FROM THE DATE OF OWNER ACCEPTANCE AND A FIVE (5) YEAR COMPRESSOR WARRANTY WHERE AVAILABLE.

10. CONTRACTOR SHALL FURNISH ALL NECESSARY CONTROLS, STARTERS, PUMPS, MOTORS, PANELS AND RELAYS ETC. FOR A FULLY FUNCTIONING SYSTEM.

11. BAKELITE LABELS SHALL BE INSTALLED AT ALL NEW EQUIPMENT FOR IDENTIFICATION PURPOSES.

12. ANY REQUIRED SHUTDOWNS OF BASE BUILDING SYSTEMS FOR CONNECTION OF TENANT SYSTEMS MUST BE PRIOR APPROVED AND COORDINATED WITH ALL APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES. THIS CONTRACTOR SHALL ASSUME ALL FEES REQUIRED BY THE OWNER TO ARRANGE AND SUPERVISE THE SHUTDOWN(S).

13. THE CONTRACTOR SHALL VISIT THE LOCATIONS OF ALL PROPOSED WORK AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING AND FORECASTED CONDITIONS AND LIMITATIONS.

14. VERIFY ALL EXISTING CONDITIONS. ALL NEW PIPING AND EQUIPMENT SHALL BE COORDINATED WITH ALL EXISTING DUCTWORK, PIPING, ELECTRICAL AND GENERAL SITE CONDITIONS.

15. ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL AND GENERAL SITE CONDITIONS SHOWN ARE APPROXIMATE AND EXACT CONDITIONS MUST BE VERIFIED IN THE FIELD THROUGHOUT CONSTRUCTION.

16. ALL WORK SHALL CONFORM TO THE GOVERNING BASE BUILDING/PROPERTY STANDARDS.

17. THE CONTRACTOR SHALL COORDINATE WITH THE BASE BUILDING/PROPERTY MANAGEMENT AS TO THE DELIVERY OF EQUIPMENT AND SCHEDULING OF WORK SO AS TO NOT INTERFERE WITH THE OPERATION OF THE OCCUPIED FACILITIES. ANY REQUIRED SHUTDOWNS OF THE EXISTING BASE BUILDING/PROPERTY SYSTEMS OR WORK OUTSIDE OF THE DEMISING AREA SHALL BE STRICTLY COORDINATED WITH ALL APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES.

18. ALL ANCILLARY POWER AND LINE VOLTAGE WIRING SHALL BE DONE BY A LICENSED AND INSURED ELECTRICAL CONTRACTOR BASED UPON THE DRAWINGS FURNISHED BY THE MECHANICAL CONTRACTOR.

GENERAL PLUMBING NOTES (CONTINUED):

19. ALL MATERIAL AND APPARATUS SHALL BE NEW AND IN FIRST CLASS CONDITION. ALL MATERIAL AND APPARATUS SHALL HAVE MARKINGS OR A NAMEPLATE IDENTIFYING THE MANUFACTURER AND PROVIDING SUFFICIENT REFERENCE TO ESTABLISH QUALITY, SIZE AND CAPACITY. ALL WORKMANSHIP SHALL BE OF THE FINEST POSSIBLE BY EXPERIENCED MECHANICS OF THE PROPER TRADE. IN GENERAL, ALL MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE CONSIDERED ACCEPTABLE. ALL HOISTS, SCAFFOLDS, STAGING, RUNWAYS, TOOLS, MACHINERY AND EQUIPMENT REQUIRED FOR THE PERFORMANCE OF THE WORK SHALL BE FURNISHED BY THIS CONTRACTOR. MATERIAL AND EQUIPMENT SHALL BE STORED AND MAINTAINED IN CLEAN CONDITION AND PROTECTED FROM WEATHER, MOISTURE AND PHYSICAL DAMAGE.

20. THE CONTRACTOR SHALL PERSONALLY INSPECT THE SITE OF THE PROPOSED WORK DURING THE CUSTOMER'S BID WALK OR AS OTHERWISE ARRANGED WITH APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

21. DIRT AND REFUSE RESULTING FROM THE PERFORMANCE OF THE WORK SHALL BE REMOVED FROM THE PREMISES DAILY TO PREVENT ACCUMULATION. THE CONTRACTOR SHALL COOPERATE IN MAINTAINING REASONABLY CLEAN PREMISES AT ALL TIMES THROUGHOUT CONSTRUCTION. IMMEDIATELY PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL PERFORM A FINAL CLEANUP OF DIRT AND REFUSE RESULTING FROM THE WORK PERFORMED. THE CONTRACTOR SHALL CLEAN ALL MATERIAL AND EQUIPMENT INSTALLED UNDER THE CONTRACT. DIRT, DUST, PLASTER, STAINS AND ALL FOREIGN MATTER SHALL BE REMOVED FROM ALL SURFACES. DAMAGED FINISHES SHALL BE TOUCHED UP AND RESTORED TO THEIR ORIGINAL CONDITION.

22. THE DRAWINGS ARE SCHEMATIC IN NATURE, BUT SHOW THE VARIOUS COMPONENTS OF THE SYSTEMS APPROXIMATELY TO SCALE AND ATTEMPT TO INDICATE HOW THEY ARE TO BE INTEGRATED WITH OTHER PARTS OF THE BUILDING/STRUCTURE. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS. DETERMINE EXACT LOCATIONS BY FIELD MEASUREMENTS, CHECKING THE REQUIREMENTS OF OTHER TRADES AND BY REVIEWING ALL CONTRACT DOCUMENTS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS WHICH COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

GAS PIPING NOTES:

1. GAS PIPING SHALL BE DESIGNED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE LATEST REVISION AND IN ACCORDANCE WITH NFPA 54.

2. GAS PIPE SIZING SHALL BE BASED ON TABLE M-4814.1(2) IN THE BOCA NATIONAL MECHANICAL CODE. A MAXIMUM PIPE LENGTH OF 200 FT. SHALL BE USED FOR THIS DESIGN.

3. GAS PIPING SHALL BE OF MATERIAL SPECIFIED ON PLANS WITH ALL INDUSTRY STANDARD FITTINGS. WHERE GAS PIPING CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE SUPPLY PIPE, A 100# SHUT-OFF GAS COCK AND A UNION.

4. GAS PIPING HANGERS AND SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF "STANDARD PRACTICE FOR PIPE HANGERS AND SUPPORTS – MATERIALS, DESIGN, MANUFACTURE, SELECTION, APPLICATION AND INSTALLATION" (ANSI/MSS SP-58-2009). ALL PIPE SHALL BE SUPPORTED IN A NEAT AND WORKMANLIKE MANNER.

5. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS OR RUNNING THREADS. NO GAS VALVES SHALL BE INSTALLED IN ABOVE CEILING OR BELOW GRADE LOCATIONS.

6. ALL GAS VENTS FROM PRESSURE RELIEF OR PRESSURE LIMITING DEVICES SHALL BE PIPED THE FULL OUTLET SIZE AND SHALL BE FITTED WITH AN AGA APPROVED FITTING WITH INSECT SCREEN. PROVIDE CAULKING OR PROPER FLASHING AT VENTS.

7. BRANCH OUTLET PIPES SHALL BE TAKEN FROM THE TOP OR SIDES OF THE HORIZONTAL LINES AND NOT THE BOTTOM.

8. USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.

9. INSPECT, TEST AND PURGE THE GAS PIPING SYSTEM IN ACCORDANCE TO NFPA 54 – PART 4 AND ALL LOCAL REQUIREMENTS. MINIMUM REQUIREMENTS SHALL BE 6 PSIG FOR A PERIOD OF 2 HOURS.

PLUMBING PROCEDURAL, PREPARATION AND TESTING NOTES:

1. DUE TO THE NATURE OF THIS SYSTEM AND OTHER SIMILAR SYSTEMS IN USE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE SYSTEMS AS SPECIFIED. SUBSTITUTIONS SHALL NOT BE CONSIDERED AT THIS TIME UNLESS DIRECTED BY OWNER.

2. ALL WORK WITHIN LIVE ELECTRICAL PANELS SHALL OCCUR DURING HOURS ACCEPTABLE TO THE PANEL OWNER.

3. THE CONTRACTOR SHALL PROVIDE TWO (2) DAYS ADVANCED NOTIFICATION OF ALL DELIVERIES TO THE SITE AND SEVEN (7) DAYS ADVANCED NOTIFICATION OF ANY REQUIRED SERVICE SHUT-DOWNS.

4. THE CONTRACTOR SHALL MAINTAIN INTERFACE WITH THE OWNER AND WITH ALL OF THEIR CONTRACTORS, VENDORS AND ENGINEERING FIRMS.

5. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING TO BE HELD AT THE JOB SITE OR IN THE AREA WHERE THE INSTALLATION WILL TAKE PLACE.

6. PRIOR TO THE START OF CONSTRUCTION, ALL WORKERS SHALL BE BRIEFED ON ALL SAFETY REQUIREMENTS PERTINENT TO THE WORKING ENVIRONMENT.

7. THE CONTRACTOR SHALL INSURE THE AVAILABILITY AND ACCESSIBILITY OF ADEQUATE ON-SITE FIRE EXTINGUISHERS, SAFETY EQUIPMENT BOARDS AND FIRST AID STATIONS.

8. ALL CONNECTIONS, TEST MEASUREMENTS AND ADJUSTMENTS SHALL BE DIRECTLY WITNESSED BY AN OWNER APPROVED PROJECT SUPERVISOR.

9. PRIOR TO THE START-UP OF THE SYSTEMS, THE CONTRACTOR SHALL CHECK ALL COMPONENTS AND DEVICES, LUBRICATE ITEMS ACCORDINGLY AND TIGHTEN ALL CONNECTIONS. AFTER ALL SYSTEMS HAVE BEEN INSPECTED AND ADJUSTED, CONFIRM ALL OPERATING FEATURES REQUIRED BY THE DRAWINGS AND SPECIFICATIONS AND MAKE FINAL ADJUSTMENTS AS NECESSARY.

10. APPROPRIATE FACTORY REPRESENTATIVES SHALL BE ON SITE TO COMMISSION THE SYSTEM.

11. CONTRACTOR SHALL INSPECT AND TEST ALL PIPING AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS AND EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

12. AUTHORIZED PERSONNEL SHALL CONDUCT CLEANING, PURGING AND TESTING PROCEDURES. TESTING OF PIPING SHALL UTILIZE HYDROSTATIC OR PNEUMATIC MEASURES. OXYGEN OR LP GAS IS NOT TO BE USED.

13. PURGE PIPING WITH INERT GAS PRIOR TO INTRODUCING LP GAS.

14. CONDUCT A FUNCTIONAL TEST OF ALL ISOLATION VALVES, EXCESS FLOW VALVES AND PRESSURE RELIEF VALVES.

15. CONTRACTOR SHALL SUBMIT TO THE OWNER THREE (3) COPIES EACH OF MATERIAL FOR MAINTENANCE AND OPERATION INSTRUCTION MANUALS APPROPRIATELY BOUND INTO MANUAL FORM INCLUDING APPROVED COPIES OF MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, MAINTENANCE INSTRUCTIONS, OPERATING INSTRUCTIONS AND PARTS LISTS (REVISED IF NECESSARY TO SHOW SYSTEM AND EQUIPMENT AS ACTUALLY INSTALLED). CONTRACTOR SHALL ALSO PROVIDE ADEQUATE VERBAL INSTRUCTIONS OF SYSTEM OPERATION AND RE-START TO OWNER'S REPRESENTATIVE AT THE CONCLUSION OF THE WORK.

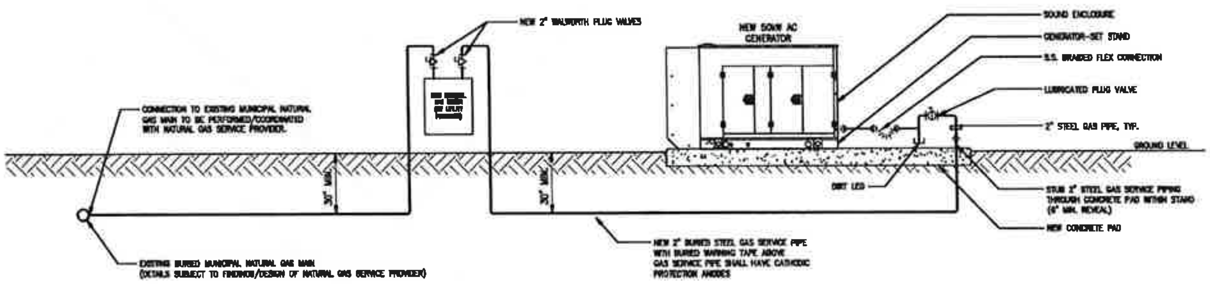
GENERATOR: GENERAC SG080NA (NATURAL GAS)
SUPPLIED BY VERIZON,
INSTALLED BY CONTRACTOR.

CONTRACTOR SHALL OBTAIN FULL SPECIFICATIONS FROM VERIZON WIRELESS PRIOR TO BID.

CONTRACTOR SHALL ARRANGE FOR GENERATOR START-UP SERVICES.

LEGEND

—⊠—	PLUG VALVE
—‖—	UNION
⊢⊃⊣	PIPE DROP
⊢O	PIPE RISE
⊂□	PUSH BUTTON SWITCH



NOTE:
ALL DETAILS SHOWN SCHEMATICALLY. THE CONTRACTOR SHALL COORDINATE WITH GAS SUPPLIER TO REVIEW ALL COMPONENTS AND PERFORM A PRESSURE TEST TO INSURE A COMPATIBLE FUEL DELIVERY ARRANGEMENT IS MADE TO THE GENERATOR. NATURAL GAS SUPPLIER SHALL ALSO REVIEW ALL SAFETY COMPONENTS TO INSURE THEY MEET THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

NATURAL GAS PIPING SCHEMATIC (1/P01)
SCALE: NOT TO SCALE

CLIENT: verizon✓

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
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www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR — DATE

DRAWING SCALE NOTE:

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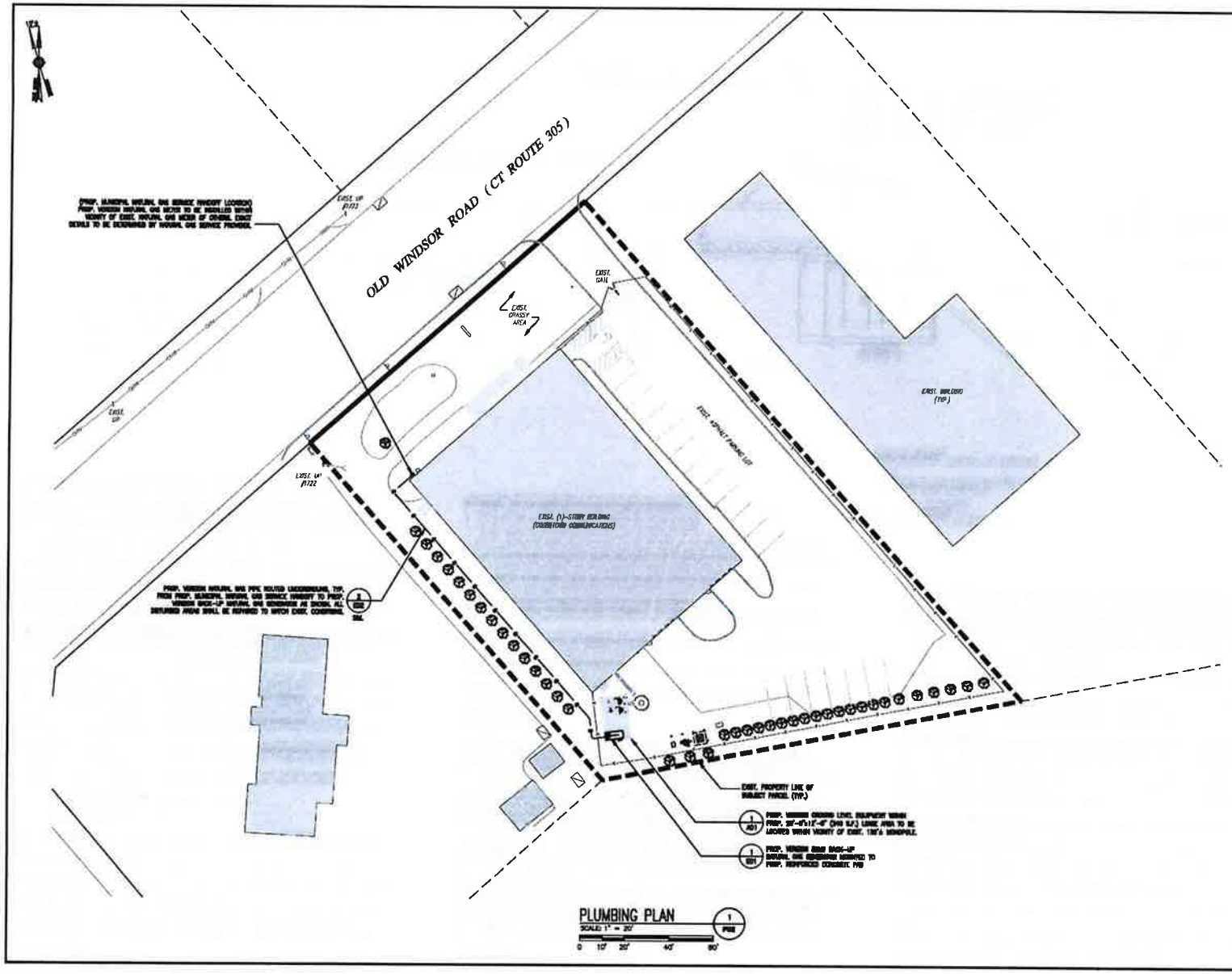
REVISIONS		
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
PLUMBING NOTES AND SCHEMATIC

DRAWING NO:
P01

SCALE: NOT TO SCALE
CEA PROJECT NO.: 06210.413
ORIGINAL ISSUE DATE: 3/28/23



CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSN REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/26/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

SITE PLUMBING PLAN

DRAWING NO:

P02

SCALE:	DRAWN BY:	NEW PROJECT NO:
1" = 20'	CHECKED BY:	
CEA PROJECT NO:	ORIGINAL ISSUE DATE:	NEW LOCATION CODE:
98210.413	3/28/23	
		NEW LICENSED ID:

ELECTRICAL SPECIFICATIONS

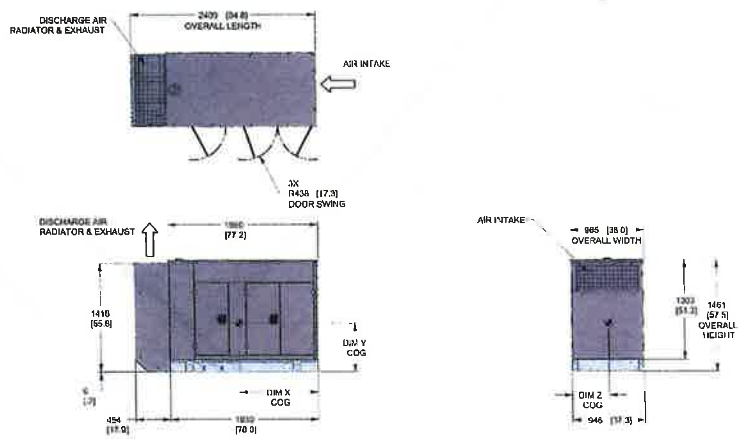
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO MAKE READY FOR USE THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS. MAKE ALL NECESSARY CONNECTIONS AT "PACKAGED" EQUIPMENT.
2. THE ELECTRICAL SYSTEMS SHALL BE SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. ALL MATERIAL AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THE WORK SHALL BE FURNISHED AT NO EXTRA COST.
3. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND NATIONAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   THE 2022 CONNECTICUT STATE BUILDING CODE
   THE NATIONAL ELECTRICAL CODE (NFPA-70)
   THE CONNECTICUT ELECTRIC CODE
   THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
   THE LIFE SAFETY CODE (NFPA 101)
   THE STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURE AND ANTENNAS (TIA/EIA-222-H)
4. MATERIALS AND EQUIPMENT SHALL BE NEW, UNUSED AND UNDERWRITERS' LABORATORIES, INC. LISTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS IN A TIMELY FASHION, INCLUDING RESPONSIBILITY FOR DETERMINING AVAILABILITY/LEAD TIME FOR ALL NECESSARY EQUIPMENT.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES FOR PERMITS AND INSPECTIONS. WHERE NEW COMMERCIAL POWER SERVICE IS PROVIDED TO THE SITE, OR EXISTING SERVICE MUST BE MODIFIED, CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE ELECTRIC UTILITY, SHALL PERFORM ALL OF HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY, AND SHALL PAY ALL UTILITY SERVICE BACK CHARGES.
6. ALL WIRING OUTSIDE SHALL BE INSTALLED IN HEAVY-GAUGE, (SCHEDULE 40) RIGID STEEL CONDUIT, HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE WITH AN ADDITIONAL, FACTORY-APPLIED FINISH INSIDE AND OUTSIDE. CUT ENDS SHALL BE REAMED, THREADED AND COLD GALVANIZED. NO COMPRESSION FITTING WILL BE ACCEPTED.
7. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 AND INSTALLED NOT LESS THAN 30 INCHES BELOW FINISHED GRADE.
8. WIRING INSTALLED IN THE BUILDING THAT IS SHOWN TO BE IN CONDUIT SHALL BE INSTALLED IN EMT. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
9. LIQUID TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL MOTOR TERMINATIONS AND FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION. FLEXIBLE METAL CONDUIT SHALL CONSIST OF A FLEXIBLE, CORROSION RESISTANT METAL CORE WITH AN EXTRUDED, WATERTIGHT, SYNTHETIC JACKET. CONDUITS SMALLER THAN 1-1/2" SHALL HAVE A CONTINUOUS GROUND CONDUCTOR UNDER THE JACKET.
10. NO CONDUIT SMALLER THAN 3/4" ELECTRICAL TRADE SIZE SHALL BE USED, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS. BOX SIZES SHALL BE 4" SQUARE MINIMUM, BUT NOT LESS THAN THAT REQUIRED BY THE CONNECTICUT ELECTRICAL CODE.
11. FITTINGS AND EXPOSED SWITCH, OUTLET AND CONTROL STATION BOXES AND OTHER EXPOSED BOXES 4" SQUARE SHALL BE CAST OR MALLEABLE IRON WITH CADMIUM-ZINC FINISH AND CAST COVERS WITH STAINLESS STEEL SCREWS.
12. FLUSH SWITCH AND OUTLET BOXES SHALL BE HOT-DIPPED GALVANIZED, PRESSED STEEL WITH NYLON COVER PLATES, COLOR AS DETERMINED BY THE ENGINEER.
13. EXCEPT AS OTHERWISE SHOWN, TERMINAL, JUNCTION AND PULL BOXES LARGER THAT 4" SQUARE SHALL BE SHEET STEEL. STEEL BOXES SHALL BE HOT-DIPPED GALVANIZED. BOXES AND COVERS SHALL BE NOT LESS THAN 14 GAUGE METAL. COVERS SHALL BE GASKETED AND FASTENED WITH STAINLESS STEEL HARDWARE.
14. FITTINGS USED WITH LIQUID TIGHT FLEXIBLE CONDUIT SHALL BE OF THE SCREW-IN, COMPRESSION TYPE WITH SEALING RING. FITTINGS LARGER THAN 1-1/4" SHALL BE FURNISHED WITH INTERNAL GROUND LUGS.
15. HANGERS, RODS, BACK PLATES, BEAM CLAMPS, ETC. SHALL BE GALVANIZED IRON OR STEEL. CONDUITS SHALL BE SUPPORTED AT LEAST EVERY 8 FEET.
16. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS. CONDUIT RUNS SHALL BE STRAIGHT AND TRUE. CONDUIT SHALL BE SUPPORTED BY MEANS OF TWO-HOLE PIPE CLAMPS. BACK PLATES SHALL BE INSTALLED WHERE REQUIRED TO RAISE CONDUITS FROM THE SURFACE. MULTIPLE, HORIZONTAL RUNS SHALL BE SUPPORTED ON TRAPEZE HANGERS WITH STEEL HORIZONTAL MEMBERS AND THREADED RODS NOT LESS THAN 3/8 INCHES IN DIAMETER. HANGERS SHALL BE ATTACHED TO STRUCTURAL STEEL BY MEANS OF BEAM CLAMPS. SPOT TYPE INSERTS SHALL BE USED IN CONCRETE.
17. CONDUIT BENDS SHALL BE CAREFULLY MADE TO PREVENT DISTORTION OF THE CIRCULAR CROSS-SECTION. NO CONDUIT RUN SHALL HAVE MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN PULLING POINTS. CHANGES IN DIRECTION SHALL BE MADE WITH BENDS, STANDARD ELBOWS AND PULLBOXES. BENDS IN PARALLEL RUNS SHALL BE CONCENTRIC.
18. CONDUIT SHALL NOT BE SUPPORTED FROM PIPING, PIPING SUPPORTS, DUCTWORK, SUSPENDED CEILING SUPPORTS OR MECHANICAL EQUIPMENT SUBJECT TO VIBRATION OR REMOVAL.
19. THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY PLUGGED DURING BUILDING CONSTRUCTION UNTIL WIRES ARE TO BE PULLED. SPARE CONDUITS SHALL BE FURNISHED WITH THREADED CAPS.
20. CONDUITS SHALL BE TERMINATED AT UNGASKETED SHEET STEEL BOXES AND ENCLOSURES WITH DOUBLE LOCK NUTS AND SUITABLE BUSHINGS. BUSHINGS INSTALLED ON CONDUITS CONTAINING GROUND WIRES SHALL BE GROUNDING TYPE. CONDUITS SHALL BE TERMINATED AT GASKETED SHEET METAL BOXES AND ENCLOSURES WITH CONDUIT HUBS.
21. CONDUCTORS SHALL BE ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT-DRAWN COPPER. NO CONDUCTOR SMALLER THAT NO. 12 AWG SHALL BE USED, EXCEPT AS OTHERWISE NOTED.
22. WIRE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE 600 VOLT, TYPE THHN. WIRE FOR CONTROL CIRCUITS SHALL BE 600 VOLT, TYPE THHN, NO. 14 AWG, STRANDED. SERVICE CONDUCTORS AND FEEDERS SHALL BE TYPE XHHW. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID. NO. 8 AWG AND LARGER SHALL BE STRANDED.
23. ALL CONDUCTORS SHALL BE CAREFULLY HANDLED TO AVOID KINKS OR DAMAGE TO INSULATION. LUBRICATIONS SHALL BE USED TO FACILITATE WIRE PULLING. LUBRICANTS SHALL BE UL LISTED FOR USE WITH THE INSULATION SPECIFIED.
24. ALL EQUIPMENT AND MATERIALS SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE CONNECTICUT ELECTRICAL CODE, AND THE STANDARD REQUIREMENTS OF VERIZON WIRELESS AND LUCENT.
25. DISCONNECT SWITCHES SHALL BE 480 OR 240 VOLT, HEAVY-DUTY, QUICK-MAKE, QUICK BREAK, VISIBLE BLADE, 2 POLE WITH EXTERNAL OPERATING HANDLE AND FULL COVER INTERLOCK. SWITCHES INSTALLED OUTSIDE SHALL BE NEMA TYPE 3R ENCLOSED.
26. WALL SWITCHES SHALL BE SINGLE POLE 3-WAY OR 4-WAY, INDICATING, TOGGLE-ACTION, FLUSH, QUIET TYPE, SPECIFICATION GRADE, RATED 20 AMPERE, 120-277 VOLT. COLOR AS DETERMINED BY ENGINEER.
27. GENERAL PURPOSE RECEPTACLES SHALL BE DUPLEX, 2 POLE, 3 WIRE, STRAIGHT BLADE, NYLON FACE, GROUNDING TYPE, 20 AMPERE, 125 VOLT, SPECIFICATION GRADE. COLOR AS DETERMINED BY ENGINEER.
28. PANELS SHALL BE PER DIRECTED BY THESE DRAWINGS WITH TYPED DIRECTORIES.
29. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC TYPE WITH RMS SYMMETRICAL INTERRUPTING RATINGS OF NOT LESS THAN 22,000 AMPERE FOR 240 VOLT BREAKERS. ENCLOSED BREAKERS SHALL HAVE PADLOCKING PROVISIONS AND EXTERNAL OPERATING HANDLE WITH FULL COVER INTERLOCK. BREAKERS SHALL BE 1" MODULES MINIMUM.
30. NAMEPLATES SHALL BE PROVIDED FOR ALL COMPONENT INDICATING VOLTAGE, PHASE, USE AND SOURCE OF ORIGIN. DEVICES SHALL BE LABELED INDICATING VOLTAGE AND BRANCH CIRCUIT. BRANCH CONDUCTORS SHALL BE LABELED INDICATING BRANCH CIRCUIT. FEEDER CONDUCTORS SHALL INDICATE PHASE.
31. ALL EXTERIOR CONNECTOR/LUG TERMINALS SHALL HAVE AN ANTIOXIDANT APPLIED.
32. ALL SPRING TYPE WIRE CONDUCTORS USED IN EXTERIOR BOXES SHALL BE SILICON FILLED.
33. ELECTRICAL CONTRACTOR SHALL AS PART OF HIS WORK INCLUDE ALL FITTINGS, SLEEVES AND MINOR CUTTING REQUIRED FOR HIS WORK, INCLUDING FIRES-STOPPING.
34. THE ELECTRICAL CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE HIS OWN, WHERE DIRECTED, STORAGE AND OFFICE SPACE.
35. FIVE COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
36. ELECTRICAL CONTRACTOR'S WORK SHALL INCLUDE ALL LABOR AND MATERIALS, SCAFFOLDING TOOL AND TRANSPORTATION NECESSARY FOR COMPLETE INSTALLATION.
37. ELECTRICAL CONTRACTOR TO FURNISH ENGINEER ONE SET OF MYLARS OF "AS BUILT" DRAWINGS.
38. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY POWER & LIGHTING AS NEED.

GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE TO BECOME AWARE OF THE EXISTING CONDITIONS.
2. BRANCH CIRCUIT RUNS 100 FT AND OVER SHALL BE #10 AWG CONDUCTORS.
3. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHT, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PLUMBING CONTRACTORS AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT, THE POWER WIRING, THE CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS REQUIRED BY THIS CONTRACTOR FOR COMPLETELY OPERATIVE HVAC AND PLUMBING SYSTEMS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. INTERRUPTIONS TO THE EXISTING ELECTRICAL SERVICE FOR SPLICING CONNECTIONS, RENOVATION OF EXISTING DISTRIBUTION, BRANCH CIRCUITS, INSTALLATION OF NEW ELECTRIC SERVICE, AND SHALL BE AS SHORT AS POSSIBLE, AND TO THE CONVENIENCE OF THE OWNER.
6. ALL CONDUIT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. NO INTERIOR HORIZONTAL CONDUIT BELOW 7'-6" AFF IN FINISHED SPACES.
7. ALL WIRING TO BE 3/4"C, 2#12 & 1#12 GROUND, UNLESS OTHERWISE NOTED.
8. NO BX OR ROMEX CABLE IS PERMITTED.
9. ALL WIRING DEVICES AND EQUIPMENT SHALL BE 20A SPECIFICATION GRADE AND UL LISTED.
10. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED.
11. ALL RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS.
12. ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE PVC SLEEVES.
13. ALL SWITCHES SHALL BE FORTY-EIGHT (48) INCHES AFF, UNLESS OTHERWISE NOTED.
14. ALL RECEPTACLES SHALL BE EIGHTEEN (18) INCHES AFF, UNLESS OTHERWISE NOTED.
15. ALL WIRING SHALL BE IN METAL RACEWAY & NO. 12 AWG COPPER MIN. UNLESS OTHERWISE NOTED.
16. WIRE COLOR SHALL BE PER STANDARD CODING BY PHASE.
17. FOR UTILITY BILLING, PLEASE SEND TO:
    VERIZON WIRELESS
    20 ALEXANDER DRIVE, 2nd FLOOR
    WALLINGFORD, CT 06492

GROUNDING GENERAL NOTES

1. ALL EXTERIOR CONDUCTORS SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. MINIMUM BEND RADIUS SHALL BE EIGHT (8) INCHES.
2. ALL CONNECTIONS TO HALO GROUND RING AND ALL CABLE TRAY JUMPERS SHALL BE #6 AWG, INSULATED, STRANDED, COPPER WIRE.
3. ALL WIRE-TO-WIRE CONNECTIONS SHALL BE THREE-CLAMP, C TAP COMPRESSION (T&B #54740 ORANGE OR EQUIVALENT). ALL GROUND BAR CONNECTIONS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS (T&B OR EQUIVALENT). ALL OTHER CONNECTIONS TO STEEL SURFACES SHALL USE LUG-TYPE CONNECTORS.
4. MECHANICALLY BOND ANTENNA MOUNTS WITH #2 AWG, BARE, STRANDED CONDUCTORS.
5. ALL GROUNDING WORK SHALL COMPLY WITH VERIZON WIRELESS STANDARDS.
6. CONNECT GROUND CONDUCTOR TO EXISTING GROUNDING SYSTEM. ATTACH TO WALLS, PARAPET, CABLE TRAY, ETC. WITH A CLAMPS AS NECESSARY. REMOVE PAINT, FIREPROOFING, MILL SCALE, ETC. TO ACHIEVE GOOD CAD WELD GROUND CONNECTION.
7. CONNECT TO HALO GROUND USING C-TAP (#54730).
8. CONNECT TO ENCLOSURES USING BLUE GROUND LUGS.



GENERAC 50kW NATURAL GAS GENERATOR (PART #SG050NA)
OVERALL GENERATOR (ENCLOSURE) APPROXIMATE
DIMENSIONS: 94.8"L x 38.0"W x 57.5"H
APPROXIMATE MAX. IN-SERVICE WEIGHT: 2,097 lbs

GENERATOR DETAIL (1/E01)
SCALE: NONE

LEGEND

ELECTRICAL SYMBOLS

Symbol	Description
(M)	METER
⊠	GROUND ROD/TEST (OBSERVATION) WELL
⊗	GROUND ROD
▲	CADWELD TYPE CONNECTION
●	COMPRESSION TYPE CONNECTION
- - -	GROUNDING WIRE
(1/E02)	REPRESENTS DETAIL NUMBER
▭	1'X4' SURFACE MTD. FLUORESCENT LIGHTING FIXTURE
	SELF CONTAINED EMERG. LIGHTING UNIT
S	20A-120V-1P TOGGLE SWITCH
	MAGNETIC DOOR SWITCH (DOOR JAMB TYPE)
	20A-120V QUADRAPLEX RECEPTACLE, GROUNDING TYPE, 2-CKT. RO.
WP/GFI	20A-120V DUPLEX RECEPTACLE, GROUNDING TYPE. WP = WEATHERPROOF, GFI = GROUND FAULT
TL	SIMPLEX RECEPTACLE, GROUNDING TYPE. TL = TWIST LOCK
	JUNCTION BOX
	PANELBOARD 'P1'
*	MOTOR - NUMERAL DENOTES HORSEPOWER
	WEATHER PROOF DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH - '3R' & '1' - NEMA ENCLOSURE
*	THERMOSTAT *T_H - HI TEMPERATURE ALARM THERMOSTAT
*	HUMIDSTAT *$H_{H/L}$ - HI/LO HUMIDITY ALARM HUMIDSTAT
	COMBINATION SMOKE/HEAT DETECTOR WITH MINI HORN SIMPLEX CAT.#2098-9806 WITH FORM A & C CONTACTS
P1-2	HOMERUN TO PANEL (FURNISH & INSTALLED BY MECHANICAL)
	SURGE ARRESTOR - JOSLYN CAT. NO. 1456-65
AFF	ABOVE FINISHED FLOOR
*	MOTORIZED DAMPER
	EXPOSED CONDUIT 2#12-3/4"C.
	ALARM TERMINAL CABINET

*EQUIPMENT FURNISHED AND INSTALLED BY OTHERS AND WIRED BY THIS CONTRACTOR

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
GPS	GLOBAL POSITIONING SYSTEM
PCS	PERSONAL COMMUNICATION SYSTEM
RWY	RACEWAY
TYP.	TYPICAL
RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING
DWG	DRAWING
EMT	INTERIOR GROUND RING (HALO)
GEN	GENERATOR
GR	GROWTH
CGBE	COAX GROUND BAR EXTERNAL
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER GROUND BAR
PVC	RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
EBH	ETHERNET BACK HAUL

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC

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ENGINEER/LAND SURVEYOR — DATE

DRAWING SCALE NOTE:
THESE DRAWINGS HAVE BEEN PREPARED IN 11X17 (24"X36") FORMAT. AS SUCH, THE WRITTEN SCALES SHOWN ... REPRODUCTIONS OF A ... SHALL BE ... ALL ... IN CONFLICT, ... WRITTEN SCALES.

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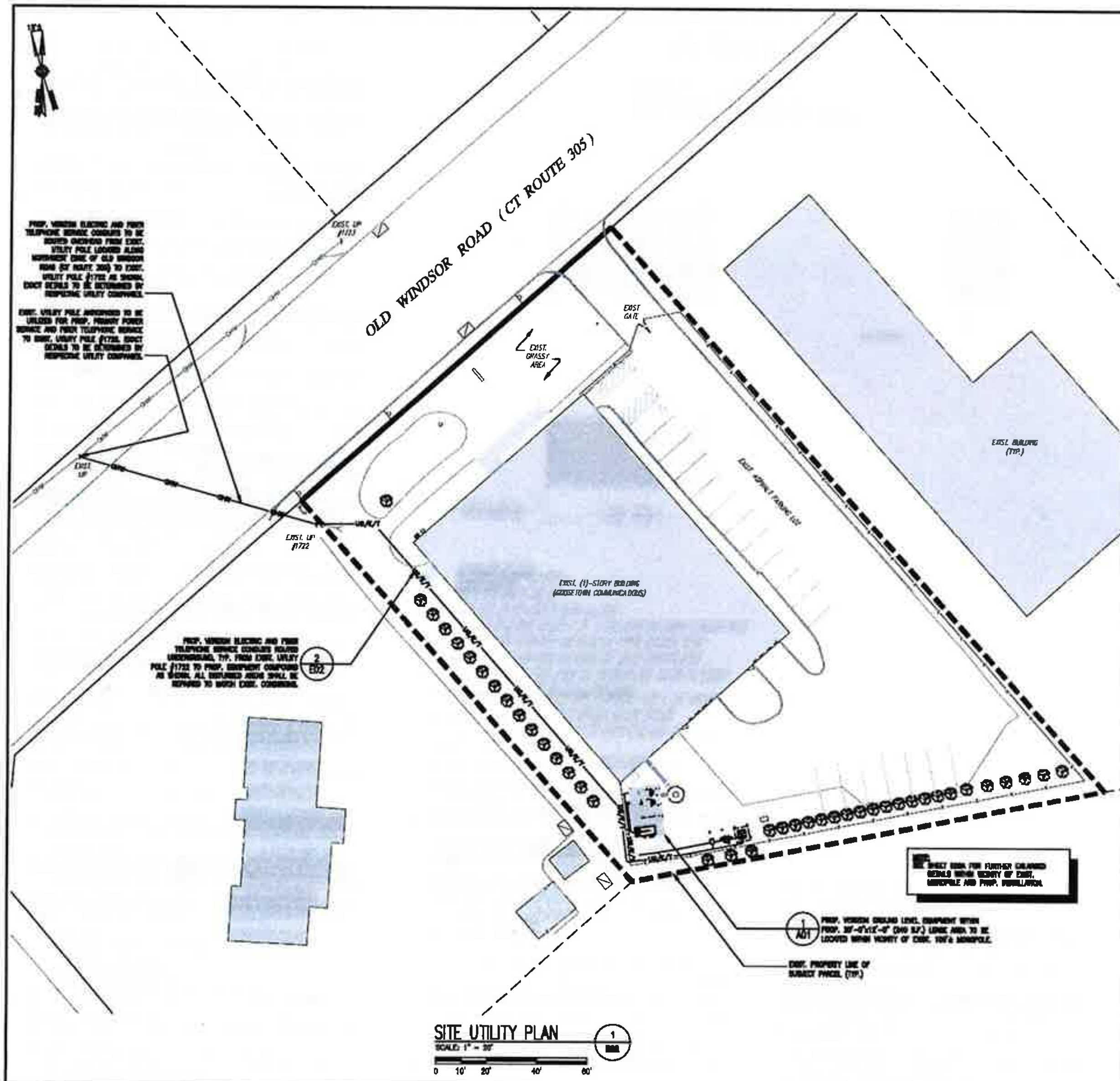
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

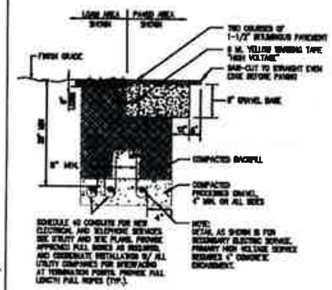
DRAWING TITLE:
ELECTRICAL SPECIFICATIONS AND NOTES

DRAWING NO:
E01

SCALE: AS SHOWN	DESIGNED BY / DRAWN BY / CHECKED BY	VZW PROJECT NO.: 16133867
CEA PROJECT NO.: 06210.413	ORIGINAL ISSUE DATE: 3/28/23	VZW LOCATION CODE: 792009 / VZW LOCATION ID: 5000000000



SITE UTILITY PLAN
SCALE: 1" = 20'
0 10' 20' 40' 60'



TYPICAL BURIED CONDUIT DETAIL
SCALE: NONE

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

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PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

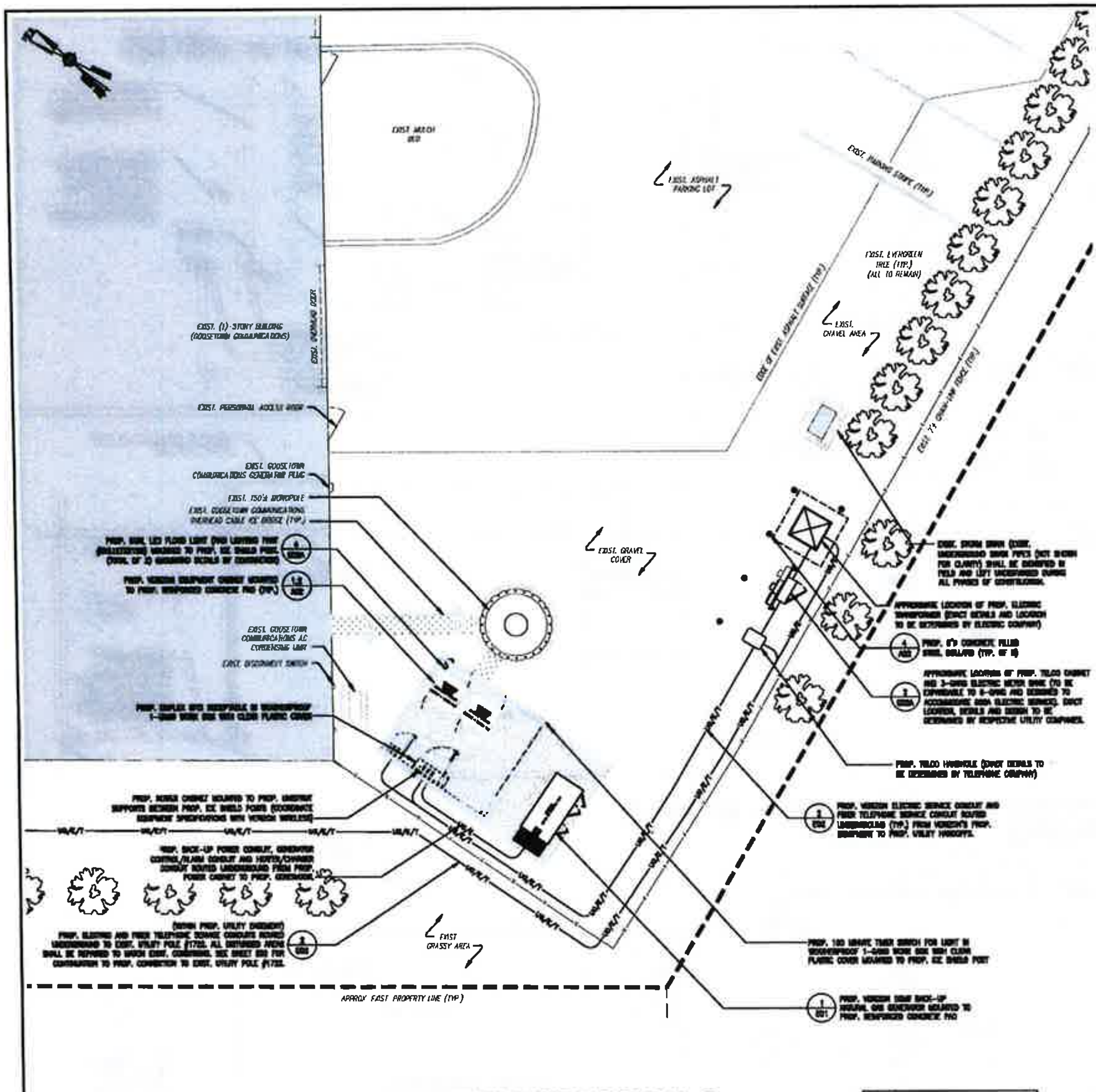
DRAWING TITLE:

SITE UTILITY PLAN & DETAILS

DRAWING NO:

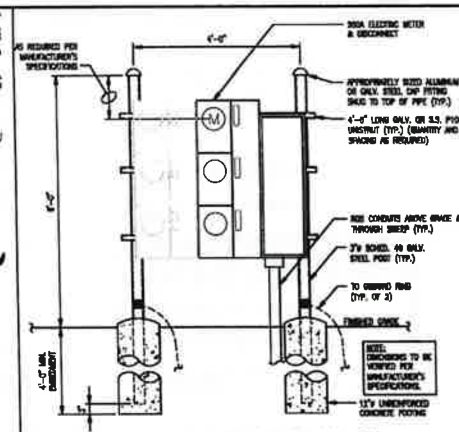
E02

SCALE: AS NOTED
CEA PROJECT NO.: 98210.413
3/28/23

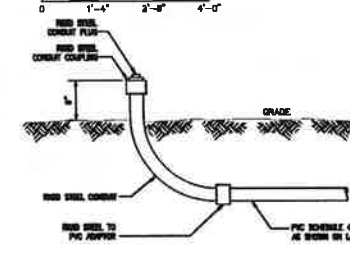


MONOPOLE VICINITY UTILITY PLAN (1/E02A)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

NOTES:
1.) SEE ONE LINE DIAGRAMS ON SHEET E03 FOR FURTHER CIRCUIT DETAILS



ELECTRIC METER UNISTRUT RACK (2/E02A)
SCALE: 3/4"=1'-0"
0 1'-4" 2'-8" 4'-0"



TYPICAL CONDUIT STUB-UP DETAIL (3/E02A)
SCALE: NONE

TYPICAL LED FLOOD LIGHT DETAIL (4/E02A)
SCALE: N.T.S.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

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BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

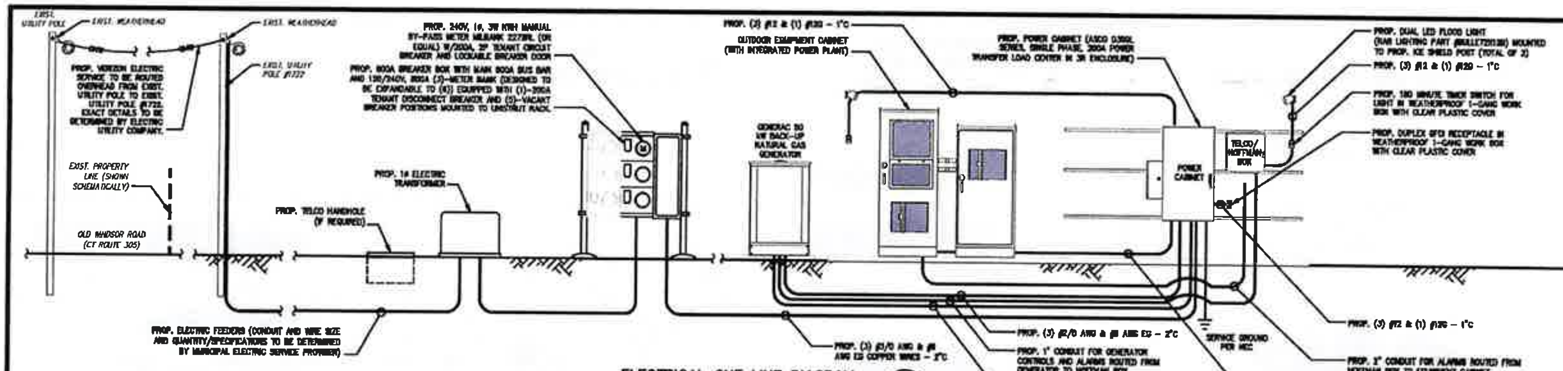
DRAWING TITLE:

MONOPOLE VICINITY UTILITY PLAN & DETAILS

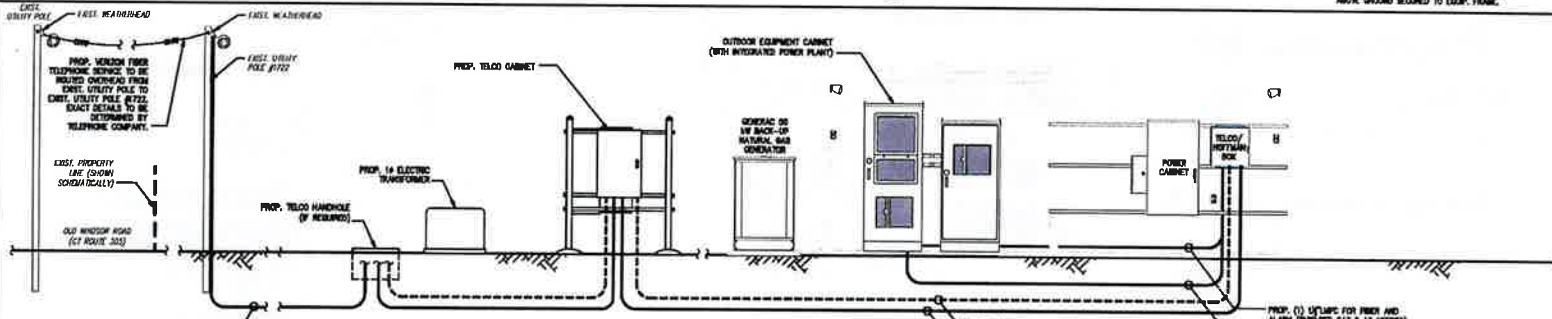
DRAWING NO:

E02A

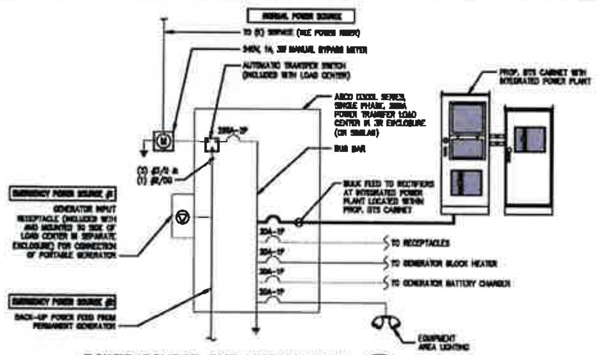
SCALE:		
AS SHOWN		
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
98210.413	3/28/23	



ELECTRICAL ONE LINE DIAGRAM (1E / E03)
SCALE: NOT TO SCALE



TELCO/FIBER ONE LINE DIAGRAM (1T / E03)
SCALE: NOT TO SCALE



POWER SOURCE ONE LINE DIAGRAM (2 / E03)
SCALE: NOT TO SCALE

ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE — ELECTRICAL PANEL SCHEDULE — NEMA 3R

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1 / 3	RECTIFIER #1	30	30	FUTURE RECTIFIER	2 / 4
5 / 7	RECTIFIER #2	30	30	FUTURE RECTIFIER	6 / 8
9 / 11	RECTIFIER #3	30	20	PAD LIGHTING	10
			-	BLANK	12
13 / 15	RECTIFIER #4	30	-	BLANK	14
			-	BLANK	16
17	GFCI RECEPTACLE/LIGHT	20	-	BLANK	18
19	GENERATOR BLOCK HEATER	20	-	BLANK	20
21	GENERATOR BATTERY CHARGER	20	-	BLANK	22
23	BLANK	-	-	BLANK	24
25	BLANK	-	-	BLANK	26
27	BLANK	-	-	BLANK	28
29	BLANK	-	-	BLANK	30

ELECTRICAL PANEL SCHEDULE (3 / E03)
SCALE: NTS

ONE-LINE DIAGRAM NOTES:

1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS INSIDE AND OUT.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

3) ALL CONDUIT ROUTING SHOWN ON THESE DIAGRAMS IS SCHEMATIC IN NATURE AND INTENDED TO CONVEY GENERAL INTENT ONLY.

4) ALL PROPOSED UTILITY DESIGN ELEMENTS SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN TO BE PROVIDED BY UTILITY PROVIDERS AND VERIZON WIRELESS. CONTRACTOR SHALL OBTAIN A COPY OF THE FINAL UTILITY DESIGN BY UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK.

UTILITY CONTACTS

ELECTRICAL: EVERSOURCE ENERGY, 247 STATION DRIVE, SE 210, WESTWOOD, MA 02090, (781) 441-3810

TELEPHONE: VERIZON, 185 FRANKLIN STREET, BOSTON, MA 02107, (800) 941-9900

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS

CLIENT: verizon

ARCHITECT/ENGINEER: CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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REVISIONS

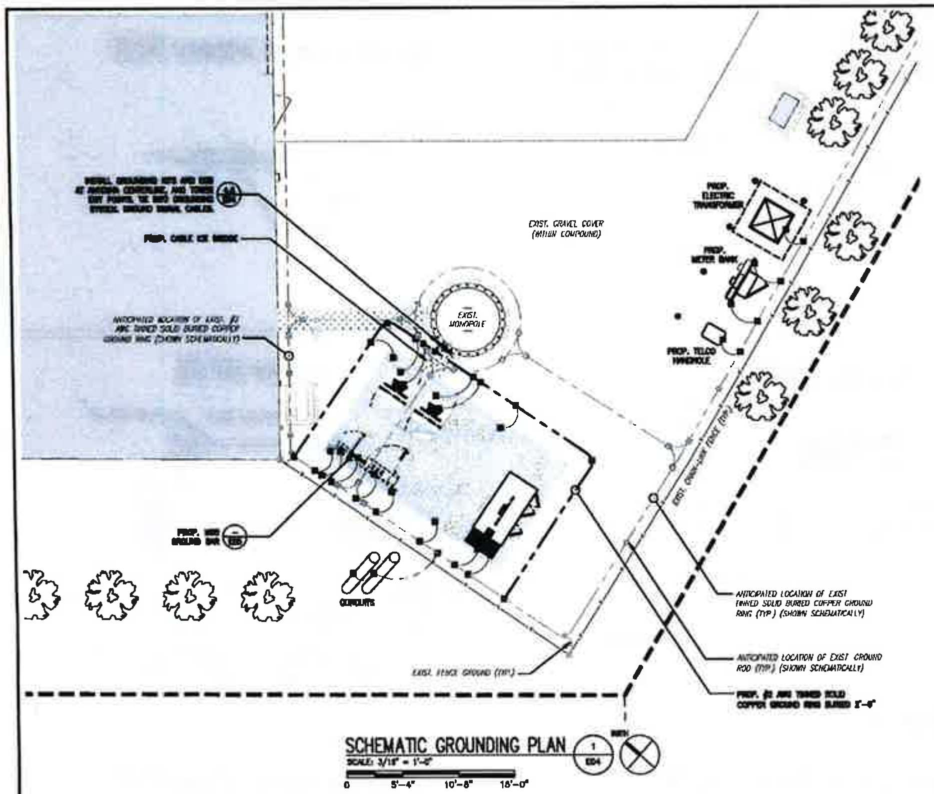
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TIA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/12/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
ELECTRICAL DIAGRAMS & DETAILS

DRAWING NO:
E03

SCALE: AS SHOWN		VZW PROJECT NO.: 16133867
CEA PROJECT NO.: 08210.413	ORIGINAL ISSUE DATE: 3/28/23	VZW LOCATION CODE: 793600



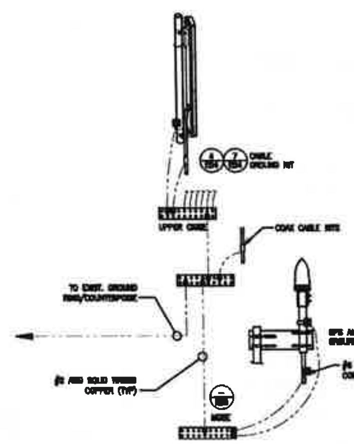
SCHEMATIC GROUNDING PLAN (1 / E04)

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

GROUNDING LEGEND

- ■ EXOTHERMIC GROUND
- • GROUND ROD
- ⊙ TEST WELL
- PROP. #2 AWG EQUIPMENT GROUNDING
- PROP. GROUND HALO
- EXIST. SITE GROUNDING (SHOWN SCHEMATICALLY)



ANTENNA GROUNDING RISER DIAGRAM (2 / E04)

SCALE: NOT TO SCALE

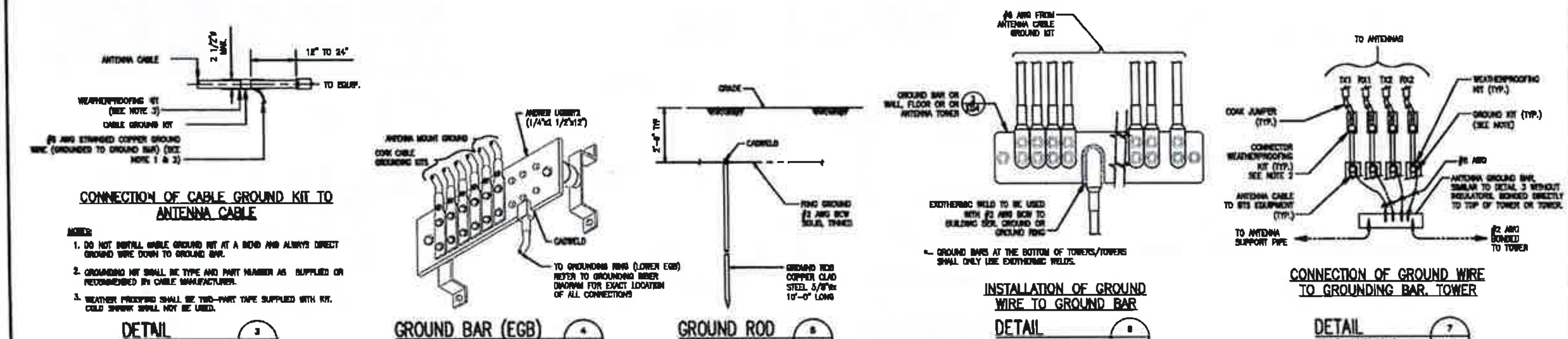
ELECTRICAL AND GROUNDING NOTES:

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1Ø, 60 Hz.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

GROUNDING

5. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"Ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
12. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
15. ANTENNA GROUND KITS SHALL BE FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.



CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

DETAIL (3 / E04)

SCALE: NOT TO SCALE

GROUND BAR (EGB) (4 / E04)

SCALE: NOT TO SCALE

GROUND ROD (5 / E04)

SCALE: NOT TO SCALE

INSTALLATION OF GROUND WIRE TO GROUND BAR

*- GROUND BARS AT THE BOTTOM OF TOWERS/TOWERS SHALL ONLY USE EXOTHERMIC WELDS.

DETAIL (6 / E04)

SCALE: NOT TO SCALE

CONNECTION OF GROUND WIRE TO GROUNDING BAR, TOWER

DETAIL (7 / E04)

SCALE: NOT TO SCALE

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
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SEAL:

ENGINEER/LAND SURVEYOR DATE

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PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

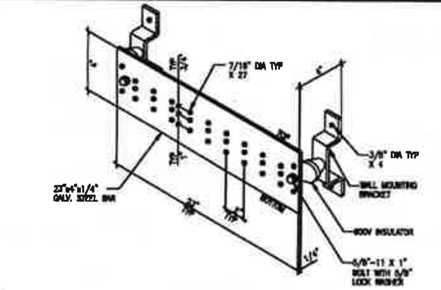
DRAWING TITLE:

SCHEMATIC GROUNDING PLAN & DETAILS

DRAWING NO:

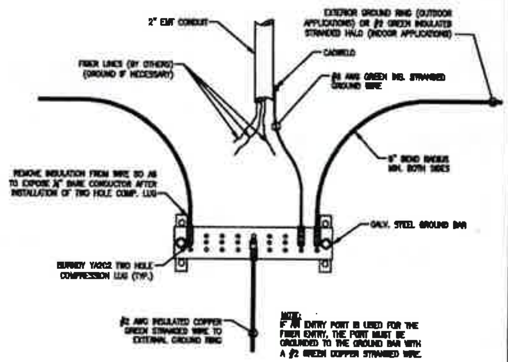
E04

SCALE:		
AS SHOWN		
CEA PROJECT NO.:		
98210.413	3/28/23	



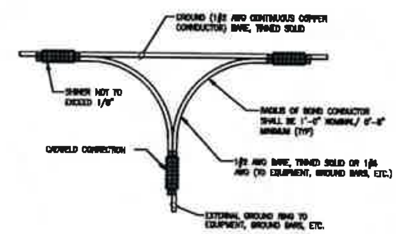
1. SURFACE PREPARATION: ALL CONNECTIONS MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE MADE BARE TO ENSURE PROPER CONTACT. NO WASHERS SHALL BE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS SHALL HAVE AN ANTI-OXIDANT AGENT APPLIED PRIOR TO INSTALLATION.
2. BUSS PREPARATION: ALL GALV. STEEL BUSSES SHALL BE CLEANED, POLISHED AND AN ANTI-OXIDANT APPLIED. NO FINGERPRINTS OR DISCOLORED STEEL WILL BE PERMITTED.
3. TERMINATIONS: ALL EQUIPMENT TERMINATIONS SHALL BE MADE WITH A BURNDY TWO HOLE COMPRESSION LUG WITH 10-34x3/4" LONG S.S. SCREWS, NUTS AND LOCK WASHERS. ALL BUSS TERMINATIONS SHALL BE MADE WITH A CAD-WELD OR BURNDY YC2C2 2 HOLE COMPRESSION LUG OR EQUAL. ALL INTERIOR HALO ATTACHMENTS SHALL BE MADE USING A BURNDY YC2C2 COMPRESSION LUG.

TYP. INTERIOR & EXTERIOR GROUND BAR
SCALE: N.T.S.



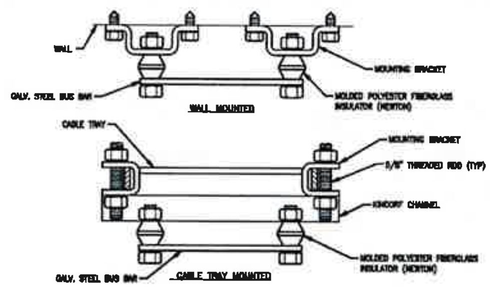
NOTE:
IF AN ENTRY PORT IS USED FOR THE FIBER ENTRY, THE PORT MUST BE GROUNDED TO THE GROUND BAR WITH A #2 GREEN COPPER STRANDED WIRE.

INTERIOR GROUNDING AT TELCO ENTRY
SCALE: N.T.S.

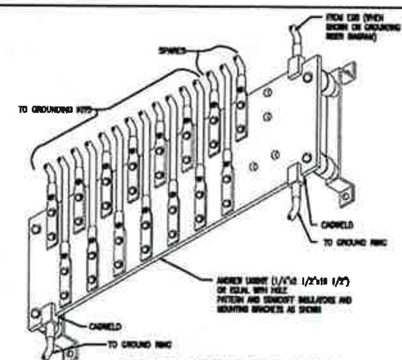


NOTE: ALL CONNECTION TO GROUND SHALL BE NON-DIRECTIONAL

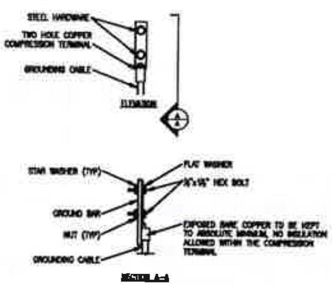
NON-DIRECTIONAL SPLICE
SCALE: N.T.S.



BUS BAR MOUNTING
SCALE: N.T.S.

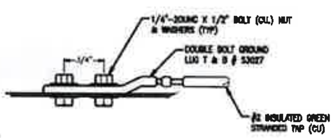


MASTER GROUND BAR (MGB)
SCALE: NOT TO SCALE

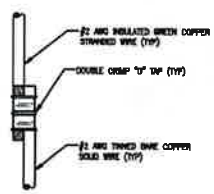


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

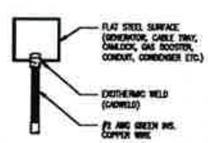
TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



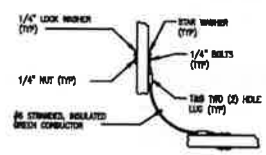
TYPICAL EQUIPMENT GROUND CONNECTION
SCALE: N.T.S.



TYPICAL GROUND CONNECTION SPLICE DETAIL
SCALE: N.T.S.



TYP. CADWELD #2 GREEN TO FLAT STEEL SURFACE
SCALE: NOT TO SCALE



CABLE TRAY GROUNDING
SCALE: N.T.S.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

R.K. EXECUTIVE CENTRE
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PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

GROUNDING DETAILS

DRAWING NO:

E05

SCALE: AS SHOWN
CEA PROJECT NO.: 98210.413
3/28/23

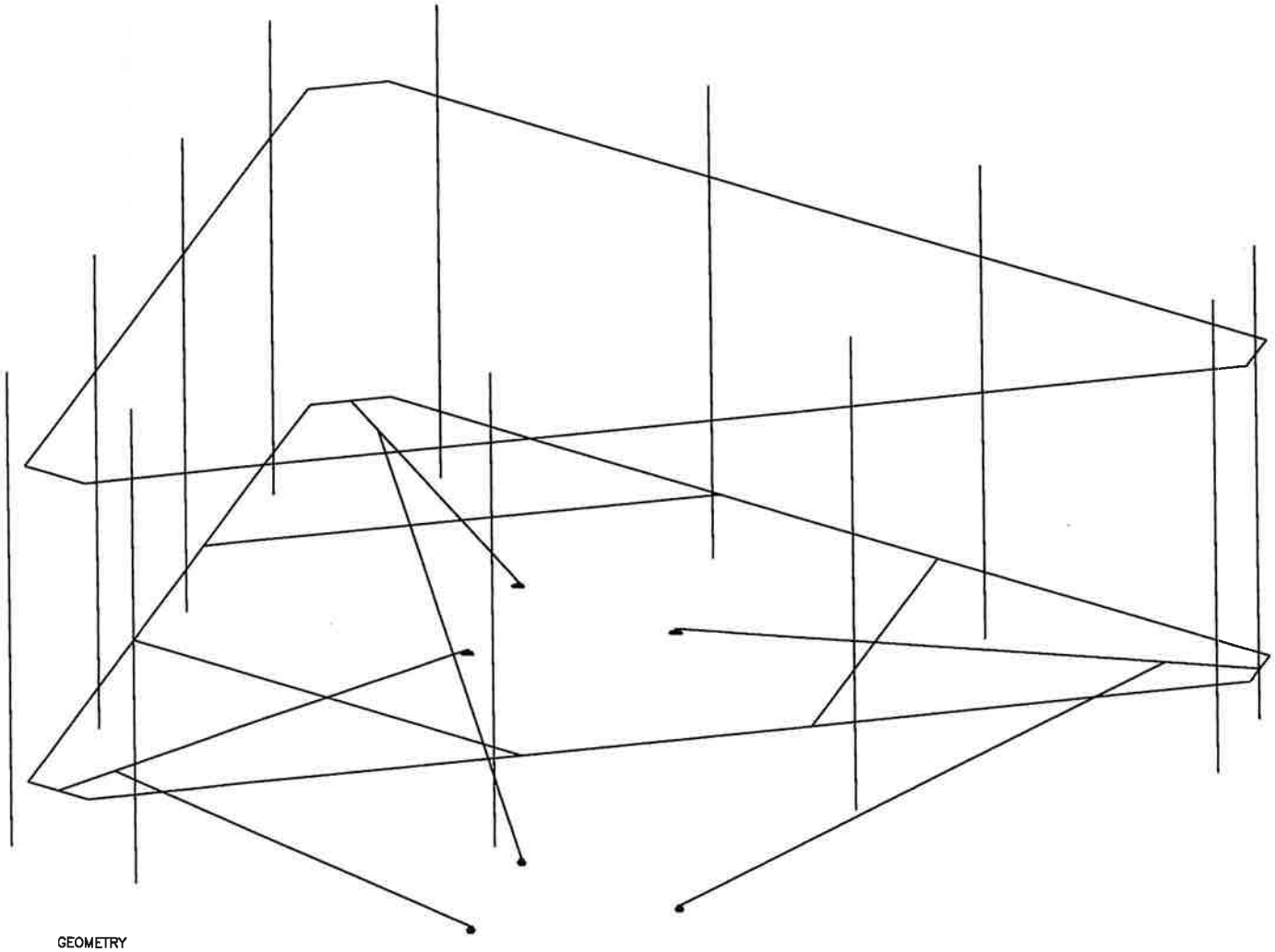
Appendix B – Mount Analysis

Bloomfield 5 CT Mount Analysis

View: Steel Beam Design

X3
X2
X1

SCALE = 1:24	UNITS: kip ft	DATE: 9/12/23

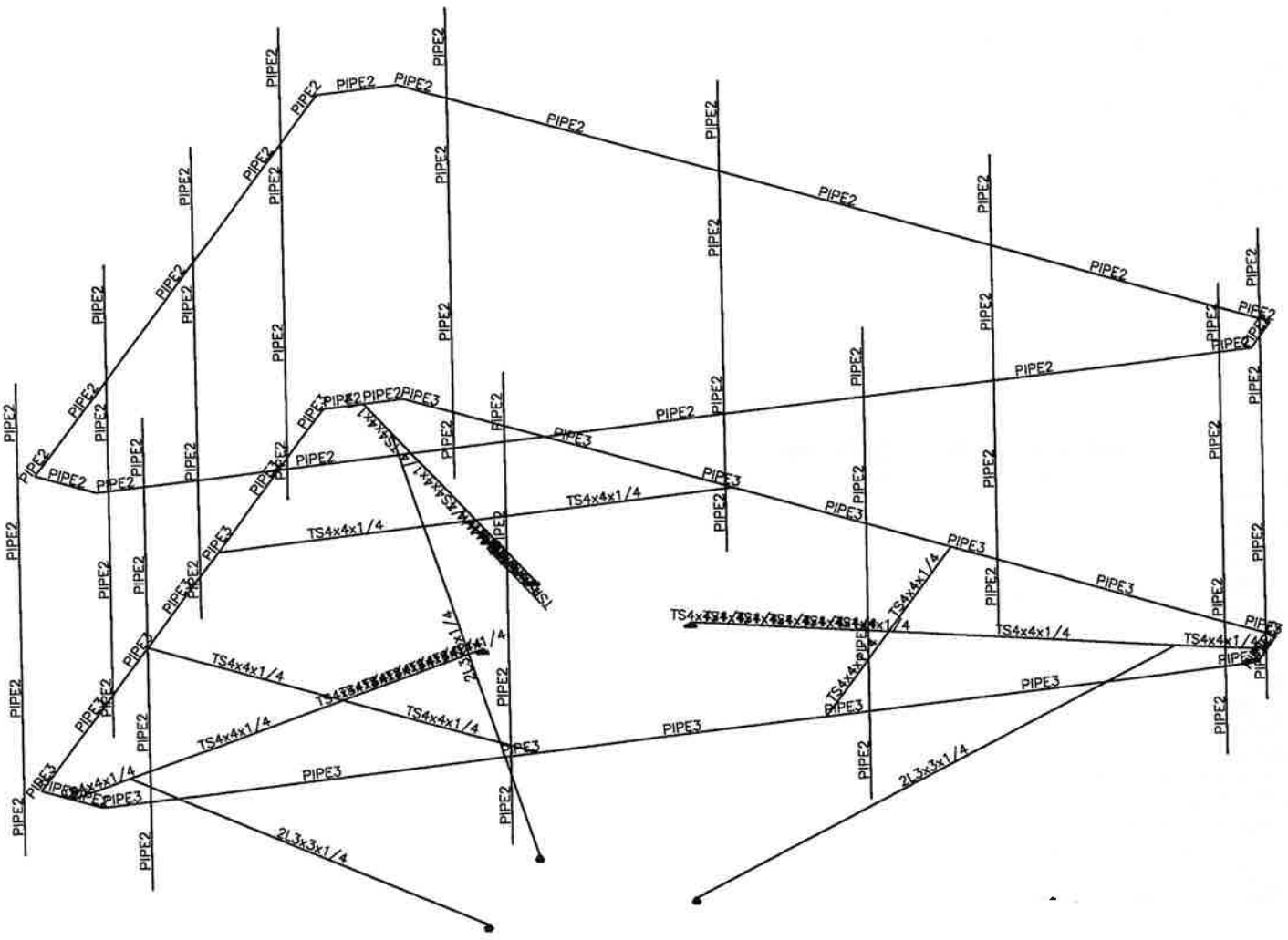


GEOMETRY

Bloomfield 5 CT Mount Analysis

View: Steel Beam Design

SCALE = 1:24 | UNITS: kip ft | DATE: 9/12/23



GEOMETRY

Bloomfield 5 CT Mount Analysis

Prepared by:

Date: 9/12/23
9:31

Load no. 1: Front No Ice (units - kips ft.)

```
* GROUP NONE
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
```

```
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ JOINT LOADS
/ JOINT LOADS
```

```
/ JOINT LOADS
FX2 0.047 FX3 -0.023 N 132
FX2 0.047 FX3 -0.023 N 133 135
FX2 0.22 FX3 -0.045 N 28 27
FX2 0.143 FX3 -0.045 N 48 47 64 63
```

```
FX2 0.57 FX3 -0.084 N 126 131 127 136 125 134
/ JOINT LOADS
FX2 0.058 FX3 -0.03 N 70 26
FX2 0.02 FX3 -0.03 N 84 54 76 38
/ END
```

F O R C E S U M M A T I O N

FX1=0 kip
FX2=4.769 kip
FX3=-1.023 kip

Load no. 2: Side No Ice (units - kips ft.)

```
* GROUP NONE
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
```

```
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
```

```
/ JOINT LOADS
/ JOINT LOADS
FX1 0.047 FX3 -0.023 N 132 135 133
FX1 0.143 FX3 -0.045 N 28 27 48 47 64 63
FX1 0.057 FX3 -0.084 N 126 127 125
```

```
FX1 0.057 FX3 -0.084 N 131 136 134
/ JOINT LOADS
FX1 0.02 FX3 -0.03 N 70 26 76 38 84 54
/ END
```

F O R C E S U M M A T I O N

FX1=1.461 kip
FX2=0 kip
FX3=-1.023 kip

Load no. 3: Front Ice (units - kips ft.)
* GROUP NONE / JOINT LOADS / BEAM LOADS / JOINT LOADS / BEAM LOADS
/ JOINT LOADS / JOINT LOADS / BEAM LOADS / JOINT LOADS / JOINT LOADS
/ JOINT LOADS FX2 0.016 FX3 -0.049 N 132 135 133 FX2 0.065 FX3 -0.156 N 28 27 48 47 64 63 FX2 0.02 FX3 -0.123 N 126 127 125 134 131 136 / JOINT LOADS
FX2 0.017 FX3 -0.06 N 70 26 FX2 0.008 FX3 -0.06 N 76 38 84 54 / END
FORCE SUMMATION FX1=0 kip FX2=0.624 kip FX3=-2.181 kip

Load no. 4: Side Ice (units - kips ft.)
* GROUP NONE / JOINT LOADS / BEAM LOADS / JOINT LOADS / BEAM LOADS
/ JOINT LOADS / BEAM LOADS / JOINT LOADS / JOINT LOADS / JOINT LOADS
FX1 0.01 FX3 -0.049 N 132 135 133 FX1 0.048 FX3 -0.156 N 28 27 48 47 64 63 FX1 0.014 FX3 -0.123 N 126 127 125 134 131 136 / JOINT LOADS FX1 0.008 FX3 -0.06 N 70 26 38 76 84 54
/ END
FORCE SUMMATION FX1=0.45 kip FX2=0 kip FX3=-2.181 kip

Load no. 5: Selfweight (units - kips ft.)

```
* GROUP NONE
/ BEAM LOADS
SELF  X3 -1. B 1 TO 138 142 TO 150
/ GLOBAL LOADS
/ GLOBAL LOADS
/ GLOBAL LOADS
DIST FX3 -0.003 PLANE -7.25 4.763 0.   -1.805 4.763 0.   -5.028 -0.818
0.   PT -0.5 0.866 BEAMS
DIST FX3 -0.003 PLANE 1.805 4.763 0.   7.25 4.763 0.   7.75 3.897 0.   PT
3.223 5.581 BEAMS
DIST FX3 -0.003 PLANE -3.222 -3.945 0.   3.222 -3.945 0.   0.5 -8.66
0.   PT 2.722 4.715 BEAMS
/ END
```

F O R C E S U M M A T I O N

FX1=0 kip
FX2=0 kip
FX3=-1.4597 kip

Load no. 6: Front Frame Ice (units - kips ft.)

```
* GROUP NONE
/ BEAM LOADS
DIST GL FX2 -0.002 B 1 4 5 13 TO 35 BY 2 49 TO 51 55 56 63 64 66 71 TO 74
76 TO 81 83 TO 88 90 TO 115 117 133 TO 135 142 TO 150
/ END
```

F O R C E S U M M A T I O N

FX1=0 kip
FX2=-0.3127 kip
FX3=0 kip

Load no. 7: Side Frame Ice (units - kips ft.)

```
* GROUP NONE
/ BEAM LOADS
/ BEAM LOADS
DIST GL FX1 -0.002 B 4 5 13 TO 35 BY 2 50 51 63 64 66 71 72 TO 78 BY 2
79 TO 81 83 TO 88 90 91 93 94 TO 100 BY 2 101 TO 115 117 133 TO 135
142 TO 150
/ END
```

F O R C E S U M M A T I O N

FX1=-0.2564 kip
FX2=0 kip
FX3=0 kip

Load no. 8: Front Frame No Ice (units - kips ft.)

```
* GROUP NONE
/ BEAM LOADS
/ BEAM LOADS
DIST GL FX2 -0.005 B 1 4 5 13 TO 35 BY 2 49 TO 51 55 56 63 64 66 71 TO 74
76 TO 81 83 TO 88 90 TO 115 117 133 TO 135 142 TO 150
/ END
```

FORCE SUMMATION

FX1=0 kip
FX2=-0.7817 kip
FX3=0 kip

Load no. 9: Side Frame No Ice (units - kips ft.)

```
* GROUP NONE
/ BEAM LOADS
/ BEAM LOADS
/ BEAM LOADS
DIST GL FX1 -0.005 B 4 5 13 TO 35 BY 2 50 51 63 64 66 71 72 TO 78 BY 2
79 TO 81 83 TO 88 90 91 93 94 TO 100 BY 2 101 TO 115 117 133 TO 135
142 TO 150
/ END STATIC
```

FORCE SUMMATION

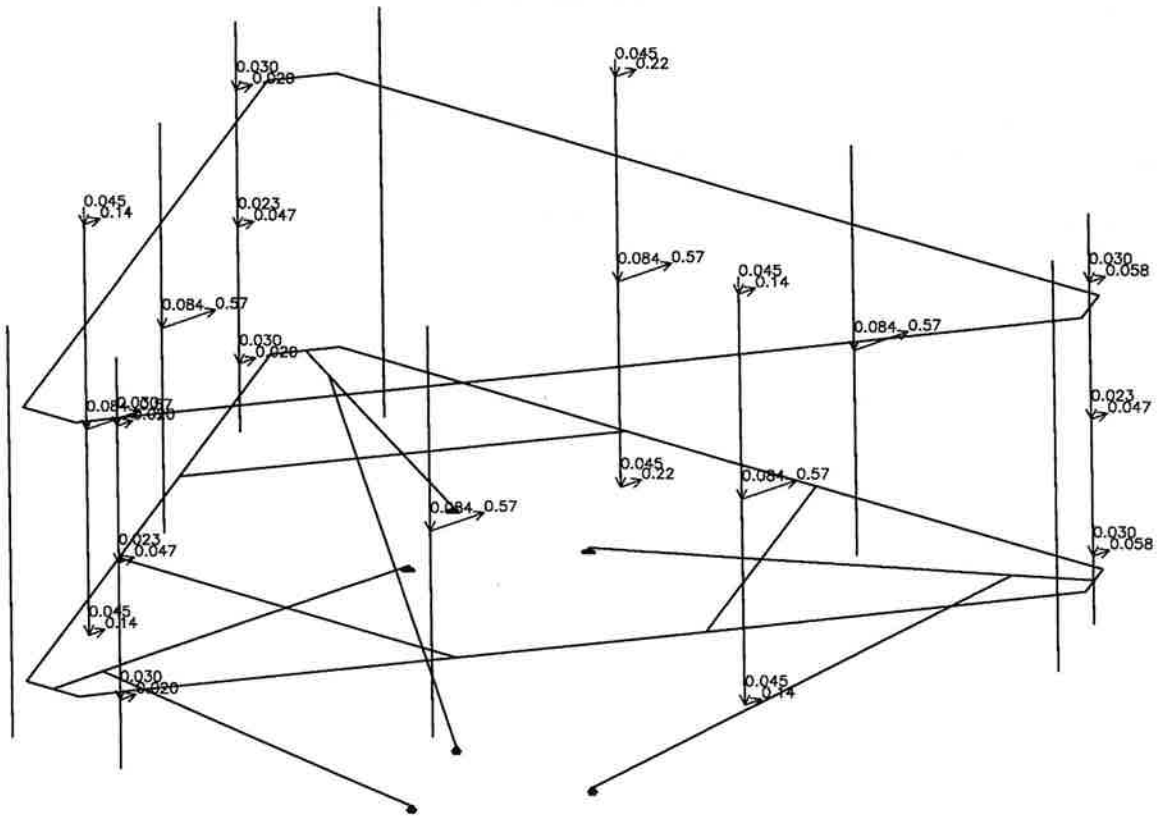
FX1=-0.6411 kip
FX2=0 kip
FX3=0 kip

Bloomfield 5 CT Mount Analysis

Load 1: Front No Ice

X3
X2
X1

SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23

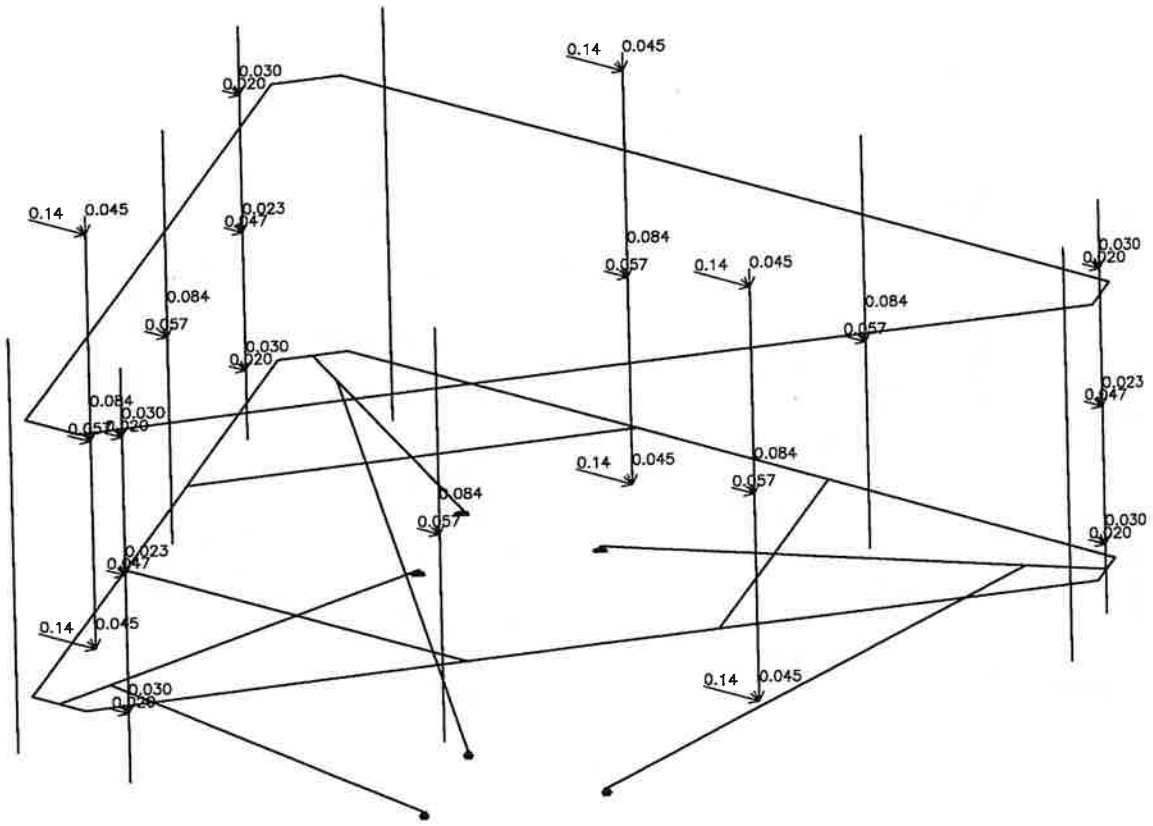


Bloomfield 5 CT Mount Analysis

Load 2: Side No Ice

X3
X2
X1

SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23

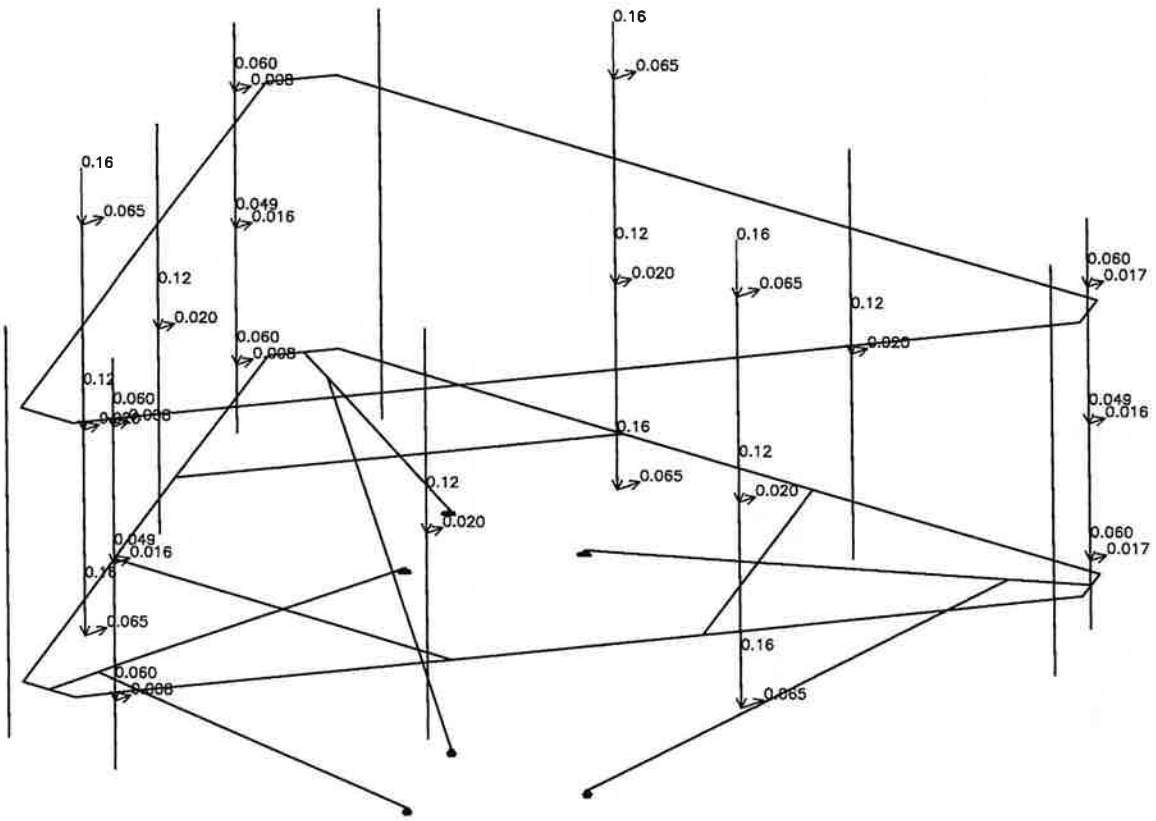


Bloomfield 5 CT Mount Analysis

Load 3: Front Ice

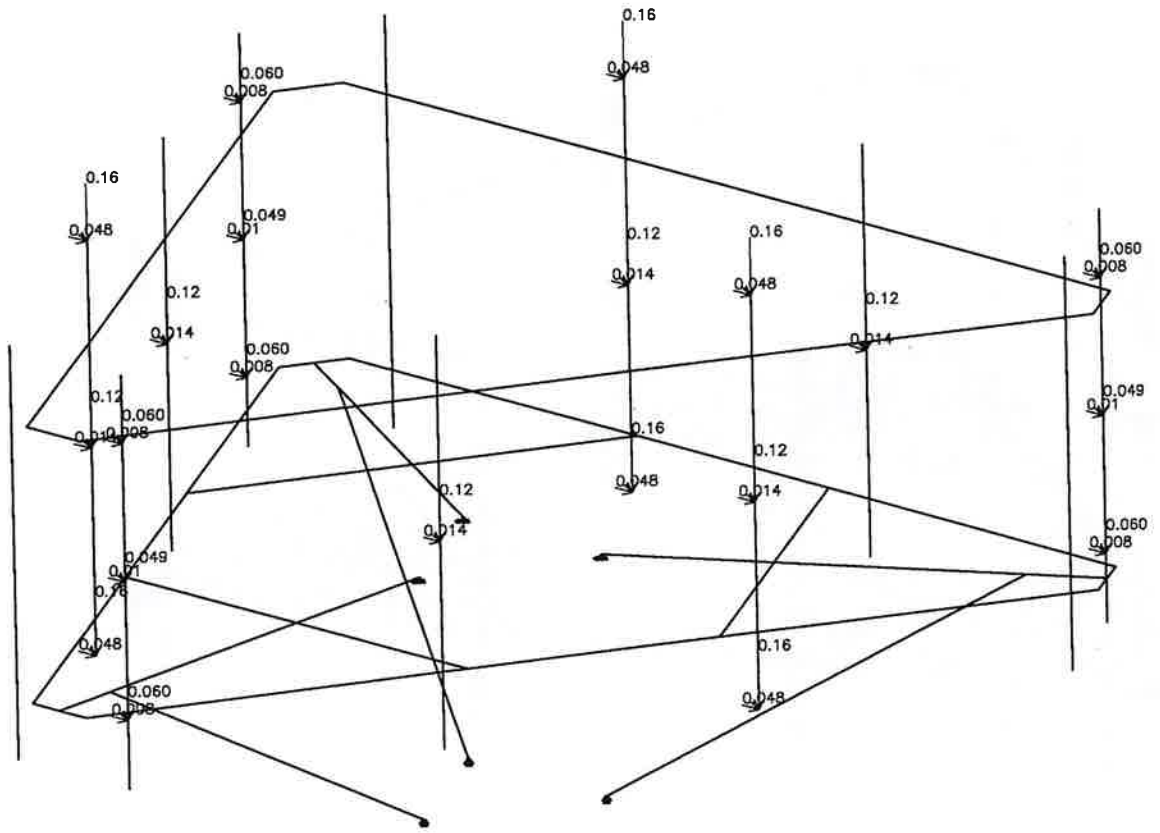
X3
X2
X1

SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23



Bloomfield 5 CT Mount Analysis

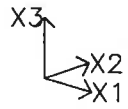
Load 4: Side Ice



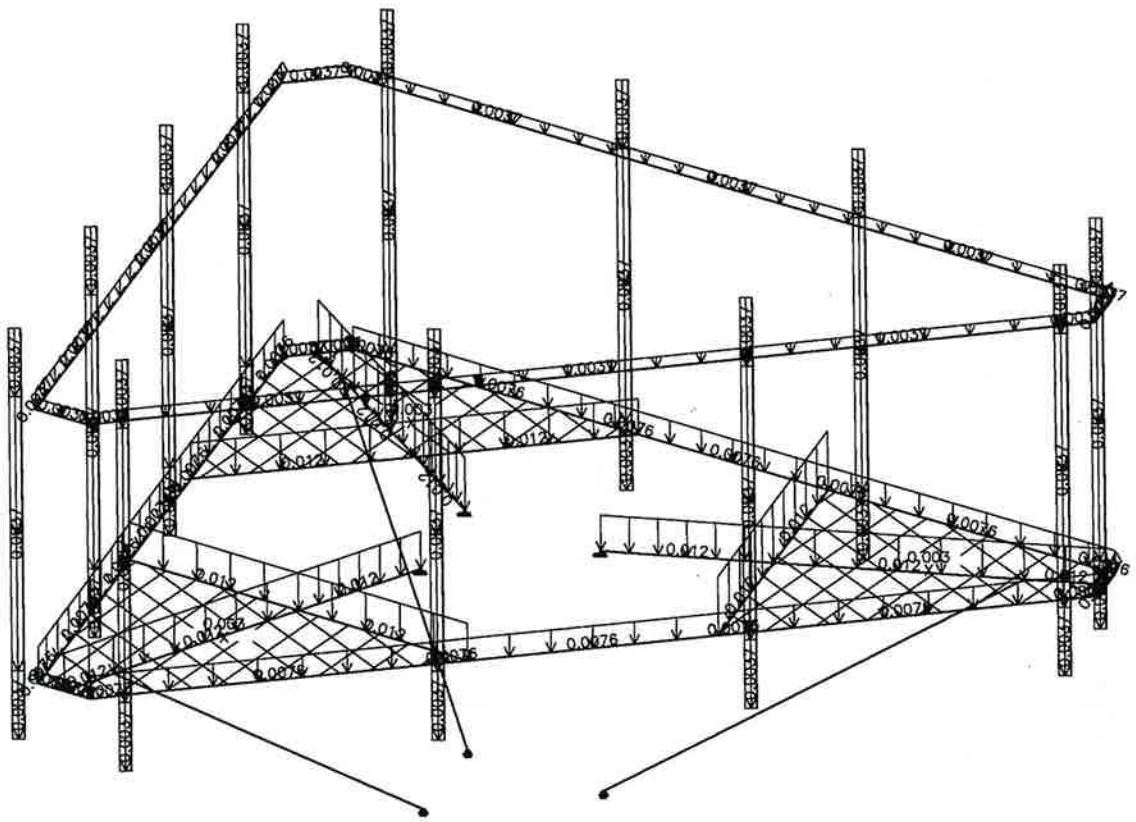
SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23

Bloomfield 5 CT Mount Analysis

Load 5: Selfweight



SCALE = 1:30	UNITS: kip ft	DATE: 9/12/23

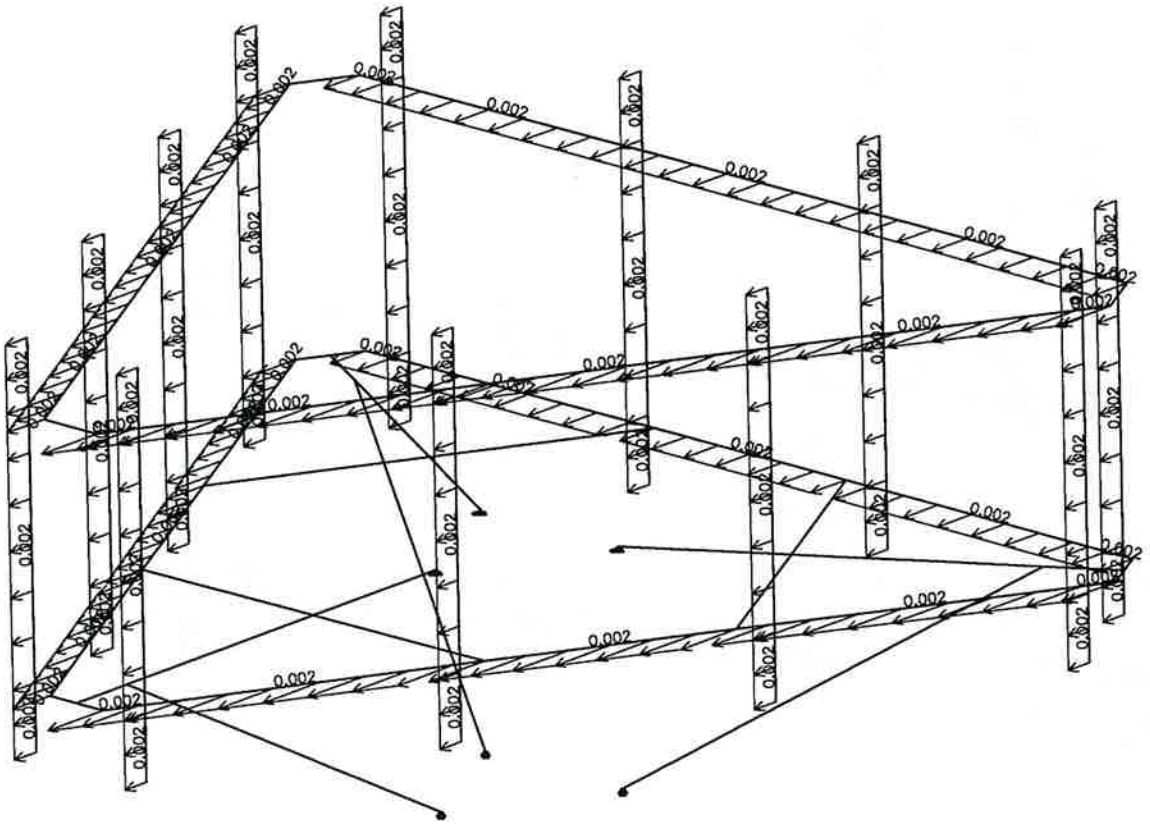


Bloomfield 5 CT Mount Analysis

Load 6: Front Frame Ice

X3
X2
X1

SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23

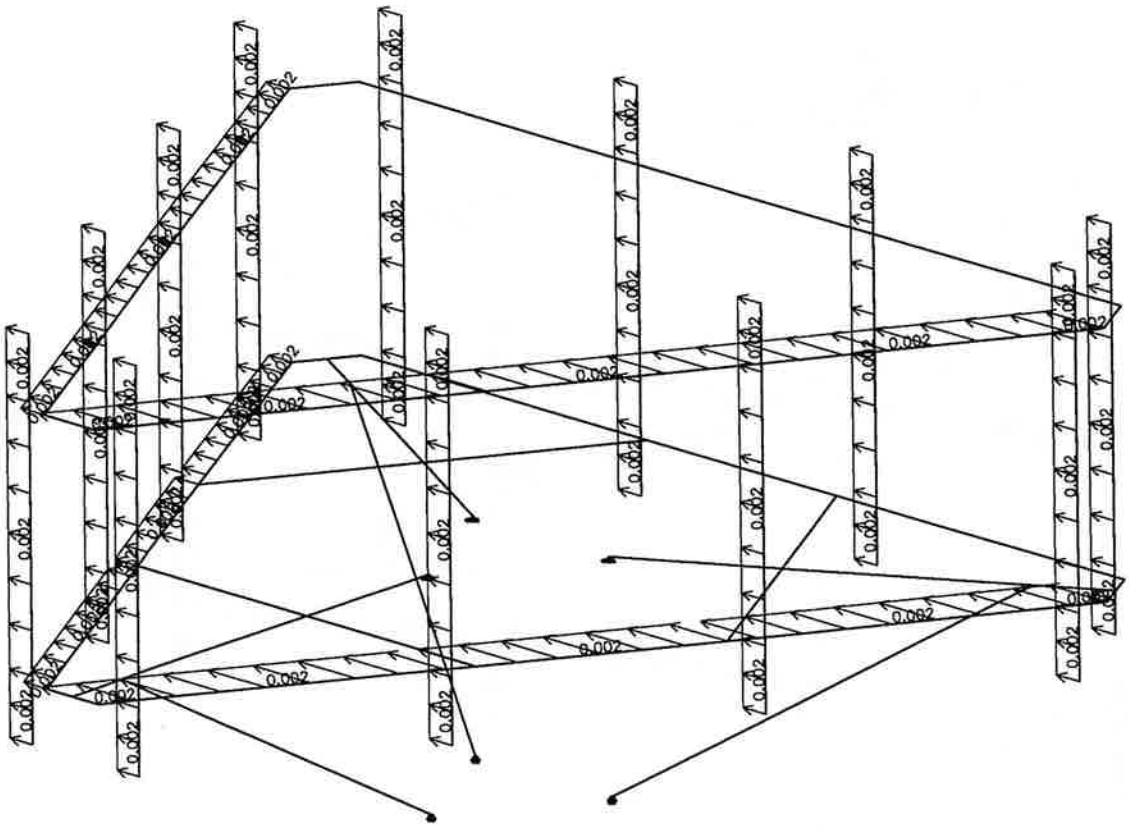


Bloomfield 5 CT Mount Analysis

Load 7: Side Frame Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 9/12/23

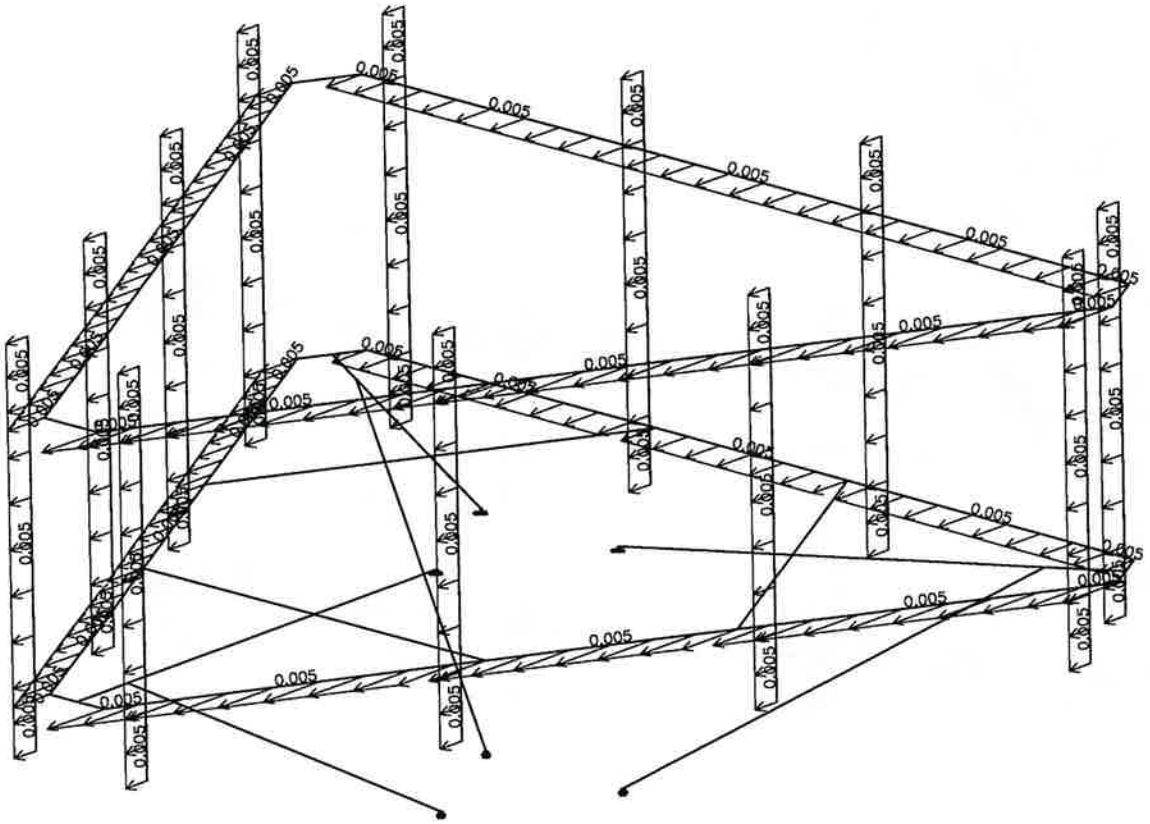


Bloomfield 5 CT Mount Analysis

Load 8: Front Frame No Ice

X3
X2
X1

SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23

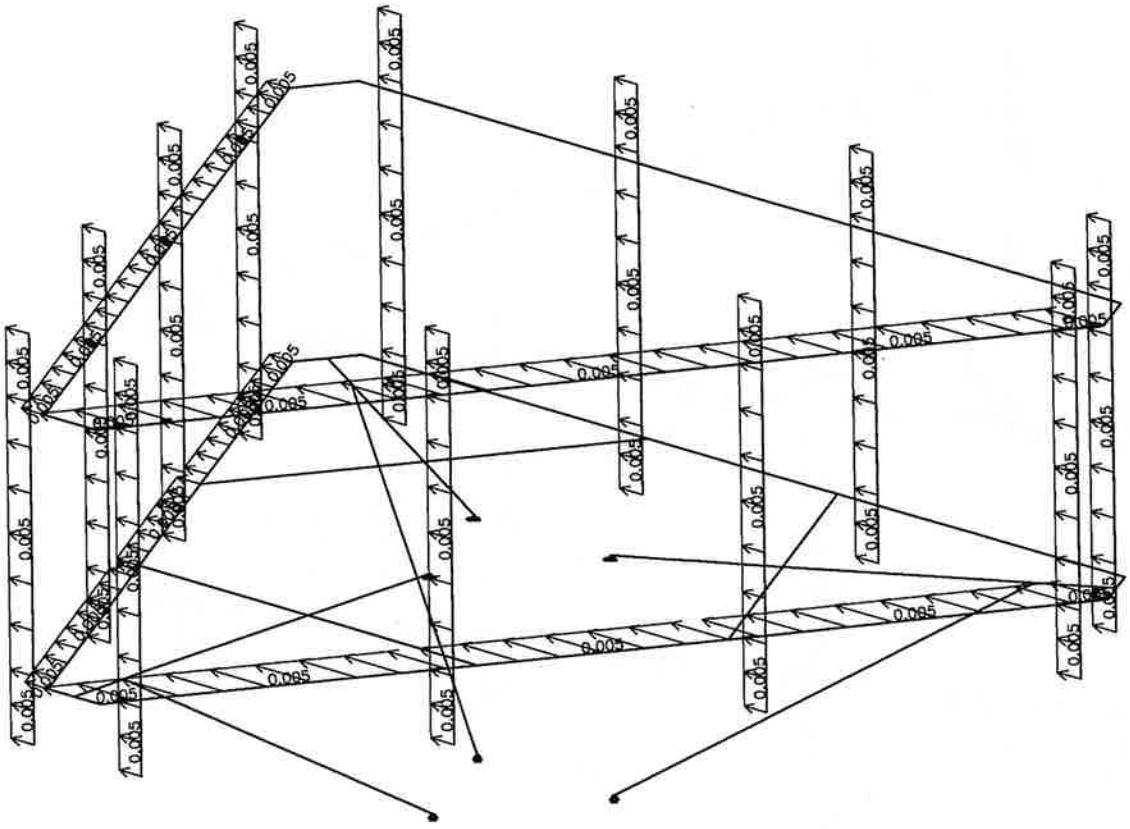


Bloomfield 5 CT Mount Analysis

Load 9: Side Frame No Ice

X3
X2
X1

SCALE = 1:30 | UNITS: kip ft | DATE: 9/12/23



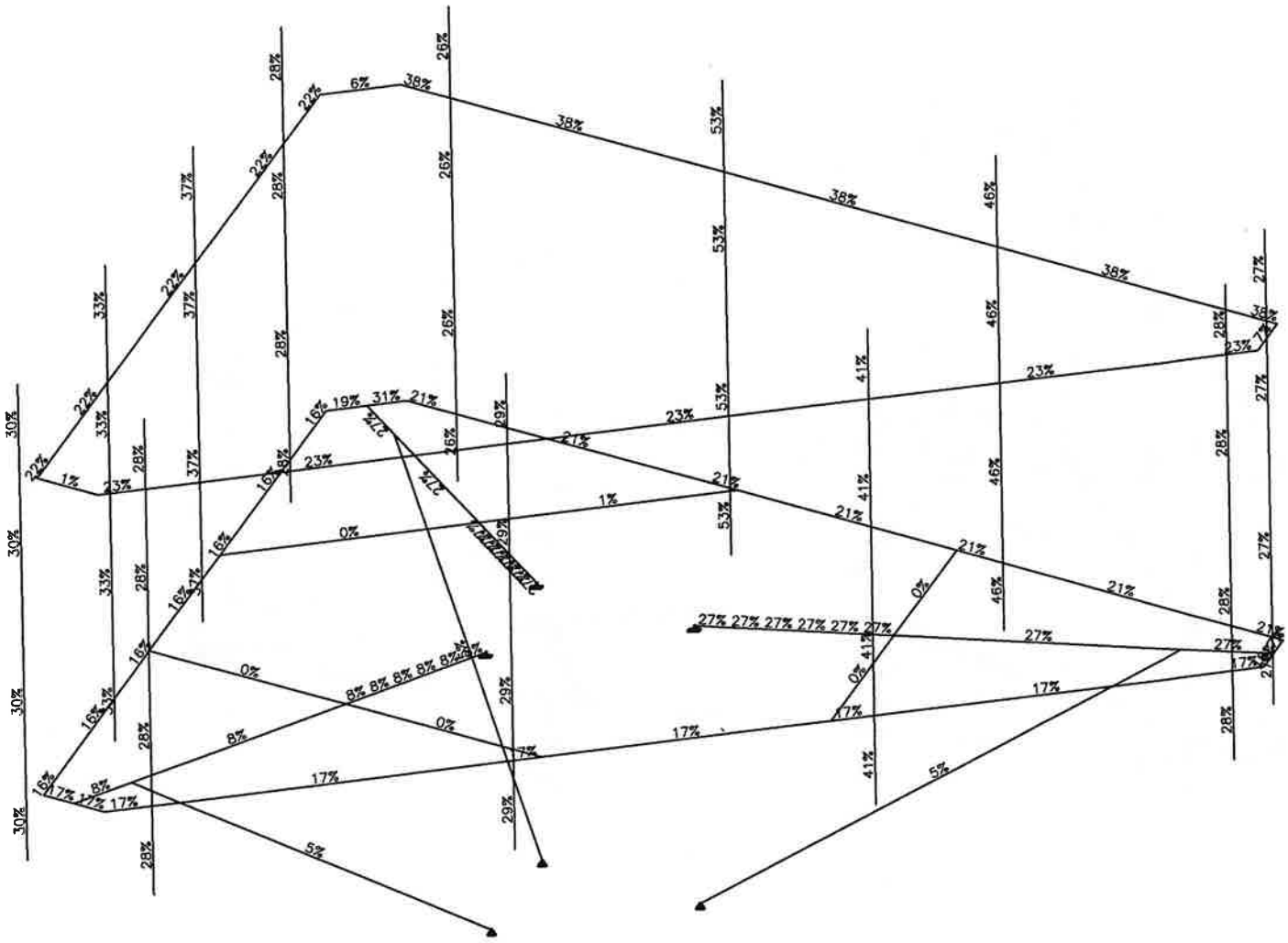
Bloomfield 5 CT Mount Analysis

View: Steel Beam Design

X3
X2
X1

SCALE = 1:24

DATE: 9/12/23

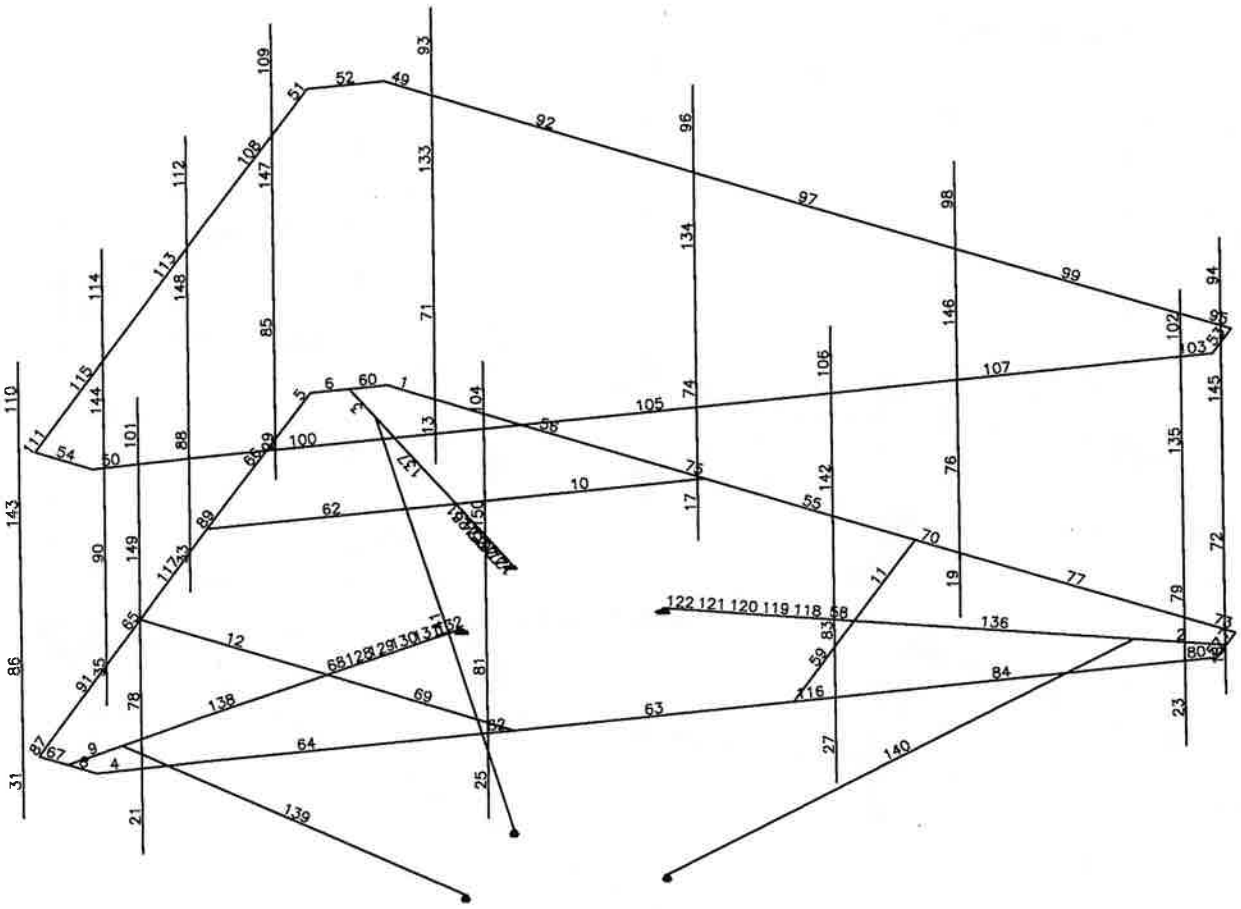


Actual/allowable Moment+Axial

Bloomfield 5 CT Mount Analysis

SCALE = 1:27

DATE: 9/12/23



Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:36

Results Summary Table

Beam	Section	Com	Defl L/	Slen	CAPACITY Axial	Dir	Shear	Mom	LTB	Combined Axial+Mom	
1	PIPE 3	1	531	150	-0.01	MJ	0.02	0.14	0.14	0.21	
						MI	0.03	0.07	0.00		
2	TS 4x4x1/4	1	3295	57	0.02	MJ	0.03	0.08	0.08	0.27	
						MI	0.03	0.20	0.00		
3	TS 4x4x1/4	1	3383	57	0.02	MJ	0.03	0.08	0.08	0.27	
						MI	0.03	0.20	0.00		
6	PIPE 2	1	7363	8	-0.01	MJ	0.04	0.14	0.14	0.19	
						MI	0.01	0.04	0.00		
7	PIPE 2	1	9999	8	0.00	MJ	0.04	0.14	0.14	0.17	
						MI	0.01	0.03	0.00		
8	PIPE 2	1	9999	8	0.01	MJ	0.04	0.12	0.12	0.17	
						MI	0.04	0.14	0.00		
9	TS 4x4x1/4	4	3971	57	-0.01	MJ	0.03	0.07	0.07	0.08	
						MI	0.00	0.03	0.00		
10	TS 4x4x1/4	4	9999	26	0.01	MI	0.00	0.00	0.00	0.01	
11	TS 4x4x1/4	4	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
12	TS 4x4x1/4	1	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
49	PIPE 2	1	397	221	-0.06	MJ	0.02	0.17	0.17	0.38	***
						MI	0.01	0.19	0.00		
52	PIPE 2	1	9999	15	0.00	MJ	0.02	0.06	0.06	0.06	
53	PIPE 2	1	9999	15	0.00	MJ	0.02	0.07	0.07	0.07	
54	PIPE 2	2	9999	15	0.00	MJ	0.00	0.01	0.01	0.01	
57	PIPE 2	1	6428	8	-0.01	MJ	0.03	0.15	0.15	0.18	
						MI	0.01	0.03	0.00		
59	TS 4x4x1/4	1	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
60	PIPE 2	1	4213	8	-0.01	MJ	0.04	0.26	0.26	0.31	
						MI	0.01	0.04	0.00		
62	TS 4x4x1/4	1	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
67	PIPE 2	1	9999	8	0.01	MJ	0.03	0.10	0.10	0.17	
						MI	0.04	0.14	0.00		
69	TS 4x4x1/4	1	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
80	PIPE 3	4	646	150	0.01	MJ	0.02	0.13	0.13	0.17	
						MI	0.01	0.06	0.00		
87	PIPE 3	4	647	150	0.01	MJ	0.02	0.13	0.13	0.16	
						MI	0.01	0.04	0.00		
93	PIPE 2	1	177	91	-0.02	MJ	0.01	0.21	0.21	0.26	***
						MI	0.00	0.04	0.00		
94	PIPE 2	1	163	91	-0.02	MJ	0.01	0.20	0.20	0.27	***
						MI	0.00	0.08	0.00		
96	PIPE 2	1	88	91	-0.01	MJ	0.01	0.14	0.14	0.53	***
						MI	0.04	0.39	0.00		
98	PIPE 2	1	93	91	0.00	MJ	0.01	0.14	0.14	0.46	***
						MI	0.03	0.32	0.00		
101	PIPE 2	1	432	91	-0.01	MJ	0.01	0.13	0.13	0.28	
						MI	0.01	0.14	0.00		
102	PIPE 2	1	201	91	-0.01	MJ	0.01	0.08	0.08	0.28	***
						MI	0.02	0.26	0.00		
103	PIPE 2	4	682	221	-0.06	MJ	0.02	0.16	0.16	0.23	***
						MI	0.01	0.06	0.00		
104	PIPE 2	1	228	91	0.00	MJ	0.01	0.08	0.08	0.29	***
						MI	0.03	0.26	0.00		
106	PIPE 2	1	179	91	-0.01	MJ	0.01	0.10	0.10	0.41	***
						MI	0.04	0.34	0.00		
109	PIPE 2	1	227	91	-0.01	MJ	0.01	0.07	0.08	0.28	***
						MI	0.02	0.26	0.00		
110	PIPE 2	1	415	91	-0.01	MJ	0.01	0.14	0.14	0.30	
						MI	0.01	0.15	0.00		
111	PIPE 2	3	689	221	-0.06	MJ	0.02	0.16	0.16	0.22	***
						MI	0.01	0.06	0.00		
112	PIPE 2	1	195	91	0.00	MJ	0.00	0.05	0.05	0.37	***
						MI	0.04	0.32	0.00		
114	PIPE 2	1	215	91	-0.01	MJ	0.01	0.12	0.12	0.33	***

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:36

Results Summary Table

Beam	Section	Com	Defl L/	Slen	CAPACITY Axial	Dir	Shear	Mom	LTB	Combined Axial+Mom
						MI	0.03	0.28	0.00	
139	2L 3x3x1/4	4	9999	91	-0.05	MI	0.00	0.00	0.00	0.05
140	2L 3x3x1/4	4	9999	90	-0.05	MI	0.00	0.00	0.00	0.05
141	2L 3x3x1/4	3	9999	90	-0.05	MI	0.00	0.00	0.00	0.05

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

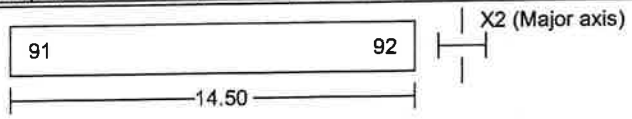
Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 49 - 95

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam:
49, 92, 97,
99, 95



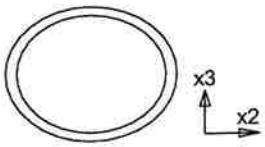
CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

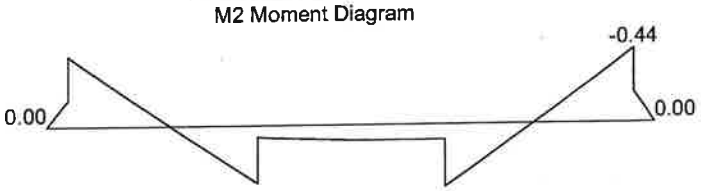
Section: PIPE 2



D	= 2.37in						
t	= 0.2in						
Area	= 1.1in2	I2	= 0.7in4	I3	= 0.7in4		
J	= 1.3in4	Z2	= 0.8in3	Z3	= 0.8in3		
Cw	= 0.in6	e3	= 1.2in	e2	= 1.2in		

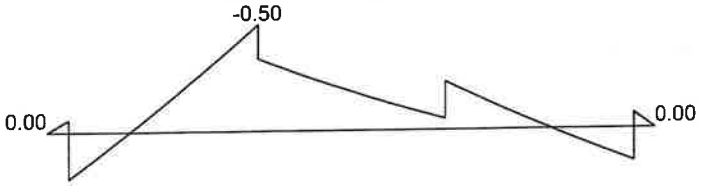
DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.08 (tens.), -0.27 (compr.) Max. SHEAR Force = 0.36

M3 Moment Diagram



Max. AXIAL Force = 0.08 (tens.), -0.27 (compr.) Max. SHEAR Force = 0.17

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios: Compact Non-Compact
d/t= 15.46 < 45.0 71.7 (Fy= 46.0 R = 0.005)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.17 Vn = 17.79	0.01
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.50 Mn = 2.92	0.19
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.36 Vn = 17.79	0.02

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 49 - 95

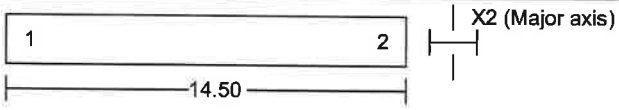
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.44 Mn = 2.92	0.17
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.43874	0.61
Axial Force (E2-1)	$\frac{Pu}{0.85AgFcr} < 1.00$	(kL/r)x =192 (kL/r)y =192 λc = 2.43	Pu = 0.27 Ag = 1.07 Fcr = 6.82	0.04
Combined Forces (compress.) (H1-1b)	$\frac{Pu}{2\phi Pn} + \frac{Mux}{\phi Mnx} + \frac{Muy}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 0.85 Pex = 8.36 Pey = 8.36	Mux = 0.45 Muy = 0.50 B1x = 1.03 B1y = 1.00	0.38

Detailed Results Table for Beam 1 - 73

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam:
1, 56, 75,
55, 70, 77,
73



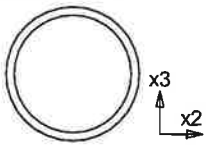
CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

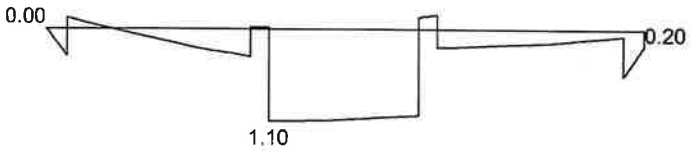
Section: PIPE 3



D	= 3.50in						
t	= 0.2in						
Area	= 2.23in2	I2	= 3.02in4	I3	= 3.02in4		
J	= 6.03in4	Z2	= 2.33in3	Z3	= 2.33in3		
Cw	= 0.in6	e3	= 1.8in	e2	= 1.8in		

DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.50 (tens.), -0.34 (compr.) Max. SHEAR Force = 0.71

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

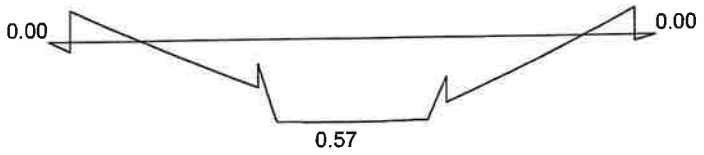
Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 1 - 73

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

M3 Moment Diagram



Max. AXIAL Force = 0.50 (tens.), -0.34 (compr.) Max. SHEAR Force = 0.89

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios: Compact Non-Compact
d/t= 16.16 < 45.0 71.7 (Fy= 46.0 R = -0.005)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 1.34	Vu = 0.89 Vn = 36.91	0.03
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 2.33	M = 0.57 Mn = 8.94	0.07
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 1.34	Vu = 0.71 Vn = 36.91	0.02
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 2.33	M = 1.10 Mn = 8.94	0.14
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.32768	0.45
Axial Force (D1-1)	$\frac{Pu}{0.90AgFy} < 1.00$	(kL/r)x =63 (kL/r)y =63	Pu = 0.50 Ag = 2.23 Fy = 46.00	0.01
Combined Forces (compress.) (H1-1b)	$\frac{Pu}{2\phi Pn} + \frac{Mux}{\phi Mnx} + \frac{Muy}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 0.85 Pex = 158.39 Pey = 158.39	Mux = 1.10 Muy = 0.57 B1x = 1.00 B1y = 1.00	0.21

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

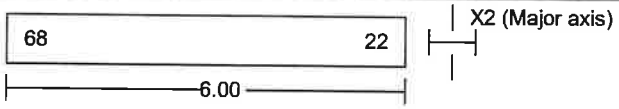
Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 93 - 13

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam:
93, 71, 133,
13



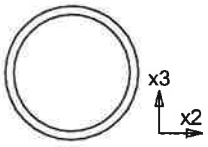
CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

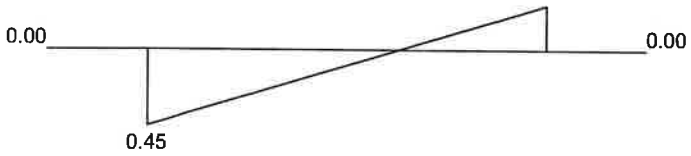
Section: PIPE 2



D	= 2.37in						
t	= 0.2in						
Area	= 1.1in2	I2	= 0.7in4	I3	= 0.7in4		
J	= 1.3in4	Z2	= 0.8in3	Z3	= 0.8in3		
Cw	= 0.in6	e3	= 1.2in	e2	= 1.2in		

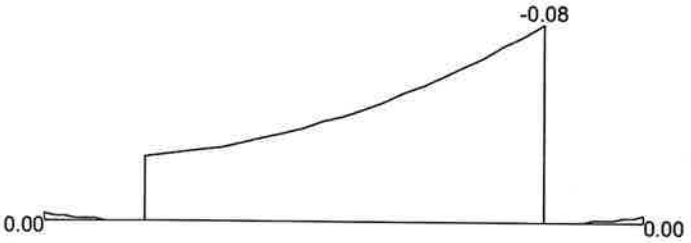
DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.00 (tens.), -0.51 (compr.) Max. SHEAR Force = 0.18

M3 Moment Diagram



Max. AXIAL Force = 0.00 (tens.), -0.51 (compr.) Max. SHEAR Force = 0.02

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	
d/t= 15.46	<	45.0	71.7	(Fy= 46.0 R = 0.010)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.08 Mn = 2.92	0.03
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.18 Vn = 17.79	0.01
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.45 Mn = 2.92	0.17

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23 9:39

Detailed Results Table for Beam 93 - 13

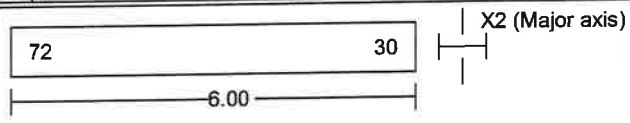
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Deflection	defl. / L / 240 < 1.00		defl = 0.40616	1.35
Axial Force (E2-1)	Pu / 0.85AgFcr < 1.00	(kL/r)x =88 (kL/r)y =88 λc = 1.12	Pu = 0.51 Ag = 1.07 Fcr = 27.25	0.02
Combined Forces (compress.) (H1-1b)	Pu/2φPn + Mux/φMnx + Muy/φMny < 1.00	Cmx = 1.00 Cmy = 0.85 Pex = 39.50 Pey = 39.50	Mux = 0.45 Muy = 0.08 B1x = 1.01 B1y = 1.00	0.21

Detailed Results Table for Beam 96 - 17

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 96, 74, 134, 17



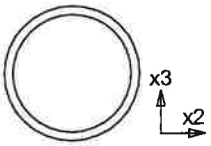
CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

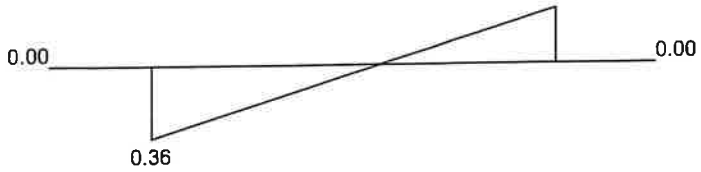
Section: PIPE 2



D	= 2.37in						
t	= 0.2in						
Area	= 1.1in2	I2	= 0.7in4	I3	= 0.7in4
J	= 1.3in4	Z2	= 0.8in3	Z3	= 0.8in3
Cw	= 0.in6	e3	= 1.2in	e2	= 1.2in

DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.09 (tens.), -0.05 (compr.) Max. SHEAR Force = 0.16

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

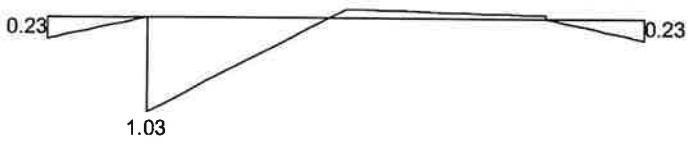
Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 96 - 17

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

M3 Moment Diagram



Max. AXIAL Force = 0.09 (tens.), -0.05 (compr.) Max. SHEAR Force = 0.57

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios: Compact Non-Compact
d/t= 15.46 < 45.0 71.7 (Fy= 46.0 R = -0.002)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.57 Vn = 17.79	0.04
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 1.03 Mn = 2.92	0.39
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.16 Vn = 17.79	0.01
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.36 Mn = 2.92	0.14
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.81939	2.73
Axial Force (D1-1)	$\frac{Pu}{0.90AgFy} < 1.00$	(kL/r)x =32 (kL/r)y =32	Pu = 0.09 Ag = 1.07 Fy = 46.00	0.00
Combined Forces (compress.) (H1-1b)	$\frac{Pu}{2\phi Pn} + \frac{Mux}{\phi Mnx} + \frac{Muy}{\phi Mny} < 1.00$	Cmx= 1.00 Cmy= 0.85 Pex = 291.56 Pey = 291.56	Mux = 0.36 Muy = 1.03 B1x = 1.00 B1y = 1.00	0.53

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

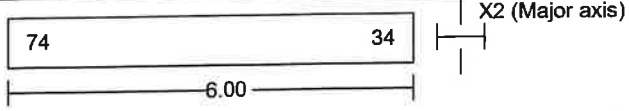
Prepared by:

Date: 9/12/23 9:39

Detailed Results Table for Beam 98 - 19

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 98, 76, 146, 19



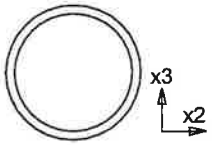
CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

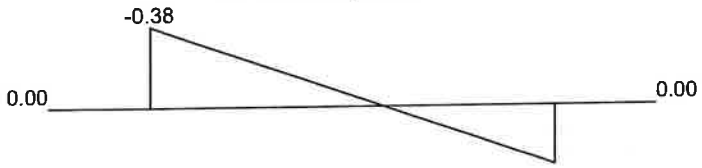
Section: PIPE 2



D	= 2.37in						
t	= 0.2in						
Area	= 1.1in2	I2	= 0.7in4	I3	= 0.7in4		
J	= 1.3in4	Z2	= 0.8in3	Z3	= 0.8in3		
Cw	= 0.in6	e3	= 1.2in	e2	= 1.2in		

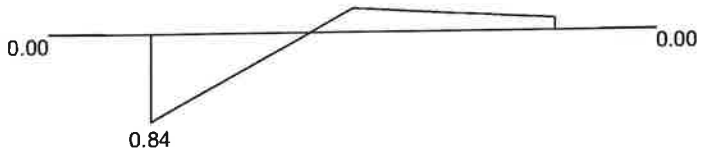
DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.16 (tens.), 0.00 (compr.) Max. SHEAR Force = 0.16

M3 Moment Diagram



Max. AXIAL Force = 0.16 (tens.), 0.00 (compr.) Max. SHEAR Force = 0.54

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios: Compact Non-Compact
d/t= 15.46 < 45.0 71.7 (Fy= 46.0 R = -0.003)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.54 Vn = 17.79	0.03
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.84 Mn = 2.92	0.32
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.16 Vn = 17.79	0.01

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 98 - 19

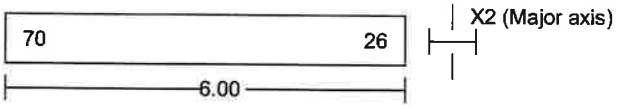
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.38 Mn = 2.92	0.14
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.77424	2.58
Axial Force (D1-1)	$\frac{Pu}{0.90AgFy} < 1.00$	(kL/r)x =91 (kL/r)y =91	Pu = 0.16 Ag = 1.07 Fy = 46.00	0.00
Combined Forces (compress.) (H1-1b)	$\frac{Pu}{2\phi Pn} + \frac{Mux}{\phi Mnx} + \frac{Muy}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 0.85 Pex = 36.76 Pey = 36.76	Mux = 0.38 Muy = 0.84 B1x = 1.00 B1y = 1.00	0.46

Detailed Results Table for Beam 94 - 15

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 94, 72, 145, 15



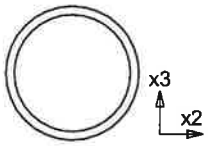
CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

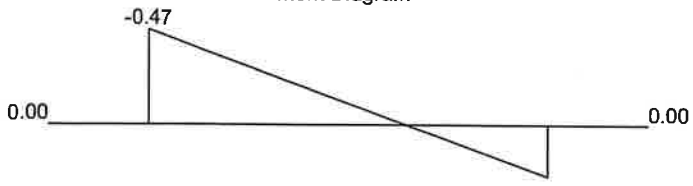
Section: PIPE 2



D	= 2.37in						
t	= 0.2in						
Area	= 1.1in2	I2	= 0.7in4	I3	= 0.7in4
J	= 1.3in4	Z2	= 0.8in3	Z3	= 0.8in3
Cw	= 0.in6	e3	= 1.2in	e2	= 1.2in

DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.00 (tens.), -0.62 (compr.) Max. SHEAR Force = 0.18

Bloomfield 5 CT Mount Analysis

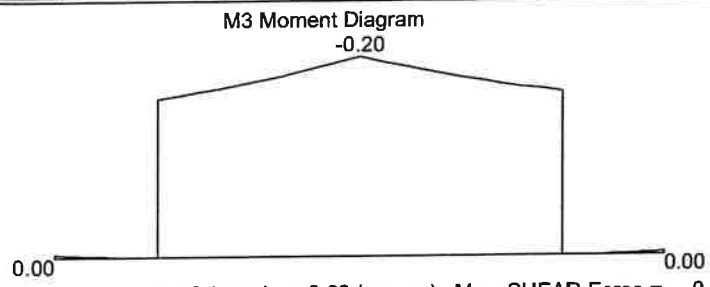
Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 94 - 15

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*



Max. AXIAL Force = 0.00 (tens.), -0.62 (compr.) Max. SHEAR Force = 0.03

SECTION CLASSIFICATION: *** COMPACT ***

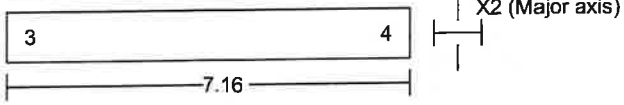
Limiting Ratios: Compact Non-Compact
d/t= 15.46 < 45.0 71.7 (Fy= 46.0 R= 0.013)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.20 Mn = 2.92	0.08
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 0.64	Vu = 0.18 Vn = 17.79	0.01
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 0.76	M = 0.47 Mn = 2.92	0.18
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.44049	1.47
Axial Force (E2-1)	$\frac{Pu}{0.85AgFcr} < 1.00$	(kL/r)x =87 (kL/r)y =87 λc = 1.11	Pu = 0.62 Ag = 1.07 Fcr = 27.48	0.02
Combined Forces (compress.) (H1-1b)	$\frac{Pu}{2\phi Pn} + \frac{Mux}{\phi Mnx} + \frac{Muy}{\phi Mny} < 1.00$	Cmx= 1.00 Cmy= 0.85 Pex = 40.16 Pey = 40.16	Mux = 0.48 Muy = 0.20 B1x = 1.02 B1y = 1.00	0.27

Detailed Results Table for Beam 2 - 122

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam:
2, 136, 58,
118, 119, 120,
121, 122



CONSTRAINTS

- Sections : Check
- Steel Grade: A500B

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:39

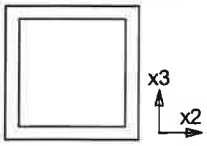
Detailed Results Table for Beam 2 - 122

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

INTERMEDIATE SUPPORTS

L =	1.17	4.71	5.13	5.50	5.92	6.29	6.71
Lat.-Tors.							
Compress.	X	X	X	X	X	X	X

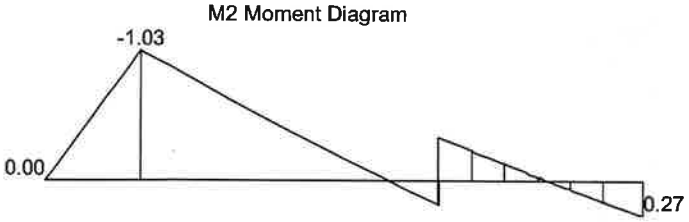
Section: TS 4x4x1/4



h	= 4.0in	b	= 4.0in		
t	= 0.2in				
Area	= 3.59in2	I2	= 8.22in4	I3	= 8.22in4
J	= 13.50in4	Z2	= 4.97in3	Z3	= 4.97in3
Cw	= 0.in6	e3	= 2.0in	e2	= 2.0in

DESIGN COMBINATION = 1

M2 Moment Diagram

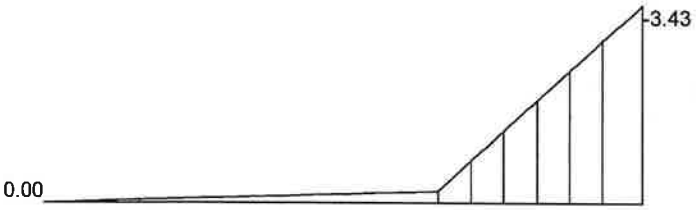


Moments at Intermediate Supports:

-1.02 0.19 -0.14 0.06
-0.23 -0.03 0.17

Max. AXIAL Force = 2.48 (tens.) Max. SHEAR Force = 0.90

M3 Moment Diagram



Moments at Intermediate Supports:

-0.05 -0.20 -1.23 -2.28
-0.74 -1.78 -2.83

Max. AXIAL Force = 2.48 (tens.) Max. SHEAR Force = 1.32

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	
d/t= 13.13	<	35.2	35.2	(Fy= 46.0 R = -0.015)
b/t= 13.13	<	28.1	35.2	

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 1.79	Vu = 1.32 Vn = 49.54	0.03
M3 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 4.97	M = 3.43 Mn = 19.05	0.20

Bloomfield 5 CT Mount Analysis

Code: AISC-LRFD

Prepared by:

Date: 9/12/23
9:39

Detailed Results Table for Beam 2 - 122

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V3 Shear (F2-1)	Vu/(.9*Vn)<1.00 Vn=0.6*Fy*Av	Av = 1.79	Vu = 0.90 Vn = 49.54	0.02
M2 Moment (A-F1-1) without LTB	$\frac{M}{0.9Mn} < 1.00$	Z = 4.97	M = 1.03 Mn = 19.05	0.06
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.02608	0.07
Axial Force (D1-1)	$\frac{Pu}{0.90AgFy} < 1.00$	(kL/r)x =28 (kL/r)y =57	Pu = 2.48 Ag = 3.59 Fy = 46.00	0.02
Lateral Torsional Buckling	$\frac{M}{0.9Mn} < 1.00$ Critical Segment from 0.00 to 7.16 on -z flange Segment End Moments: 0.00 and 0.27	Lb = 7.16 Lp = 14.40	M = 1.03 Mn = 19.05	0.06
Combined Forces (tension) (H1-1b)	$\frac{Pu}{2\phi Pn} + \frac{Mux}{\phi Mnx} + \frac{Muy}{\phi Mny} < 1.00$		Mux = 1.03 Muy = 3.43	0.27

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN DATE: 7/28/23

ANTENNA MOUNT STRUCTURAL ANALYSIS DATE: 9/12/23

ANTENNA SUPPORT STRUCTURE (150'± MONOPOLE) STRUCTURAL ANALYSIS DATE: 9/12/23

verizon

20 ALEXANDER DRIVE, 2nd FLOOR, WALLINGFORD, CT 06492

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

PROJECT TYPE: WIRELESS TELECOMMUNICATIONS
COLLOCATION ON EXISTING 150'± MONOPOLE

SITE INFORMATION:

PARENT PARCEL OWNER:	MAZL LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920
TOWER OWNER:	GOOSETOWN NETWORK SERVICES, LLC 58 NORTH HARRISON AVENUE CONGERS, NY 10920 (845) 268-7500
TOWER OWNER ID:	UNKNOWN
APPLICANT:	CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE, 2nd FLOOR WALLINGFORD, CT 06492
SITE ADDRESS:	7A OLD WINDSOR ROAD BLOOMFIELD, CT 06002
COUNTY:	HARTFORD COUNTY, CT
SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE N 41°-51'-19.96" (41.855544°) (NAD '83) W 72°-42'-16.98" (72.704717°) (NAD '83)
JURISDICTION:	CONNECTICUT SITING COUNCIL
TAX ID PARCEL NUMBER:	MAP 16 BLOCK 56
ARCHITECT / ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
POWER COMPANY:	EVERSOURCE ENERGY 247 STATION DRIVE, SE 210 WESTWOOD, MA 02090 (781) 441-3610
TELEPHONE COMPANY:	VERIZON 185 FRANKLIN STREET BOSTON, MA 02107 (800) 941-9900

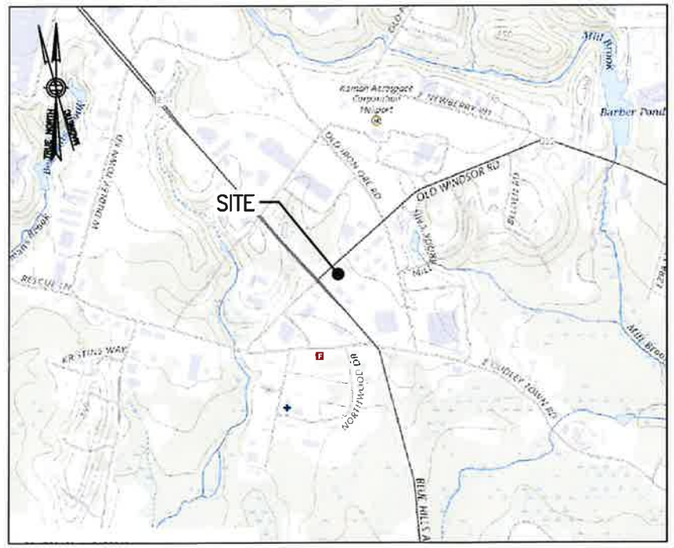
GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON 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.
2. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2022 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

VICINITY MAP

SCALE: 1"=1000'



DRIVING DIRECTIONS

FROM WALLINGFORD, TAKE I-91 NORTH. TAKE EXIT 37 FOR CT-305/BLOOMFIELD AVENUE TOWARD WINDSOR CENTER. USE LEFT 2 LANES TO TURN LEFT ONTO CT-305 W/BLOOMFIELD AVENUE. THE SITE WILL BE ON THE LEFT HAND SIDE.

SHEET INDEX

DWG.	DESCRIPTION	REV.
T01	TITLE SHEET	4
GN01	GENERAL NOTES	4
C01	PROPERTY PLAN	4
A01	MONOPOLE VICINITY PLAN	4
A02	EQUIPMENT AREA PLAN & DETAILS	4
A03	SOUTHEAST SITE ELEVATION	4
S01	ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS	4
RF01	ANTENNA MOUNTING PLAN AND DETAILS	4
RF02	ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS	4
RF03	RF BILL OF MATERIALS AND RF CABLE PLUMBING DIAGRAM	4
RF04	RF COLOR CODE SPECIFICATIONS	4
P01	PLUMBING NOTES AND SCHEMATIC	4
P02	SITE PLUMBING PLAN	4
E01	ELECTRICAL SPECIFICATIONS AND NOTES	4
E02	SITE UTILITY PLAN & DETAILS	4
E02A	MONOPOLE VICINITY UTILITY PLAN & DETAILS	4
E03	ELECTRICAL DIAGRAMS & DETAILS	4
E04	SCHEMATIC GROUNDING PLAN & DETAILS	4
E05	GROUNDING DETAILS	4

DO NOT SCALE DRAWINGS

ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS AT THE PROPOSED PROJECT SITE SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION PHASE. THE PROJECT OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO PROCEEDING WITH THE PROPOSED WORK AFFECTED BY SUCH DISCREPANCIES. IN THE EVENT OF LACK OF SUCH NOTIFICATION, SUCH DISCREPANCIES SHALL BECOME THE RESPONSIBILITY OF THE PREVAILING CONTRACTOR RESPONSIBLE FOR CONSTRUCTION.

PROJECT DESCRIPTION

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT INSTALLATION AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS TELECOMMUNICATIONS SERVICE.
2. THIS FACILITY WILL CONSUME NO UNRECOVERABLE ENERGY.
3. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil, Structural, Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

THESE DRAWINGS HAVE BEEN PREPARED IN ARCH D (24"x36") FORMAT. AS SUCH, THE WRITTEN SCALES SHOWN ON ANY REPRODUCTIONS OF A CONTRACTORS SIZE SHALL BE RENDERED INVALID. ALL BAR SCALES MAY BE USED REGARDLESS OF REPRODUCTION SIZE. WHERE IN CONFLICT, BAR SCALES SHALL SUPERSEDE WRITTEN SCALES.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

TITLE SHEET

DRAWING NO:

T01

SCALE: AS SHOWN	DESIGNED BY: MMC DRAWN BY: MMC CHECKED BY: GRS	VZW PROJECT NO.: 15433987 VZW LOCATION CODE: 753565
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   - CONTRACTOR – VERIZON WIRELESS
   - SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER – VERIZON WIRELESS
   - OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC. 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACK FILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH VERIZON WIRELESS NETWORK STANDARD #NSTD123 TO THE MAXIMUM EXTENT FEASIBLE UNLESS PRECLUDED OR LIMITED BY DESIGN SHOWN ON THESE DRAWINGS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. 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 SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR 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.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   - CONCRETE CAST AGAINST EARTH........3 IN.
   - CONCRETE EXPOSED TO EARTH OR WEATHER:
     - #6 AND LARGER ....2 IN.
     - #5 AND SMALLER & WWF ....1½ IN.
   - CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
     - SLAB AND WALL ....¾ IN.
     - BEAMS AND COLUMNS ....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON WIRELESS SPECIFICATION 25252–000–3PS–GET–00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"⌀) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.

2. COORDINATION OF WORK:
   SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
   SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANEL BOARD AND CIRCUIT ID'S).

8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #3 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON– CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR — DATE

DRAWING SCALE NOTE:

THESE DRAWINGS HAVE BEEN PREPARED IN ARCH D (24"x36") FORMAT. AS SUCH, THE WRITTEN SCALES SHOWN ON ANY REPRODUCTIONS OF A CONTRADICTORY SIZE SHALL BE RENDERED INVALID. ALL BAR SCALES MAY BE USED REGARDLESS OF REPRODUCTION SIZE. WHERE IN CONFLICT, BAR SCALES SHALL SUPERSEDE WRITTEN SCALES.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

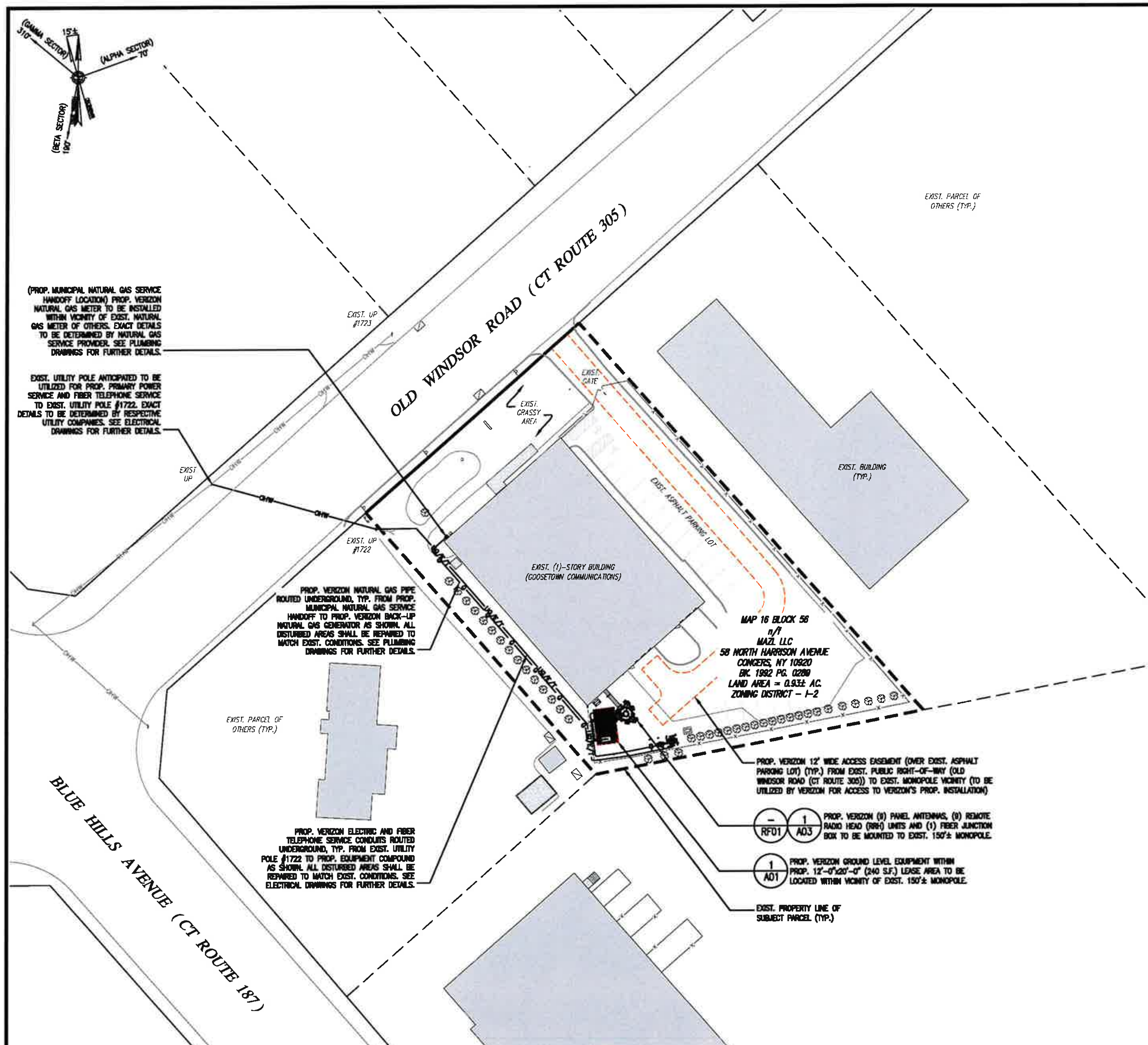
DRAWING TITLE:

GENERAL NOTES

DRAWING NO:

GN01

SCALE: N/A	DESIGNED BY: NWC	VZW PROJECT NO.: 15433987
	DRAWN BY: NWC	
	CHECKED BY: GRS	VZW LOCATION CODE: 783866
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



PROPERTY PLAN 1/C01
SCALE: 1" = 30'
0 15' 30' 60' 90'

GENERAL NOTES:

1. INITIAL DESIGN VISIT DATE: 1/13/23
2. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD '83)
4. SITE CONTROL POINT: CENTER OF EXISTING MONOPOLE
   LATITUDE: N. 41°-51'-19.96" (41.855544°) (NAD '83)
   LONGITUDE: W. 72°-42'-16.98" (72.704717°) (NAD '83)
5. PARENT PARCEL OWNER: MAZL LLC, 58 NORTH HARRISON AVENUE, CONGERS, NY 10920
6. TOWER OWNER: GOOSETOWN NETWORK SERVICES, LLC, 58 NORTH HARRISON AVENUE, CONGERS, NY 10920, (845) 268-7500
7. TOWER OWNER ID: UNKNOWN
8. SITE ADDRESS: 7A OLD WINDSOR ROAD, BLOOMFIELD, CT 06002
9. APPLICANT: CELLCO PARTNERSHIP (dba VERIZON WIRELESS), 20 ALEXANDER DRIVE, 2nd FLOOR, WALLINGFORD, CT 06492
10. JURISDICTION: CONNECTICUT SITING COUNCIL
11. TAX ID: MAP 16 BLOCK 56
12. DEED REFERENCE: BK. 1992 PG. 0289
13. PLAN REFERENCES: TOWN OF BLOOMFIELD ASSESSOR/GIS MAPS
14. ZONING CLASSIFICATION: I-2 (INDUSTRIAL)
15. 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 THE COMMENCEMENT OF ANY SITE WORK. CALL DIGSAFE 1-888-344-7233 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
16. THE PROPERTY LINES SHOWN WERE COMPILED UTILIZING TOWN OF BLOOMFIELD ASSESSOR'S PLANS, GIS, RECORDED DEEDS AND PLANS OF REFERENCE AS INDICATED. A COMPLETE BOUNDARY SURVEY WAS NOT UTILIZED IN THE PREPARATION OF THESE PLANS.
17. THE SITE IS LOCATED IN FLOOD HAZARD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON FLOOD INSURANCE RATE MAP FOR THE TOWN OF BLOOMFIELD, (MAP NUMBER 09003C0352F) EFFECTIVE 9/26/2008.
18. BEARING SYSTEM OF THIS PLAN IS BASED ON GRID NORTH. TRUE NORTH WAS ESTABLISHED FROM GPS OBSERVATIONS. IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF TRUE NORTH.

LEGEND

- OR STREET — PROPERTY LINE
- ABUTTING PROPERTY LINE
- PROPERTY OFFSET/RADIUS
- EXIST. EASEMENT
- EXIST. CHAIN LINK FENCE
- EXIST. STOCKADE FENCE
- EXIST. EDGE OF PAVEMENT
- OHW — EXIST. OVERHEAD UTILITIES
- APPROXIMATE ZONING BOUNDARY
- APPROXIMATE TOWN LINE

CLIENT:

verizon✓

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
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SEAL:

ENGINEER/LAND SURVEYOR — DATE

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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

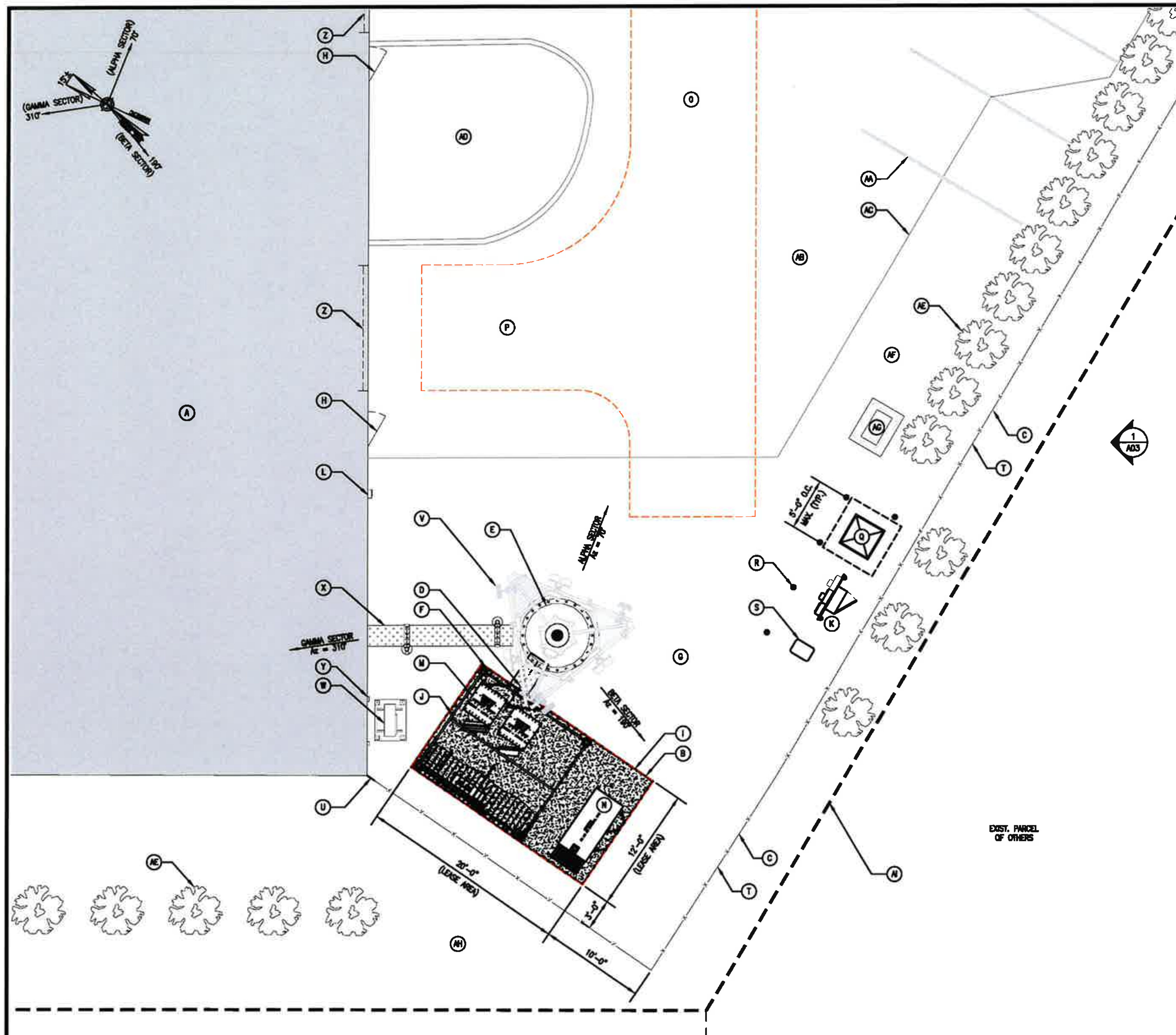
DRAWING TITLE:

PROPERTY PLAN

DRAWING NO:

C01

SCALE: 1" = 30'	DESIGNED BY: NMC DRAWN BY: NMC CHECKED BY: GRS	VZW PROJECT NO.: 18433867 VZW LOCATION CODE: 783866
CEA PROJECT NO.: 96210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



SITE CONTROL POINT:
CENTER OF EXISTING MONOPOLE
N 41°-51'-19.98" (41.855544°) (NAD '83)
W 72°-42'-16.98" (72.704717°) (NAD '83)
GROUND ELEVATION – 150.0' AMSL (NAVD '88)

PER GOOGLE EARTH

MONOPOLE VICINITY PLAN (1/A01)

SCALE: 3/16" = 1'-0"

0 — 5'-4" — 10'-8" — 16'-0"

LEGEND

ITEM	DESCRIPTION	REF.
A	EXIST. (1)-STORY BUILDING (GOOSETOWN COMMUNICATIONS)	
B	LIMITS OF VERIZON'S PROP. 20'-0"x12'-0" (240 S.F.) LEASE AREA/EQUIPMENT PAD (TYP.)	
C	EXIST. 7'± CHAIN-LINK FENCE (TYP.)	
D	PROP. VERIZON (2)-8x12 HYBRID SIGNAL CABLES ROUTED ALONG PROP. OVERHEAD CABLE ICE BRIDGE (TYP.) FROM VERIZON'S PROP. EQUIPMENT PAD TO EXIST. MONOPOLE AS SHOWN.	3/A02
E	EXIST. 150'± MONOPOLE	
F	PROP. VERIZON GPS ANTENNA MOUNTED TO PROP. METAL DECK ICE SHIELD. TOP OF GPS ANTENNA SHALL BE MOUNTED 2'-0" ABOVE TOP OF ICE SHIELD.	3/RF01
G	EXIST. GRAVEL COVER WITHIN EXIST. MONOPOLE VICINITY	
H	EXIST. PERSONNEL ACCESS DOOR	
I	PROP. VERIZON 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE EQUIPMENT PAD (TYP.)	6/S01
J	PROP. VERIZON 12'-6"x11'-10" (148± S.F.) METAL DECK ICE SHIELD (SHOWN TRANSPARENT FOR CLARITY) ABOVE PROP. EQUIPMENT	1–4/S01
K	APPROXIMATE LOCATION OF PROP. TELCO CABINET AND 3-GANG ELECTRIC METER BANK (TO BE EXPANDABLE TO 6-GANG AND DESIGNED TO ACCOMMODATE 800A ELECTRIC SERVICE). EXACT LOCATION, DETAILS AND DESIGN TO BE DETERMINED BY RESPECTIVE UTILITY COMPANIES.	2/E02A
L	EXIST. GOOSETOWN COMMUNICATIONS GENERATOR PLUG	
M	PROP. VERIZON EQUIPMENT CABINET MOUNTED TO PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD (TYP.)	1,2/A02
N	PROP. VERIZON 50kW BACK-UP NATURAL GAS GENERATOR MOUNTED TO PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD	1/E01
O	PROP. VERIZON 12' WIDE ACCESS EASEMENT (OVER EXIST. ASPHALT PARKING LOT) (TYP.) FROM EXIST. PUBLIC RIGHT-OF-WAY (OLD WINDSOR ROAD (CT ROUTE 305)) TO EXIST. MONOPOLE VICINITY (TO BE UTILIZED BY VERIZON FOR ACCESS TO VERIZON'S PROP. INSTALLATION). SEE SHEET C01 FOR CONTINUATION TO OLD WINDSOR ROAD (CT ROUTE 305).	
P	PROP. VERIZON 12'x20' PARKING SPACE OR TURN-AROUND AREA	
Q	APPROXIMATE LOCATION OF PROP. ELECTRIC TRANSFORMER (EXACT DETAILS AND LOCATION TO BE DETERMINED BY ELECTRIC COMPANY)	
R	PROP. 6"Ø CONCRETE FILLED STEEL BOLLARD (TYP. OF 5)	4/A02
S	PROP. TELCO HANDHOLE (EXACT DETAILS TO BE DETERMINED BY TELEPHONE COMPANY)	
T	EXIST. FENCE TO BE REPAIRED/REHABILITATED BY VERIZON AS REQUIRED.	
U	EXIST. FENCE GAP TO BE INFILLED BY VERIZON AS REQUIRED	
V	PROP. VERIZON (9) PANEL ANTENNAS, (9) RRH UNITS AND (1) FIBER JUNCTION BOX TO BE MOUNTED TO PROP. TRI-SECTOR STEEL MOUNTING PLATFORM ON EXIST. 150'± MONOPOLE.	–/RF01
W	EXIST. GOOSETOWN COMMUNICATIONS AC CONDENSING UNIT AND PEDESTAL	
X	EXIST. GOOSETOWN COMMUNICATIONS OVERHEAD CABLE ICE BRIDGE (TYP.)	
Y	EXIST. GOOSETOWN COMMUNICATIONS AS CONDENSING UNIT DISCONNECT SWITCH	
Z	EXIST. OVERHEAD DOOR	
AA	EXIST. PARKING STRIPE (TYP.)	
AB	EXIST. ASPHALT PARKING LOT	
AC	APPROXIMATE EDGE OF EXIST. ASPHALT SURFACE (TYP.)	
AD	EXIST. MULCH BED	
AE	APPROXIMATE LOCATION OF EXIST. EVERGREEN TREE (TYP.) (ALL TO REMAIN)	
AF	EXIST. GRAVEL AREA	
AG	EXIST. STORM DRAIN (EXIST. UNDERGROUND DRAIN PIPES (NOT SHOWN FOR CLARITY) SHALL BE IDENTIFIED IN FIELD AND LEFT UNDISTURBED DURING ALL PHASES OF CONSTRUCTION.	
AH	EXIST. GRASSY AREA	
AI	APPROX. EXIST. PROPERTY LINE (TYP.)	

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR   DATE

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REVISIONS

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

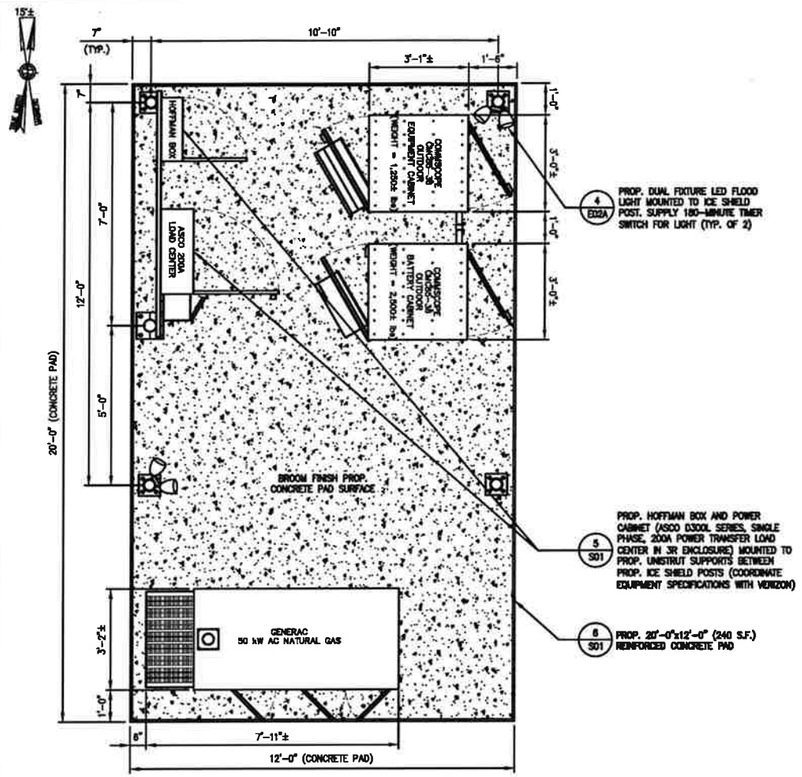
DRAWING TITLE:

MONOPOLE VICINITY PLAN

DRAWING NO:

A01

SCALE: 3/16" = 1'-0"	DESIGNED BY: HMC DRAWN BY: HMC CHECKED BY: GRS	VZW PROJECT NO.: 16433987 VZW LOCATION CODE: 783666
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920638



4 E02A PROP. DUAL FIXTURE LED FLOOD LIGHT MOUNTED TO ICE SHIELD POST. SUPPLY 180-MINUTE TIMER SWITCH FOR LIGHT (TYP. OF 2)

5 S01 PROP. HOFFMAN BOX AND POWER CABINET (ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE) MOUNTED TO PROP. UNISTRUT SUPPORTS BETWEEN PROP. ICE SHIELD POSTS (COORDINATE EQUIPMENT SPECIFICATIONS WITH VERIZON)

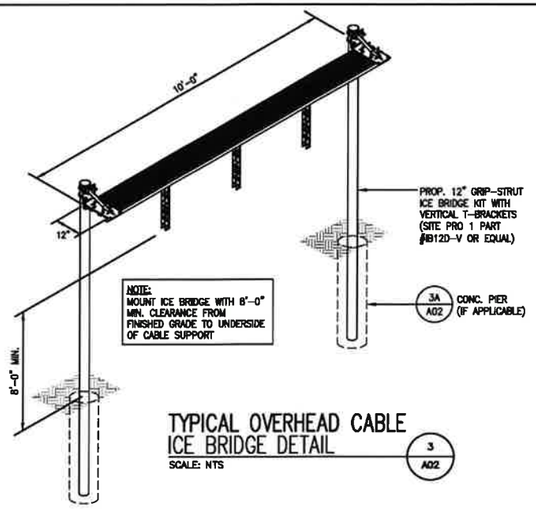
6 S01 PROP. 20'-0"x12'-0" (240 S.F.) REINFORCED CONCRETE PAD

NOTE:
ANTENNAS, CABLE TRAYS, CABLES, CONDUITS, PIPING, ETC. WITHIN VICINITY OF EQUIPMENT PAD NOT SHOWN FOR CLARITY. COORDINATE ALL REQUIRED WORK WITH THAT OF OTHER TRADES.

EQUIPMENT AREA PLAN (1 A02)

SCALE: ½" = 1'-0"

0 2'-0" 4'-0" 6'-0"



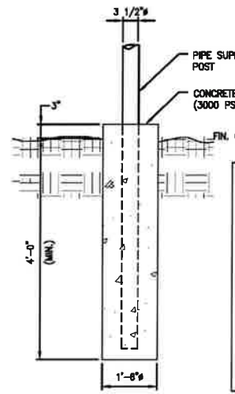
NOTE:
MOUNT ICE BRIDGE WITH 8'-0" MIN. CLEARANCE FROM FINISHED GRADE TO UNDERSIDE OF CABLE SUPPORT

PROP. 12" GRIP-STRUT ICE BRIDGE KIT WITH VERTICAL T-BRACKETS (SITE PRO 1 PART #B12D-V OR EQUAL)

3A A02 CONC. PIER (IF APPLICABLE)

TYPICAL OVERHEAD CABLE ICE BRIDGE DETAIL (3 A02)

SCALE: NTS

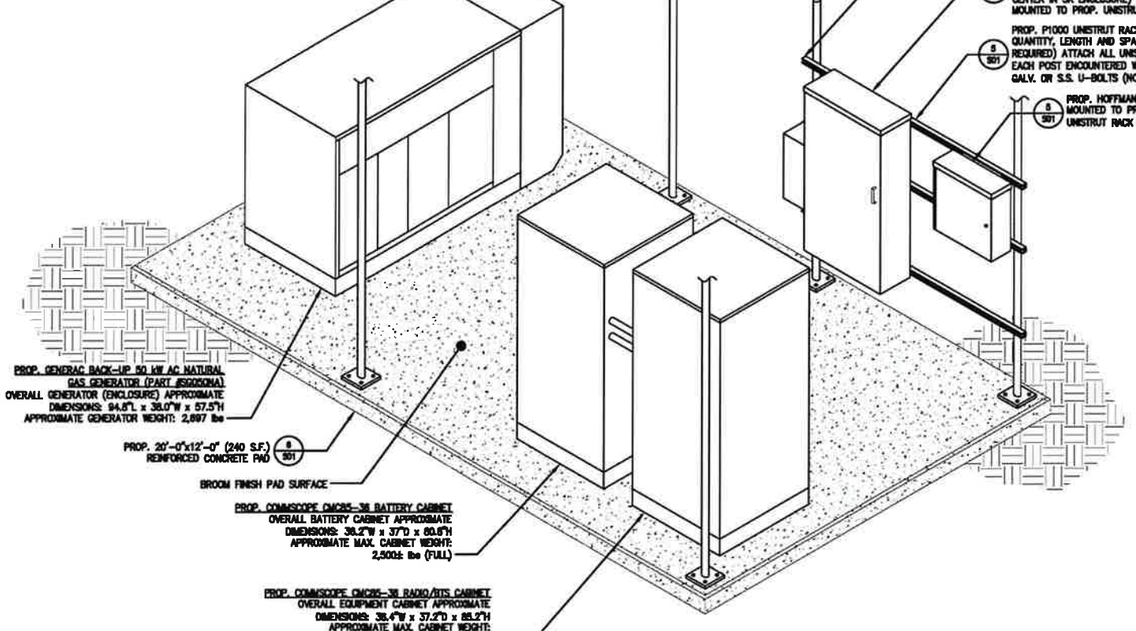


NOTES:

1. FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
2. FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8"ø HOLE INTO LEDGE 18" DEEP. FILL AROUND PIPE WITH NON-SHRINK GROUT. USE COAL TAR ON BURIED LENGTH OF PIPE, AND BACKFILL TO FINISH GRADE
3. FOR CONCRETE, FASTEN BASEPLATE WITH (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
4. FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x⅜" BASE PLATE WITH (2)-13/16"ø HOLES @ 6" O.C.

CABLE BRIDGE PIER (3A A02)

SCALE: NTS



EQUIPMENT AREA ISOMETRIC VIEW (2 A02)

SCALE: NOT APPLICABLE

NOTE:
REPAIR DISTURBED GROUND SURFACE WITHIN VICINITY OF NEW BOLLARD TO MATCH EXISTING CONDITIONS.

TYPICAL BOLLARD DETAIL (4 A02)

SCALE: NONE

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

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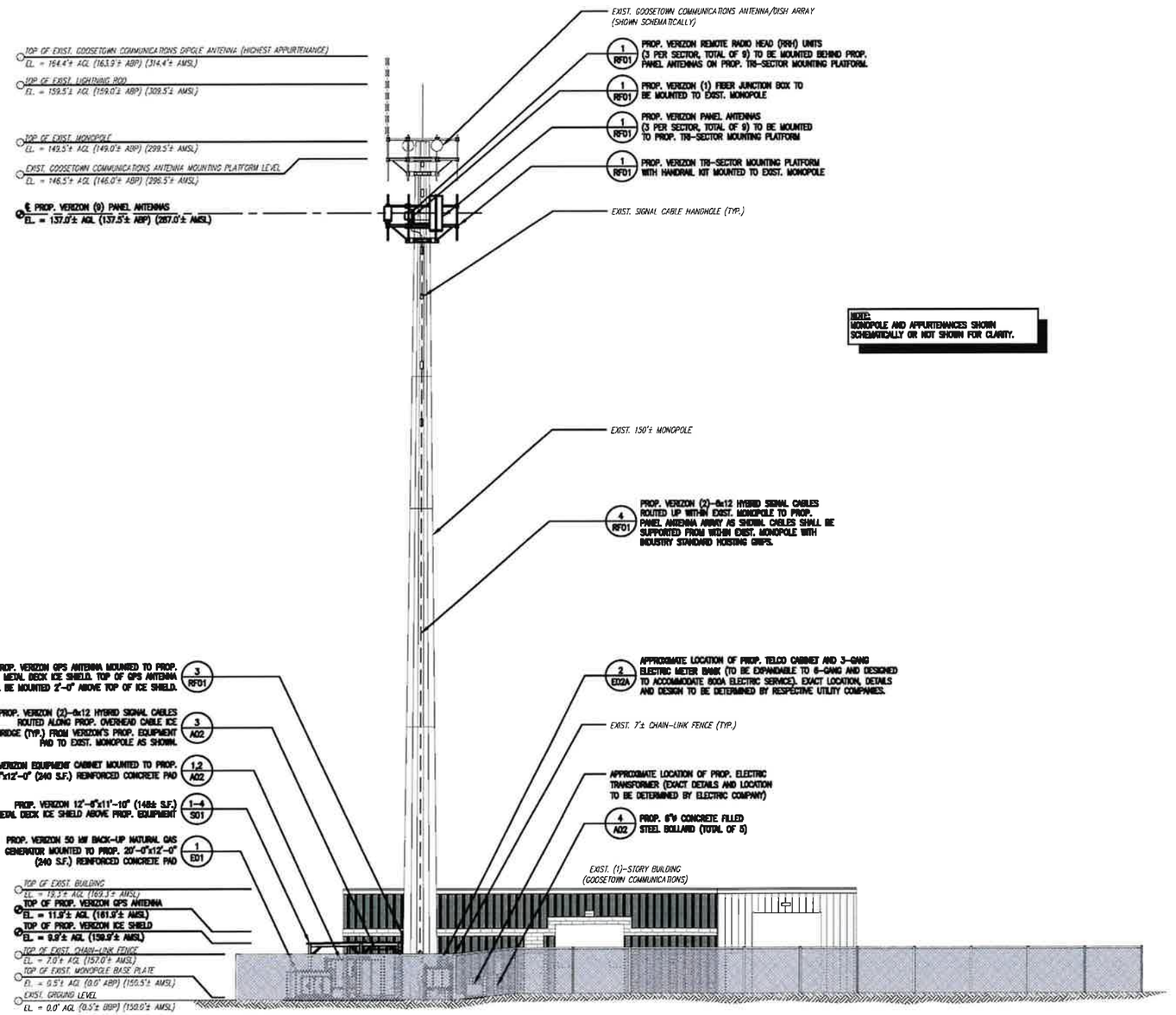
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
EQUIPMENT AREA PLAN & DETAILS

DRAWING NO:
A02

SCALE: AS SHOWN	DESIGNED BY: MMC DRAWN BY: MMC CHECKED BY: GRS	VZW PROJECT NO.: 16433987
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	VZW LOCATION CODE: 733696
		MDG LOCATION ID: 5000920838



SOUTHEAST SITE ELEVATION (1 / A03)

SCALE: 1" = 10'

0 5' 10' 20' 30'

LEGEND	
AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

Civil Structural Land Surveying

R.K. EXECUTIVE CENTRE
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SUITE 101
MARLBOROUGH, MA 01752
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SEAL:

ENGINEER/LAND SURVEYOR DATE

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PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

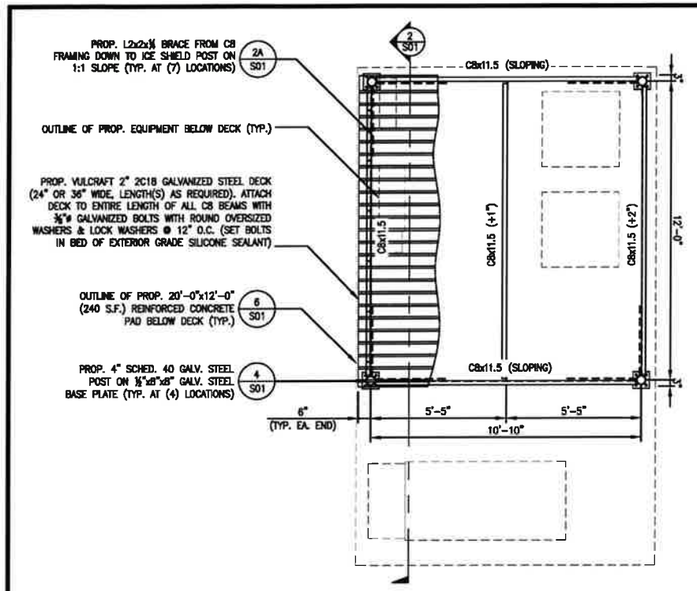
DRAWING TITLE:

SOUTHEAST SITE ELEVATION

DRAWING NO:

A03

SCALE: 1" = 10'	DESIGNED BY: MMC	VZW PROJECT NO.: 16433987
	DRAWN BY: MMC	
	CHECKED BY: CRS	VZW LOCATION CODE: 783686
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838

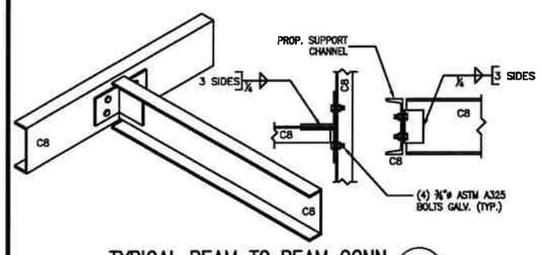


FRAMING PLAN NOTES:
1.) ALL STEEL SHALL BE INSTALLED LEVEL UNLESS OTHERWISE NOTED.
2.) TOP OF NEW STEEL ELEVATION SHALL BE HELD 9'-6" ABOVE EQUIPMENT PAD SURFACE UNLESS OTHERWISE NOTED THUS (±X") INDICATING DISTANCE ABOVE OR BELOW TOP OF STEEL REFERENCE ELEVATION.

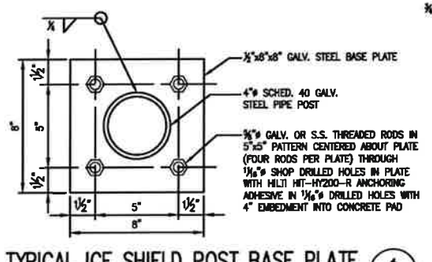
ICE SHIELD FRAMING PLAN
SCALE: 3/8" = 1'-0" — 1 S01

NORTH

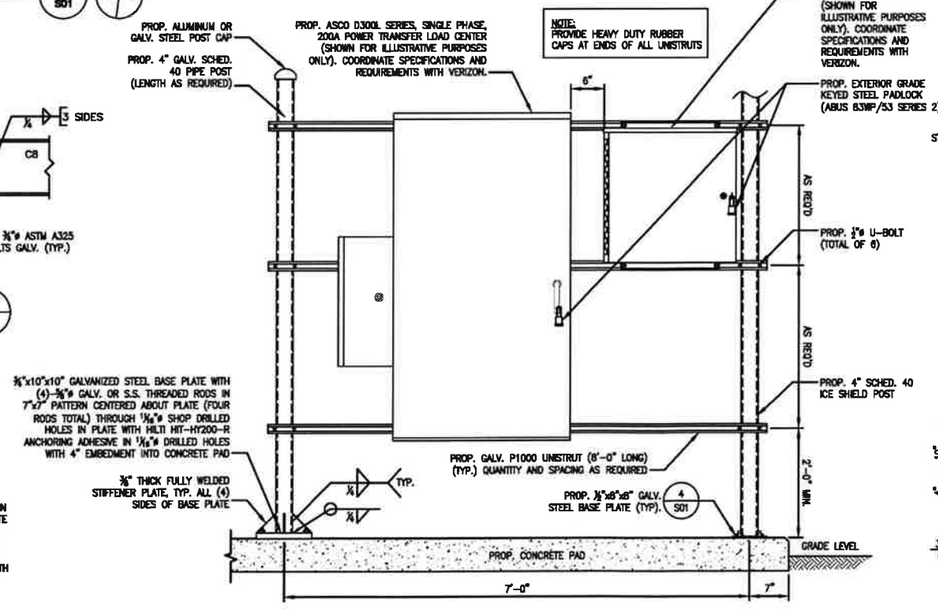
0 2'-8" 5'-4" 8'-0"



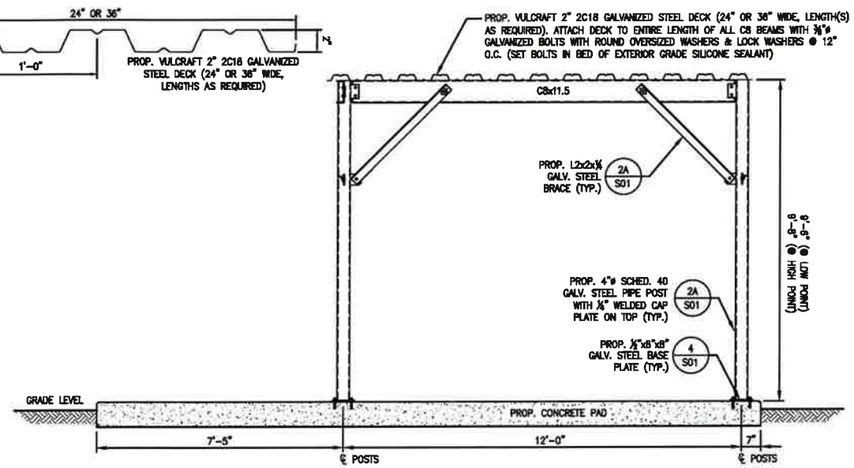
TYPICAL BEAM TO BEAM CONN.
SCALE: NOT TO SCALE — 3 S01



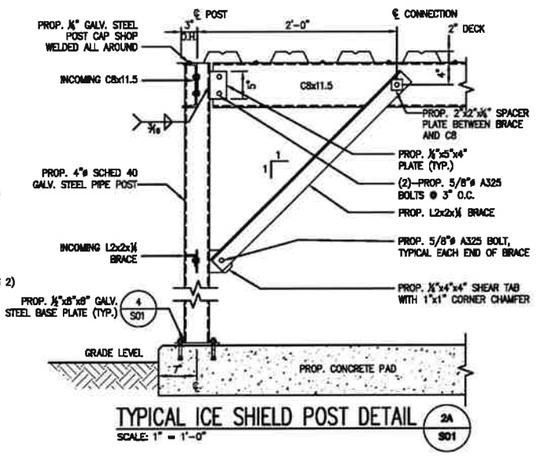
TYPICAL ICE SHIELD POST BASE PLATE
SCALE: NONE — 4 S01



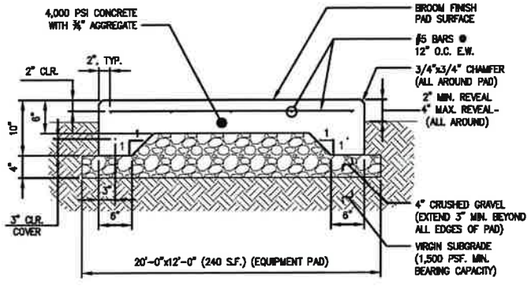
UNISTRUT RACK DETAIL
SCALE: N.T.S. — 5 S01



ICE SHIELD SECTION
SCALE: 1/2" = 1'-0" — 2 S01



TYPICAL ICE SHIELD POST DETAIL
SCALE: 1" = 1'-0" — 2A S01



REINFORCED CONCRETE PAD DETAIL
SCALE: NONE — 6 S01

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
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MARLBOROUGH, MA 01752
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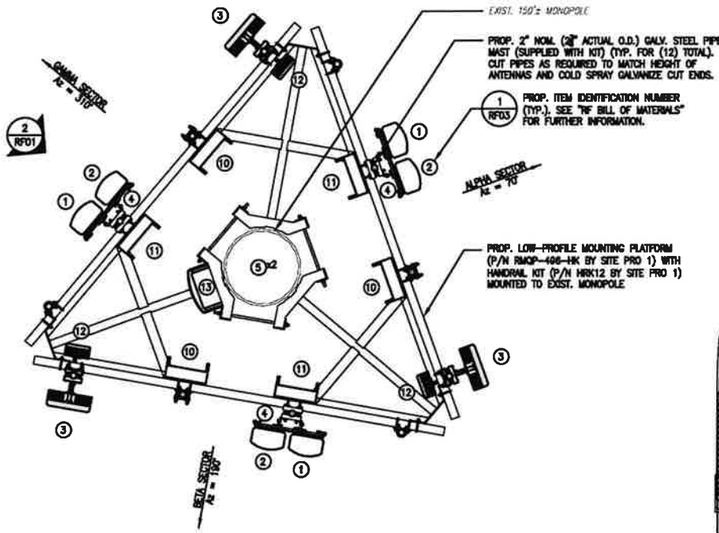
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS

DRAWING NO:
S01

SCALE: AS SHOWN	DESIGNED BY: MBC	VZW PROJECT NO.: 16433987
	DRAWN BY: MBC	
	CHECKED BY: CRS	VZW LOCATION CODE: 7838966
CEA PROJECT NO.: 96210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



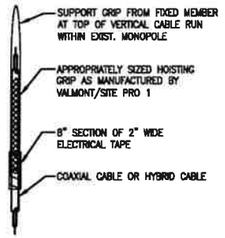
(MONOPOLE PLAN VIEW AT ELEVATION 137.0'± AGL)

ANTENNA MOUNTING PLAN 1 RF01

SCALE: 1/2" = 1'-0"

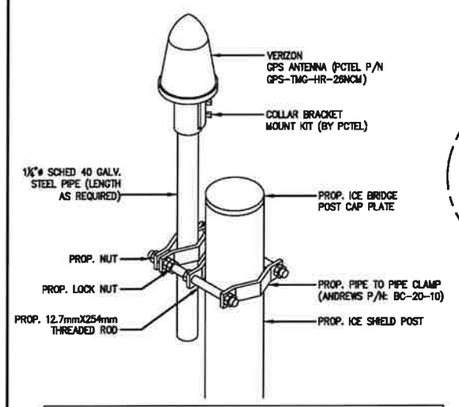
0 2'-0" 4'-0" 6'-0"

NORTH



TYPICAL HOISTING GRIP DETAIL 4 RF01

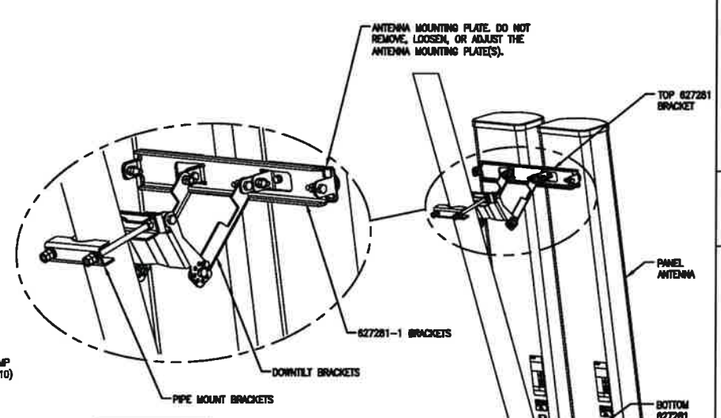
SCALE: NONE



NOTE:
THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1¼" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

GPS ANTENNA MOUNTING DETAIL 3 RF01

SCALE: N.T.S.



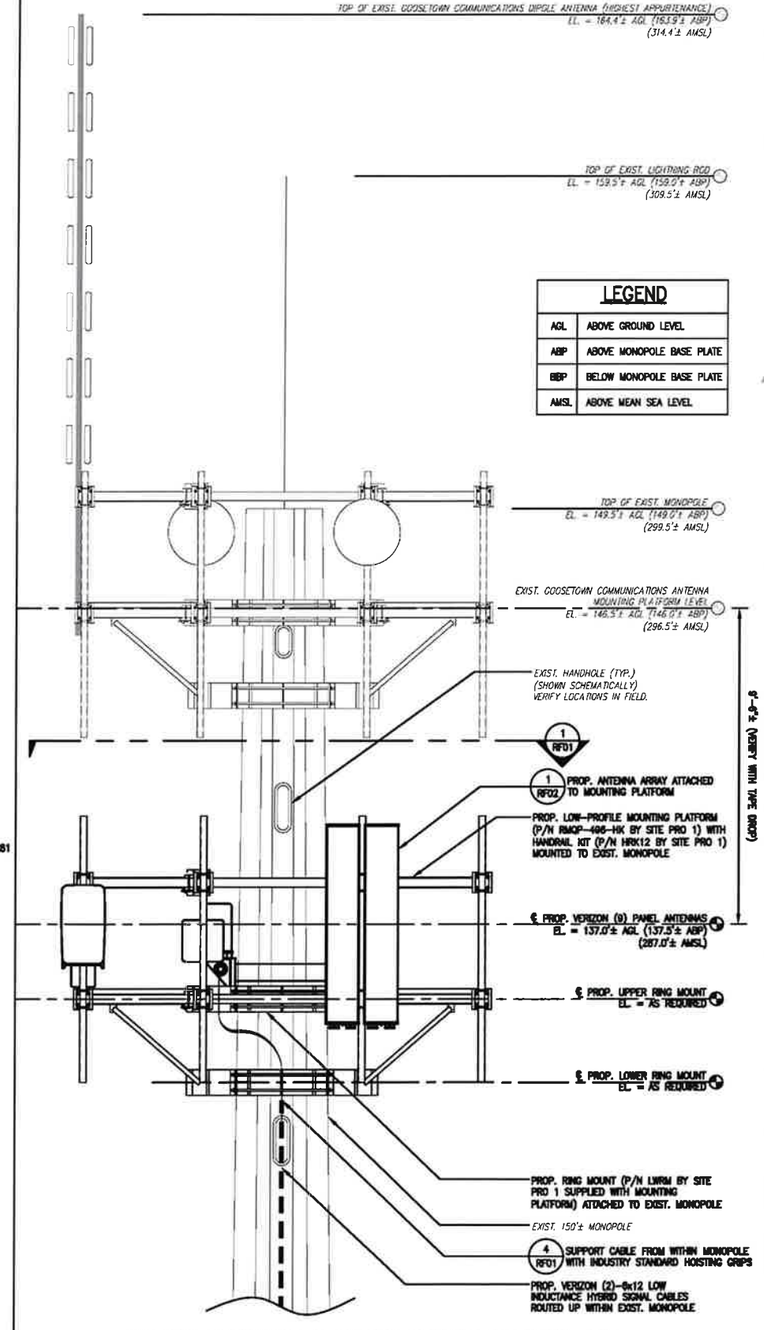
ITEM 4

SIDE-BY-SIDE ANTENNA MOUNT BRACKET	
WEIGHT:	25.4 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

MOUNT ANTENNA IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PROCEDURE

TYPICAL SIDE-BY-SIDE ANTENNA MOUNT KIT (COMMSCOPE PART #BSAMNT-SBS-1-2) 5 RF01

SCALE: NOT TO SCALE



ANTENNA MOUNTING PLATFORM MOUNTING DETAIL 2 RF01

SCALE: 1/2" = 1'-0"

LEGEND	
AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

CLIENT:
verizon

ARCHITECT/ENGINEER:
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PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
ANTENNA MOUNTING PLAN AND DETAILS

DRAWING NO:
RF01

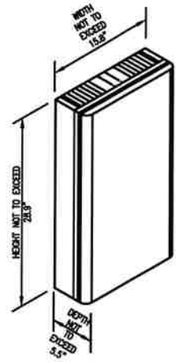
SCALE: AS SHOWN	DESIGNED BY: MRC	VZW PROJECT NO.: 15433987
	DRAWN BY: MRC	
	CHECKED BY: CMS	VZW LOCATION CODE: 7839966
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838

COMMSCOPE
NHH-65B-R2B

ITEM 1	
LTE (700/850/5G/1900 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	43.7 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

COMMSCOPE
NHHSS-65B-R2B-R2BT4

ITEM 2	
LTE (2100/CBRS MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	48.1 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	



SAMSUNG
MT6413-77A

ITEM 3	
MT6413-77A ANTENNA	
MAX. DIMENSIONS:	28.9"H x 15.8"W x 5.5"D
MAX. WEIGHT:	57.3 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL PROP. PANEL ANTENNA SPECIFICATIONS

SCALE: N.T.S.

1 RF02

SAMSUNG
RF4461d-13A

ITEM 10	
LTE/NR (700/850/5G MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.2"D
WEIGHT:	79.1 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

SAMSUNG
RF4439d-25A B25/B66A

ITEM 11	
LTE/NR (1900/2100 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.0"D
WEIGHT:	74.7 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

SAMSUNG
RT4423-48A

ITEM 12	
(BAND 48 (3.5 GHz)) NR AU RRH	
DIMENSIONS:	11.8"H x 8.7"W x 4.2"D
WEIGHT:	18.7 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL REMOTE RADIO HEAD (RRH) UNIT DIMENSIONS

SCALE: N.T.S.

2 RF02

Procedure

Mounting Procedures

4.1 A mounting base is delivered with the unit. The base allows either wall/ladder or pole mounted installation. See picture to identify the holes for each installation method.

4.2 ***Option 1: Pole Mount***
Using supplied hardware, mount Bracket to 2" to 4" diameter pole.

4.3 ***Option 2: Unistrut***

4.4 ***Option 3: Monopole***
Use 1" stainless steel bands (not supplied) through slots on bracket to mount to Monopole.

Gland/Insert Definitions

5.1 See picture to identify Base Gland Assembly Definitions.

Assembled in unit as shipped:

Qty	Connector Size	Pos	Insert P/N	Insert Hole	Cable Type
2	M75	A	190-0760	42mm	6x12 RL
4	M75	B	190-0738	3x 16.5mm	1x2

Included in kit shipped with unit:

Qty	Connector Size	Insert P/N	Insert Hole	Cable Type	Purpose	Pos
2	M75	190-0760	42mm	6x12 RL	2 glands fit 1 each 6/12 Hyb	B
2	M75	190-0747	2x 24.5mm	2x12 DC	2 glands fit 2 each #6 12 cond OC	B
1	M75	190-0935	2x 10.5mm	2x12 Fiber	1 gland fit 2 x 12 fiber trunk	B
1	M75	190-0912	2x 9.5mm	2 ETH	1 gland fits 2 ethernet cable	B

ITEM 13	
FIBER JUNCTION BOX	
DIMENSIONS:	29.56"H x 16.5"W x 12.6"D
WEIGHT:	32.0 LBS
QUANTITY:	TOTAL OF 1
STATUS: PROPOSED	

TYPICAL FIBER JUNCTION BOX DIMENSIONS, SCHEMATIC AND MOUNTING PROCEDURE

SCALE: N.T.S.

3 RF02

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:
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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS

DRAWING NO:
RF02

SCALE: AS SHOWN	DESIGNED BY: MBC	VZW PROJECT NO.: 15433687
	DRAWN BY: MBC	
	CHECKED BY: CRS	VZW LOCATION CODE: 783866
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDC LOCATION ID: 5000920838

RF BILL OF MATERIALS (PROP. (FINAL) CONFIGURATION)

SITE NAME: BLOOMFIELD 5 CT A = ALPHA SECTOR B = BETA SECTOR G = GAMMA SECTOR

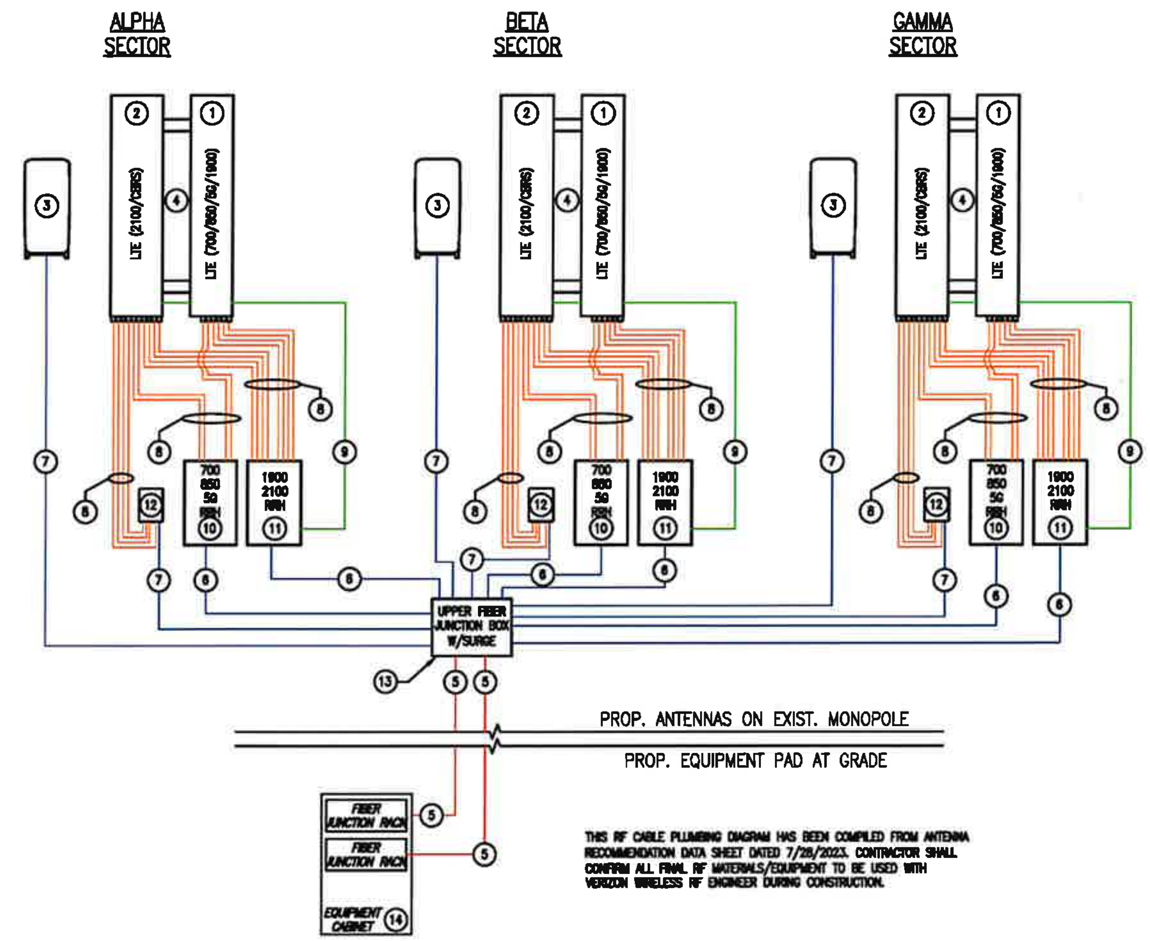
ITEM (SEE PLAN)	DESCRIPTION	BAND	QTY	STATUS	CABLE LENGTH/UNIT SIZE	COMMENTS
1	PANEL ANTENNA	700/850/50/1900	3 TOTAL (A,B,G)	PROP.	72.0"H x 11.9"W x7.1"D (43.7 lbs, each)	MOUNT TO PROP. SIDE-BY-SIDE MOUNT
2	PANEL ANTENNA	2100/CBRS	3 TOTAL (A,B,G)	PROP.	72.0"H x 11.9"W x7.1"D (48.1 lbs, each)	MOUNT TO PROP. SIDE-BY-SIDE MOUNT
3	PANEL ANTENNA	3700-3980	3 TOTAL (A,B,G)	PROP.	28.9"H x 15.6"W x 5.5"D (57.3 lbs, each)	MOUNT TO PROP. PIPE MAST
4	SIDE-BY-SIDE ANTENNA MOUNT KIT	–	3 TOTAL (A,B,G)	PROP.	25.4 lbs, each	MOUNT TO PROP. PIPE MAST
5	6x12 HYBRID SIGNAL CABLE (MAIN LINE)	–	2 TOTAL	PROP.	155 FT.±	ROUTE FROM PROP. EQUIPMENT, ALONG PROP. OVERHEAD CABLE ICE BRIDGE TO EXIST. MONOPOLE AND UP WITHIN MONOPOLE TO PROP. FIBER JUNCTION BOX
6	1x1 HYBRID SIGNAL CABLE (JUMPER)	–	6 TOTAL (2 PER SECTOR)	PROP.	20 FT. MAX. EACH	ROUTE FROM PROP. UPPER FIBER JUNCTION BOX TO PROP. RRH UNITS
7	1x2 HYBRID SIGNAL CABLE (JUMPER)	–	6 TOTAL (2 PER SECTOR)	PROP.	20 FT. MAX. EACH	ROUTE FROM PROP. UPPER FIBER JUNCTION BOX TO PROP. ANTENNAS/CBRS RRH UNITS
8	½"ø COAXIAL CABLE (JUMPER)	–	48 TOTAL (16 PER SECTOR)	PROP.	20 FT. MAX. EACH	ROUTE FROM PROP. REMOTE RADIO HEAD (RRH) UNITS TO PROP. PANEL ANTENNAS
9	RET CONTROL CABLE(S) (JUMPER)	–	PER RF REQ.	PROP.	20 FT. MAX. EACH	ROUTE FROM PROP. REMOTE RADIO HEAD (RRH) UNITS TO PROP. PANEL ANTENNAS
10	REMOTE RADIO HEAD (RRH) UNIT	700/850/50	3 TOTAL (A,B,G)	PROP.	15.0"H x 15.0"W x 10.2"D (78.1 lbs, each)	MOUNT TO PROP. PIPE MAST
11	REMOTE RADIO HEAD (RRH) UNIT	1900/2100	3 TOTAL (A,B,G)	PROP.	15.0"H x 15.0"W x 10.0"D (74.7 lbs, each)	MOUNT TO PROP. PIPE MAST
12	REMOTE RADIO HEAD (RRH) UNIT	BAND 48	3 TOTAL (A,B,G)	PROP.	11.5"H x 8.7"W x 4.2"D (18.7 lbs, each)	MOUNT TO PROP. PIPE MAST
13	UPPER FIBER JUNCTION BOX W/SURGE	–	1 TOTAL	PROP.	29.58"H x 16.5"W x 12.6"D (32.0 lbs, each)	MOUNT TO EXIST. MONOPOLE
14	RADIO CABINET/FIBER JUNCTION RACK	–	1 TOTAL	PROP.	29.58"H x 16.5"W x 12.6"D (32.0 lbs, each)	EQUIPMENT CABINET/ROOM INTERFACE

(Items 1–3: 1/RF02; item 4: 5/RF01; items 10–12: 2/RF02; items 13–14: 3/RF02)

THIS RF BILL OF MATERIALS (BOM) HAS BEEN COMPILED FROM ANTENNA RECOMMENDATION DATA SHEET DATED 7/28/2023. CONTRACTOR SHALL CONFIRM ALL FINAL RF MATERIALS/EQUIPMENT TO BE USED WITH VERIZON WIRELESS RF ENGINEER DURING CONSTRUCTION.

RF BILL OF MATERIALS (FINAL CONFIGURATION) 1/RF03
SCALE: NONE

NOTE:
ARRANGEMENT OF ANTENNAS, REMOTE RADIO HEAD (RRH) UNITS, FIBER JUNCTION BOXES AND ALL ASSOCIATED WIRING AND ANCILLARY EQUIPMENT SHOWN SCHEMATICALLY ON THIS PLUMBING DIAGRAM. SEE PROP. ANTENNA ORIENTATION PLAN(S) AND CROSS REFERENCE WITH RF BILL OF MATERIALS FOR PROP. ANTENNA/EQUIPMENT PLACEMENT DETAIL.



RF CABLE PLUMBING DIAGRAM (FINAL CONFIGURATION) 2/RF03
SCALE:

RADIO FREQUENCY (RF) DESIGN NOTES:
1) ALL RADIO FREQUENCY (RF) DESIGN INFORMATION CONTAINED ON THIS SHEET IS SHOWN SCHEMATICALLY.

2) THE GENERAL CONTRACTOR SHALL CONFIRM ALL RF DESIGN ELEMENTS SHOWN (INCLUDING BUT NOT LIMITED TO PANEL ANTENNA MODELS & ARRANGEMENT, AZIMUTHS, REMOTE RADIO HEAD (RRH) UNIT MODELS & ARRANGEMENT AND CABLING DIAGRAMS/SCHEMATICS) WITH THE VERIZON WIRELESS RF ENGINEER AT THE TIME OF CONSTRUCTION.

LEGEND

RED	= HYBRID CABLE (MAIN LINE)
PURPLE	= COAXIAL CABLE (MAIN LINE)
BLUE	= 1x1 HYBRID CABLE (JUMPER)
ORANGE	= 1/2"ø COAXIAL CABLE (JUMPER)
GREEN	= RET CONTROL CABLE(S) (JUMPER)

CLIENT: verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

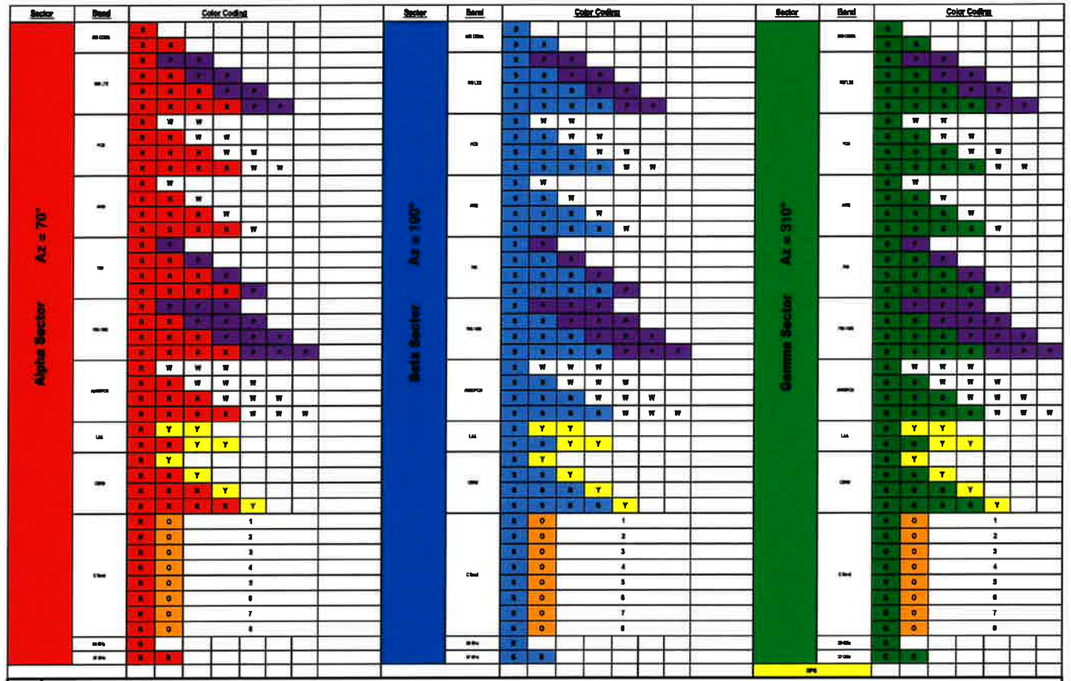
DRAWING TITLE:

RF BILL OF MATERIALS AND RF CABLE PLUMBING DIAGRAM

DRAWING NO:

RF03

SCALE: AS SHOWN	DESIGNED BY: MMC	VZW PROJECT NO.: 16433987
	DRAWN BY: MMC	
	CHECKED BY: GRS	VZW LOCATION CODE: 783868
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



Main Line Cable Length/Information

CABLE LENGTH PROVIDED BELOW IS APPROXIMATE IN NATURE AND REFLECTED AS AN ADJUSTED VALUE TO PROVIDE ADEQUATE LENGTH. ANY FIELD MEASUREMENTS OF ANTICIPATED CABLE LENGTH IS ENCOURAGED IN AN EFFORT TO REDUCE SLACK AND TO OPTIMIZE DESIGN. SUCH FIELD MEASUREMENTS MAY SUPERCEDE THE LENGTH PROVIDED BELOW AT THE DISCRETION OF THE GENERAL CONTRACTOR

155'±

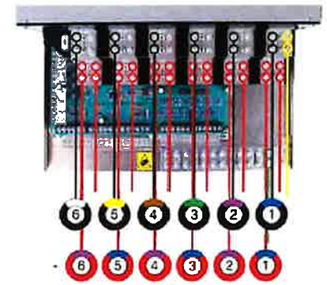
TWO (2) PROPOSED 6x12 HYBRID SIGNAL CABLES

LINE COLOR CODE SPECIFICATIONS (1 / RF04)

Hybrid Cable on Towers

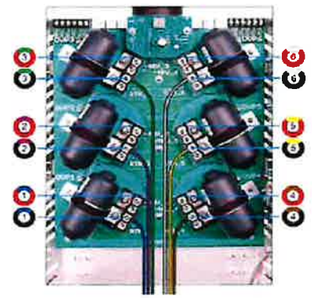
Hybrid Cable 1

Sector	Identification Color	-48V	RTN
700 Alpha	Blue		
AWS Alpha	Violet		
PCS Alpha	Green		
850 Alpha	Brown		
Spare	Yellow		
Spare	White		



Hybrid Cable 2

Sector	Identification Color	-48V	RTN
700 Beta	Blue		
AWS Beta	Violet		
PCS Beta	Green		
850 Beta	Brown		
Spare	Yellow		
Spare	White		



HYBRID CABLE COLOR CODE SPECIFICATIONS (2 / RF04)

CLIENT: verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
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MARLBOROUGH, MA 01752
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DRAWING SCALE NOTE:

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PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

RF COLOR CODE SPECIFICATIONS

DRAWING NO:

RF04

SCALE: N/A	DESIGNED BY: MMC	VZW PROJECT NO.: 16433987
	DRAWN BY: MMC	
CEA PROJECT NO.: 98210.413	CHECKED BY: CRS	VZW LOCATION CODE: 753966
	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838

GENERAL PLUMBING NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE AND FULLY OPERATING SYSTEM INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY AS INDICATED ON DRAWINGS AND AS DESCRIBED IN THESE SPECIFICATIONS.

2. THE CONTRACTOR SHALL PERFORM ALL CUTTING, DEMOLISHING, REMOVAL, DISPOSAL, PATCHING, SEALING, RESTORATION AND ALL ELSE REQUIRED TO COMPLETE THE PLUMBING INSTALLATION.

3. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LOCALLY PRESIDING BUILDING CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

4. THIS CONTRACTOR SHALL PAY ALL FEES AND TAXES, OBTAIN ALL PERMITS AND APPROVALS, FILE THE REQUIRED DOCUMENTS AND CAUSE ALL INSPECTIONS.

5. SHOP DRAWINGS OF THE FOLLOWING SHALL BE SUBMITTED TO THE OWNER'S PROJECT REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION:

   A. LAYOUT OF ALL EQUIPMENT
   B. DIMENSIONED AND DETAILED PIPING LAYOUT
   C. MANUFACTURER'S SPECIFICATIONS OF ALL EQUIPMENT SPECIFIED
   D. DETAILED CONTROL WIRING DIAGRAMS

6. ALL PIPE HANGERS SHALL BE ATTACHED TO THE BUILDING/SUPPORT STRUCTURE. PROVIDE TRAPEZE SUPPORTS AS REQUIRED.

7. THE DIGGING OF HANGERS, CHOPPING, CORE DRILLING, WORK IN OTHER TENANT SPACES OR OCCUPIED AREAS, WORK CREATING FUMES ETC. OR WORK DEEMED BY THE OWNER TO BE A NUISANCE TO OTHER TENANTS SHALL BE DONE AFTER WORKING HOURS.

8. ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS AND FLOORS SHALL BE FIRESTOPPED WITH HILTI FIRESTOPPING MATERIAL. PROVIDE PIPE SLEEVES FOR ALL PENETRATIONS SEALED WITH AN APPROVED FIRESTOP.

9. THIS CONTRACTOR SHALL FURNISH A ONE (1) YEAR GUARANTEE ON PARTS AND LABOR OF THE INSTALLATION FROM THE DATE OF OWNER ACCEPTANCE AND A FIVE (5) YEAR COMPRESSOR WARRANTY WHERE AVAILABLE.

10. CONTRACTOR SHALL FURNISH ALL NECESSARY CONTROLS, STARTERS, PUMPS, MOTORS, PANELS AND RELAYS ETC. FOR A FULLY FUNCTIONING SYSTEM.

11. BAKELITE LABELS SHALL BE INSTALLED AT ALL NEW EQUIPMENT FOR IDENTIFICATION PURPOSES.

12. ANY REQUIRED SHUTDOWNS OF BASE BUILDING SYSTEMS FOR CONNECTION OF TENANT SYSTEMS MUST BE PRIOR APPROVED AND COORDINATED WITH ALL APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES. THIS CONTRACTOR SHALL ASSUME ALL FEES REQUIRED BY THE OWNER TO ARRANGE AND SUPERVISE THE SHUTDOWN(S).

13. THE CONTRACTOR SHALL VISIT THE LOCATIONS OF ALL PROPOSED WORK AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING AND FORECASTED CONDITIONS AND LIMITATIONS.

14. VERIFY ALL EXISTING CONDITIONS. ALL NEW PIPING AND EQUIPMENT SHALL BE COORDINATED WITH ALL EXISTING DUCTWORK, PIPING, ELECTRICAL AND GENERAL SITE CONDITIONS.

15. ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, ELECTRICAL AND GENERAL SITE CONDITIONS SHOWN ARE APPROXIMATE AND EXACT CONDITIONS MUST BE VERIFIED IN THE FIELD THROUGHOUT CONSTRUCTION.

16. ALL WORK SHALL CONFORM TO THE GOVERNING BASE BUILDING/PROPERTY STANDARDS.

17. THE CONTRACTOR SHALL COORDINATE WITH THE BASE BUILDING/PROPERTY MANAGEMENT AS TO THE DELIVERY OF EQUIPMENT AND SCHEDULING OF WORK SO AS TO NOT INTERFERE WITH THE OPERATION OF THE OCCUPIED FACILITIES. ANY REQUIRED SHUTDOWNS OF THE EXISTING BASE BUILDING/PROPERTY SYSTEMS OR WORK OUTSIDE OF THE DEMISING AREA SHALL BE STRICTLY COORDINATED WITH ALL APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES.

18. ALL ANCILLARY POWER AND LINE VOLTAGE WIRING SHALL BE DONE BY A LICENSED AND INSURED ELECTRICAL CONTRACTOR BASED UPON THE DIAGRAMS FURNISHED BY THE MECHANICAL CONTRACTOR.

GENERAL PLUMBING NOTES (CONTINUED):

19. ALL MATERIAL AND APPARATUS SHALL BE NEW AND IN FIRST CLASS CONDITION. ALL MATERIAL AND APPARATUS SHALL HAVE MARKINGS OR A NAMEPLATE IDENTIFYING THE MANUFACTURER AND PROVIDING SUFFICIENT REFERENCE TO ESTABLISH QUALITY, SIZE AND CAPACITY. ALL WORKMANSHIP SHALL BE OF THE FINEST POSSIBLE BY EXPERIENCED MECHANICS OF THE PROPER TRADE. IN GENERAL, ALL MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE CONSIDERED ACCEPTABLE. ALL HOISTS, SCAFFOLDS, STAGING, RUNWAYS, TOOLS, MACHINERY AND EQUIPMENT REQUIRED FOR THE PERFORMANCE OF THE WORK SHALL BE FURNISHED BY THIS CONTRACTOR. MATERIAL AND EQUIPMENT SHALL BE STORED AND MAINTAINED IN CLEAN CONDITION AND PROTECTED FROM WEATHER, MOISTURE AND PHYSICAL DAMAGE.

20. THE CONTRACTOR SHALL PERSONALLY INSPECT THE SITE OF THE PROPOSED WORK DURING THE CUSTOMER'S BID WALK OR AS OTHERWISE ARRANGED WITH APPROPRIATE BUILDING/PROPERTY REPRESENTATIVES AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

21. DIRT AND REFUSE RESULTING FROM THE PERFORMANCE OF THE WORK SHALL BE REMOVED FROM THE PREMISES DAILY TO PREVENT ACCUMULATION. THE CONTRACTOR SHALL COOPERATE IN MAINTAINING REASONABLY CLEAN PREMISES AT ALL TIMES THROUGHOUT CONSTRUCTION. IMMEDIATELY PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL PERFORM A FINAL CLEANUP OF DIRT AND REFUSE RESULTING FROM THE WORK PERFORMED. THE CONTRACTOR SHALL CLEAN ALL MATERIAL AND EQUIPMENT INSTALLED UNDER THE CONTRACT. DIRT, DUST, PLASTER, STAINS AND ALL FOREIGN MATTER SHALL BE REMOVED FROM ALL SURFACES. DAMAGED FINISHES SHALL BE TOUCHED UP AND RESTORED TO THEIR ORIGINAL CONDITION.

22. THE DRAWINGS ARE SCHEMATIC IN NATURE, BUT SHOW THE VARIOUS COMPONENTS OF THE SYSTEMS APPROXIMATELY TO SCALE AND ATTEMPT TO INDICATE HOW THEY ARE TO BE INTEGRATED WITH OTHER PARTS OF THE BUILDING/STRUCTURE. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS. DETERMINE EXACT LOCATIONS BY FIELD MEASUREMENTS, CHECKING THE REQUIREMENTS OF OTHER TRADES AND BY REVIEWING ALL CONTRACT DOCUMENTS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS WHICH COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

GAS PIPING NOTES:

1. GAS PIPING SHALL BE DESIGNED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE LATEST REVISION AND IN ACCORDANCE WITH NFPA 54.

2. GAS PIPE SIZING SHALL BE BASED ON TABLE M-905.4.1(2) IN THE BOCA NATIONAL MECHANICAL CODE. A MAXIMUM PIPE LENGTH OF 200 FT. SHALL BE USED FOR THIS DESIGN.

3. GAS PIPING SHALL BE OF MATERIAL SPECIFIED ON PLANS WITH ALL INDUSTRY STANDARD FITTINGS. WHERE GAS PIPING CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE SUPPLY PIPE, A 100% SHUT-OFF GAS COCK AND A UNION.

4. GAS PIPING HANGERS AND SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF "STANDARD PRACTICE FOR PIPE HANGERS AND SUPPORTS - MATERIALS, DESIGN, MANUFACTURE, SELECTION, APPLICATION AND INSTALLATION" (ANSI/MSS SP-58-2009). ALL PIPE SHALL BE SUPPORTED IN A NEAT AND WORKMANLIKE MANNER.

5. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS OR RUNNING THREADS. NO GAS VALVES SHALL BE INSTALLED IN ABOVE CEILING OR BELOW GRADE LOCATIONS.

6. ALL GAS VENTS FROM PRESSURE RELIEF OR PRESSURE LIMITING DEVICES SHALL BE PIPED THE FULL OUTLET SIZE AND SHALL BE FITTED WITH AN AGA APPROVED FITTING WITH INSECT SCREEN. PROVIDE CAULKING OR PROPER FLASHING AT VENTS.

7. BRANCH OUTLET PIPES SHALL BE TAKEN FROM THE TOP OR SIDES OF THE HORIZONTAL LINES AND NOT THE BOTTOM.

8. USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.

9. INSPECT, TEST AND PURGE THE GAS PIPING SYSTEM IN ACCORDANCE TO NFPA 54 - PART 4 AND ALL LOCAL REQUIREMENTS. MINIMUM REQUIREMENTS SHALL BE 5 PSIG FOR A PERIOD OF 2 HOURS.

PLUMBING PROCEDURAL, PREPARATION AND TESTING NOTES:

1. DUE TO THE NATURE OF THIS SYSTEM AND OTHER SIMILAR SYSTEMS IN USE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE SYSTEMS AS SPECIFIED. SUBSTITUTIONS SHALL NOT BE CONSIDERED AT THIS TIME UNLESS DIRECTED BY OWNER.

2. ALL WORK WITHIN LIVE ELECTRICAL PANELS SHALL OCCUR DURING HOURS ACCEPTABLE TO THE PANEL OWNER.

3. THE CONTRACTOR SHALL PROVIDE TWO (2) DAYS ADVANCED NOTIFICATION OF ALL DELIVERIES TO THE SITE AND SEVEN (7) DAYS ADVANCED NOTIFICATION OF ANY REQUIRED SERVICE SHUT-DOWNS.

4. THE CONTRACTOR SHALL MAINTAIN INTERFACE WITH THE OWNER AND WITH ALL OF THEIR CONTRACTORS, VENDORS AND ENGINEERING FIRMS.

5. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING TO BE HELD AT THE JOB SITE OR IN THE AREA WHERE THE INSTALLATION WILL TAKE PLACE.

6. PRIOR TO THE START OF CONSTRUCTION, ALL WORKERS SHALL BE BRIEFED ON ALL SAFETY REQUIREMENTS PERTINENT TO THE WORKING ENVIRONMENT.

7. THE CONTRACTOR SHALL INSURE THE AVAILABILITY AND ACCESSIBILITY OF ADEQUATE ON-SITE FIRE EXTINGUISHERS, SAFETY EQUIPMENT BOARDS AND FIRST AID STATIONS.

8. ALL CONNECTIONS, TEST MEASUREMENTS AND ADJUSTMENTS SHALL BE DIRECTLY WITNESSED BY AN OWNER APPROVED PROJECT SUPERVISOR.

9. PRIOR TO THE START-UP OF THE SYSTEMS, THE CONTRACTOR SHALL CHECK ALL COMPONENTS AND DEVICES, LUBRICATE ITEMS ACCORDINGLY AND TIGHTEN ALL CONNECTIONS. AFTER ALL SYSTEMS HAVE BEEN INSPECTED AND ADJUSTED, CONFIRM ALL OPERATING FEATURES REQUIRED BY THE DRAWINGS AND SPECIFICATIONS AND MAKE FINAL ADJUSTMENTS AS NECESSARY.

10. APPROPRIATE FACTORY REPRESENTATIVES SHALL BE ON SITE TO COMMISSION THE SYSTEM.

11. CONTRACTOR SHALL INSPECT AND TEST ALL PIPING AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS AND EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

12. AUTHORIZED PERSONNEL SHALL CONDUCT CLEANING, PURGING AND TESTING PROCEDURES. TESTING OF PIPING SHALL UTILIZE HYDROSTATIC OR PNEUMATIC MEASURES. OXYGEN OR LP GAS IS NOT TO BE USED.

13. PURGE PIPING WITH INERT GAS PRIOR TO INTRODUCING LP GAS.

14. CONDUCT A FUNCTIONAL TEST OF ALL ISOLATION VALVES, EXCESS FLOW VALVES AND PRESSURE RELIEF VALVES.

15. CONTRACTOR SHALL SUBMIT TO THE OWNER THREE (3) COPIES EACH OF MATERIAL FOR MAINTENANCE AND OPERATION INSTRUCTION MANUALS APPROPRIATELY BOUND INTO MANUAL FORM INCLUDING APPROVED COPIES OF MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, MAINTENANCE INSTRUCTIONS, OPERATING INSTRUCTIONS AND PARTS LISTS (REVISED IF NECESSARY TO SHOW SYSTEM AND EQUIPMENT AS ACTUALLY INSTALLED). CONTRACTOR SHALL ALSO PROVIDE ADEQUATE VERBAL INSTRUCTIONS OF SYSTEM OPERATION AND RE-START TO OWNER'S REPRESENTATIVE AT THE CONCLUSION OF THE WORK.

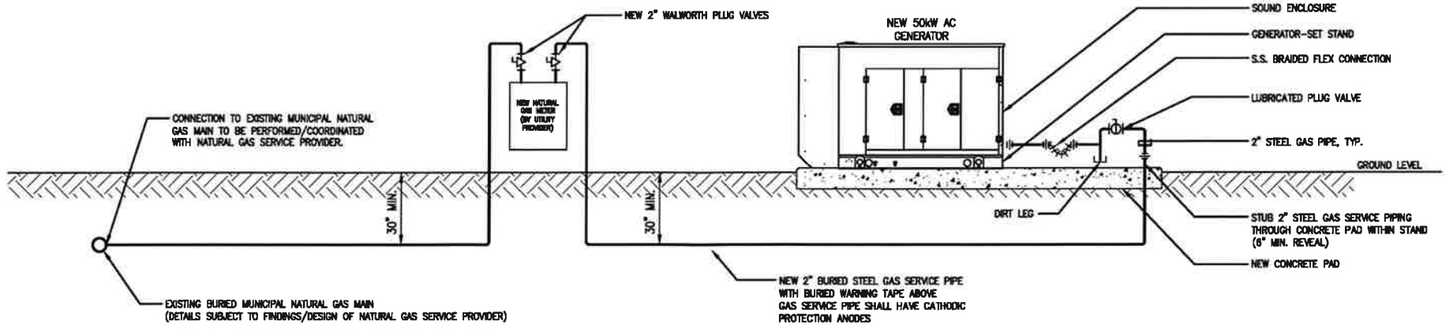
GENERATOR: GENERAC SG050NA (NATURAL GAS)
SUPPLIED BY VERIZON,
INSTALLED BY CONTRACTOR.

CONTRACTOR SHALL OBTAIN FULL SPECIFICATIONS FROM VERIZON WIRELESS PRIOR TO BID.

CONTRACTOR SHALL ARRANGE FOR GENERATOR START-UP SERVICES.

LEGEND

- PLUG VALVE
- UNION
- PIPE DROP
- PIPE RISE
- PUSH BUTTON SWITCH



NOTE:
ALL DETAILS SHOWN SCHEMATICALLY. THE CONTRACTOR SHALL COORDINATE WITH GAS SUPPLIER TO REVIEW ALL COMPONENTS AND PERFORM A PRESSURE TEST TO INSURE A COMPATIBLE FUEL DELIVERY ARRANGEMENT IS MADE TO THE GENERATOR. NATURAL GAS SUPPLIER SHALL ALSO REVIEW ALL SAFETY COMPONENTS TO INSURE THEY MEET THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

NATURAL GAS PIPING SCHEMATIC (1 / P01)
SCALE: NOT TO SCALE

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:
THESE DRAWINGS HAVE BEEN PREPARED IN ARCH D (24"x36") FORMAT. AS SUCH, THE WRITTEN SCALES SHOWN ON ANY REPRODUCTIONS OF A CONTRADICTORY SIZE SHALL BE IGNORED INVALID.
ALL BAR SCALES MAY BE USED REGARDLESS OF REPRODUCTION SIZE. WHERE IN CONFLICT, BAR SCALES SHALL SUPERSEDE WRITTEN SCALES.

REVISIONS

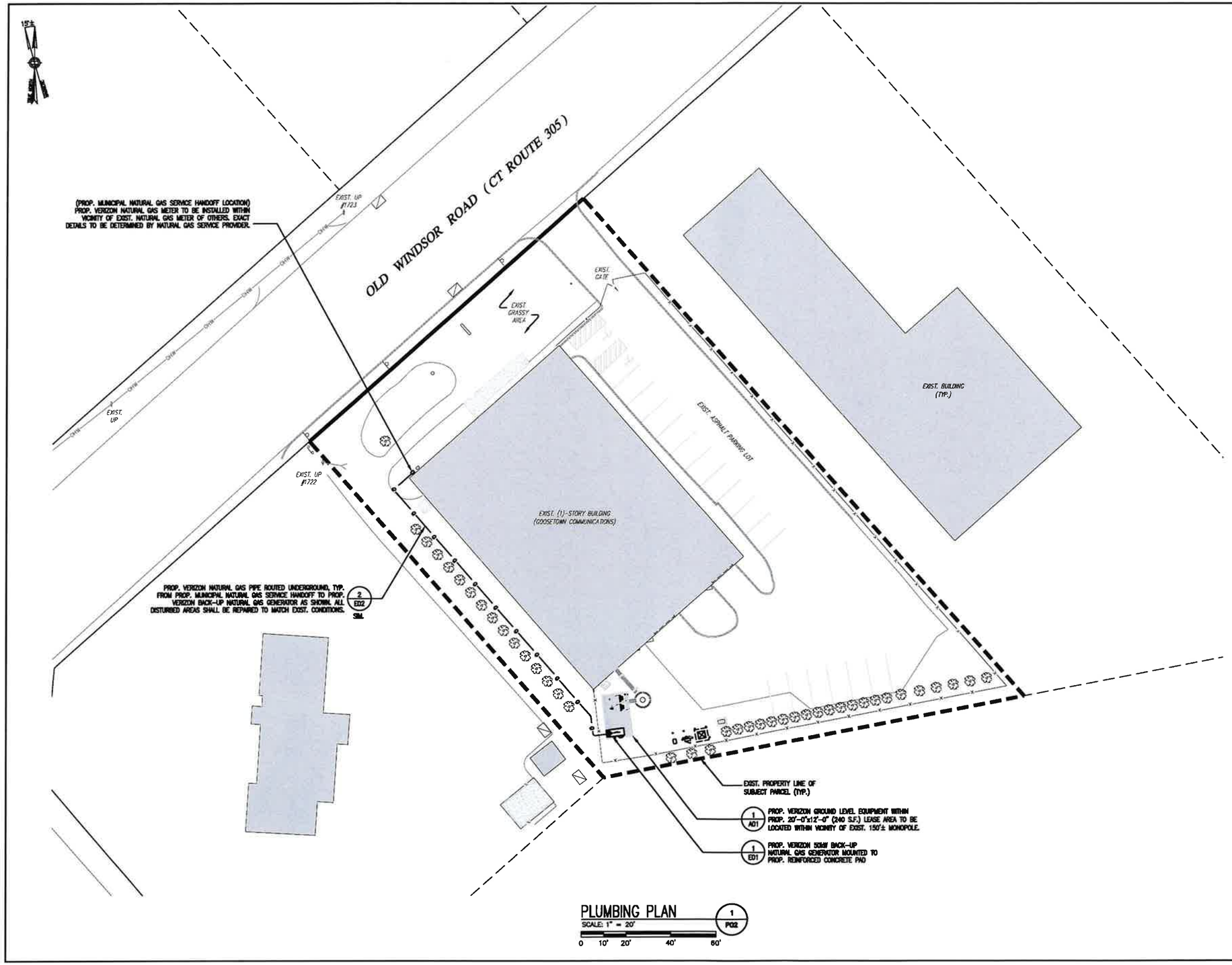
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
PLUMBING NOTES AND SCHEMATIC

DRAWING NO:
P01

SCALE: NOT TO SCALE	DESIGNED BY: MMC	VZW PROJECT NO.: 16433867
	DRAWN BY: MMC	
	CHECKED BY: GRS	VZW LOCATION CODE: 7939695
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



PLUMBING PLAN (1 / P02)
SCALE: 1" = 20'
0 10' 20' 40' 60'

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
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SEAL:

ENGINEER/LAND SURVEYOR DATE

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REVISIONS

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
SITE PLUMBING PLAN

DRAWING NO:
P02

SCALE: 1" = 20'	DESIGNED BY: MBC	VZW PROJECT NO.: 16433987
	DRAWN BY: MBC	
	CHECKED BY: CRS	VZW LOCATION CODE: 7838966
CEA PROJECT NO.: 96210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838

ELECTRICAL SPECIFICATIONS

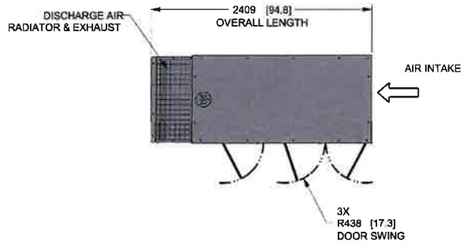
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO MAKE READY FOR USE THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS. MAKE ALL NECESSARY CONNECTIONS AT "PACKAGED" EQUIPMENT.
2. THE ELECTRICAL SYSTEMS SHALL BE SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. ALL MATERIAL AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THE WORK SHALL BE FURNISHED AT NO EXTRA COST.
3. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND NATIONAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   THE 2022 CONNECTICUT STATE BUILDING CODE
   THE NATIONAL ELECTRICAL CODE (NFPA-70)
   THE CONNECTICUT ELECTRIC CODE
   THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
   THE LIFE SAFETY CODE (NFPA 101)
   THE STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURE AND ANTENNAS (TIA/EIA-222-G)
4. MATERIALS AND EQUIPMENT SHALL BE NEW, UNUSED AND UNDERWRITERS' LABORATORIES, INC. LISTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS IN A TIMELY FASHION, INCLUDING RESPONSIBILITY FOR DETERMINING AVAILABILITY/LEAD TIME FOR ALL NECESSARY EQUIPMENT.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES FOR PERMITS AND INSPECTIONS. WHERE NEW COMMERCIAL POWER SERVICE IS PROVIDED TO THE SITE, OR EXISTING SERVICE MUST BE MODIFIED, CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE ELECTRIC UTILITY, SHALL PERFORM ALL OF HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY, AND SHALL PAY ALL UTILITY SERVICE BACK CHARGES.
6. ALL WIRING OUTSIDE SHALL BE INSTALLED IN HEAVY-GAUGE, (SCHEDULE 40) RIGID STEEL CONDUIT, HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE WITH AN ADDITIONAL FACTORY-APPLIED FINISH INSIDE AND OUTSIDE. CUT ENDS SHALL BE REAMED, THREADED AND COLD GALVANIZED. NO COMPRESSION FITTING WILL BE ACCEPTED.
7. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 AND INSTALLED NOT LESS THAN 30 INCHES BELOW FINISHED GRADE.
8. WIRING INSTALLED IN THE BUILDING THAT IS SHOWN TO BE IN CONDUIT SHALL BE INSTALLED IN EMT. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
9. LIQUID TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL MOTOR TERMINATIONS AND FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION. FLEXIBLE METAL CONDUIT SHALL CONSIST OF A FLEXIBLE, CORROSION RESISTANT METAL CORE WITH AN EXTRUDED, WATERTIGHT, SYNTHETIC JACKET. CONDUITS SMALLER THAN 1-1/2" SHALL HAVE A CONTINUOUS GROUND CONDUCTOR UNDER THE JACKET.
10. NO CONDUIT SMALLER THAN 3/4" ELECTRICAL TRADE SIZE SHALL BE USED, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS. BOX SIZES SHALL BE 4" SQUARE MINIMUM, BUT NOT LESS THAN THAT REQUIRED BY THE CONNECTICUT ELECTRICAL CODE.
11. FITTINGS AND EXPOSED SWITCH, OUTLET AND CONTROL STATION BOXES AND OTHER EXPOSED BOXES 4" SQUARE SHALL BE CAST OR MALLEABLE IRON WITH CADMIUM-ZINC FINISH AND CAST COVERS WITH STAINLESS STEEL SCREWS.
12. FLUSH SWITCH AND OUTLET BOXES SHALL BE HOT-DIPPED GALVANIZED, PRESSED STEEL WITH NYLON COVER PLATES, COLOR AS DETERMINED BY THE ENGINEER.
13. EXCEPT AS OTHERWISE SHOWN, TERMINAL, JUNCTION AND PULL BOXES LARGER THAT 4" SQUARE SHALL BE SHEET STEEL. STEEL BOXES SHALL BE HOT-DIPPED GALVANIZED. BOXES AND COVERS SHALL BE NOT LESS THAN 14 GAUGE METAL. COVERS SHALL BE GASKETED AND FASTENED WITH STAINLESS STEEL HARDWARE.
14. FITTINGS USED WITH LIQUID TIGHT, FLEXIBLE CONDUIT SHALL BE OF THE SCREW-IN, COMPRESSION TYPE WITH SEALING RING. FITTINGS LARGER THAN 1-1/4" SHALL BE FURNISHED WITH INTEGRAL GROUND LUGS.
15. HANGERS, RODS, BACK PLATES, BEAM CLAMPS, ETC. SHALL BE GALVANIZED IRON OR STEEL. CONDUITS SHALL BE SUPPORTED AT LEAST EVERY 5 FEET.
16. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS. CONDUIT RUNS SHALL BE STRAIGHT AND TRUE. CONDUIT SHALL BE SUPPORTED BY MEANS OF TWO-HOLE PIPE CLAMPS. BACK PLATES SHALL BE INSTALLED WHERE REQUIRED TO RAISE CONDUITS FROM THE SURFACE. MULTIPLE, HORIZONTAL RUNS SHALL BE SUPPORTED ON TRAPEZE HANGERS WITH STEEL HORIZONTAL MEMBERS AND THREADED RODS NOT LESS THAN 3/8 INCHES IN DIAMETER. HANGERS SHALL BE ATTACHED TO STRUCTURAL STEEL BY MEANS OF BEAM CLAMPS. SPOT TYPE INSERTS SHALL BE USED IN CONCRETE.
17. CONDUIT BENDS SHALL BE CAREFULLY MADE TO PREVENT DISTORTION OF THE CIRCULAR CROSS-SECTION. NO CONDUIT RUN SHALL HAVE MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN PULLING POINTS. CHANGES IN DIRECTION SHALL BE MADE WITH BENDS, STANDARD ELBOWS AND PULLBOXES. BENDS IN PARALLEL RUNS SHALL BE CONCENTRIC.
18. CONDUIT SHALL NOT BE SUPPORTED FROM PIPING, PIPING SUPPORTS, DUCTWORK, SUSPENDED CEILING SUPPORTS OR MECHANICAL EQUIPMENT SUBJECT TO VIBRATION OR REMOVAL.
19. THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY PLUGGED DURING BUILDING CONSTRUCTION UNTIL WIRES ARE TO BE PULLED. SPARE CONDUITS SHALL BE FURNISHED WITH THREADED CAPS.
20. CONDUITS SHALL BE TERMINATED AT UNGASKETED SHEET STEEL BOXES AND ENCLOSURES WITH DOUBLE LOCK NUTS AND SUITABLE BUSHINGS. BUSHINGS INSTALLED ON CONDUITS CONTAINING GROUND WIRES SHALL BE GROUNDING TYPE. CONDUITS SHALL BE TERMINATED AT GASKETED SHEET METAL BOXES AND ENCLOSURES WITH CONDUIT HUBS.
21. CONDUCTORS SHALL BE ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT-DRAWN COPPER. NO CONDUCTOR SMALLER THAT NO. 12 AWG SHALL BE USED, EXCEPT AS OTHERWISE NOTED.
22. WIRE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE 600 VOLT, TYPE THWN. WIRE FOR CONTROL CIRCUITS SHALL BE 600 VOLT, TYPE THWN, NO. 14 AWG, STRANDED. SERVICE CONDUCTORS AND FEEDERS SHALL BE TYPE XHHW. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID. NO. 8 AWG AND LARGER SHALL BE STRANDED..
23. ALL CONDUCTORS SHALL BE CAREFULLY HANDLED TO AVOID KINKS OR DAMAGE TO INSULATION. LUBRICATIONS SHALL BE USED TO FACILITATE WIRE PULLING. LUBRICANTS SHALL BE UL LISTED FOR USE WITH THE INSULATION SPECIFIED.
24. ALL EQUIPMENT AND MATERIALS SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE CONNECTICUT ELECTRICAL CODE, AND THE STANDARD REQUIREMENTS OF VERIZON WIRELESS AND LUCENT.
25. DISCONNECT SWITCHES SHALL BE 480 OR 240 VOLT, HEAVY-DUTY, QUICK-MAKE, QUICK BREAK, VISIBLE BLADE, 2 POLE WITH EXTERNAL OPERATING HANDLE AND FULL COVER INTERLOCK. SWITCHES INSTALLED OUTSIDE SHALL BE NEMA TYPE 3R ENCLOSED.
26. WALL SWITCHES SHALL BE SINGLE POLE 3-WAY OR 4-WAY, INDICATING, TOGGLE-ACTION, FLUSH, QUIET TYPE, SPECIFICATION GRADE, RATED 20 AMPERE, 120-277 VOLT. COLOR AS DETERMINED BY ENGINEER.
27. GENERAL PURPOSE RECEPTACLES SHALL BE DUPLEX, 2 POLE, 3 WIRE, STRAIGHT BLADE, NYLON FACE, GROUNDING TYPE, 20 AMPERE, 125 VOLT, SPECIFICATION GRADE. COLOR AS DETERMINED BY ENGINEER.
28. PANELS SHALL BE PER DIRECTED BY THESE DRAWINGS WITH TYPED DIRECTORIES.
29. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC TYPE WITH RMS SYMMETRICAL INTERRUPTING RATING OF NOT LESS THAN 22,000 AMPERE FOR 240 VOLT BREAKERS. ENCLOSED BREAKERS SHALL HAVE PADLOCKING PROVISIONS AND EXTERNAL OPERATING HANDLE WITH FULL COVER INTERLOCK. BREAKERS SHALL BE 1" MODULES MINIMUM.
30. NAMEPLATES SHALL BE PROVIDED FOR ALL EQUIPMENT INDICATING VOLTAGE, PHASE, USE AND SOURCE OF ORIGIN. DEVICES SHALL BE LABELED INDICATING VOLTAGE AND BRANCH CIRCUIT. BRANCH CONDUCTORS SHALL BE LABELED INDICATING BRANCH CIRCUIT. FEEDER CONDUCTORS SHALL INDICATE PHASE.
31. ALL EXTERIOR CONDUCTOR/LUG TERMINALS SHALL HAVE AN ANTIOXIDANT APPLIED.
32. ALL SPRING TYPE WIRE CONDUCTORS USED IN EXTERIOR BOXES SHALL BE SILICON FILLED.
33. ELECTRICAL CONTRACTOR SHALL AS PART OF HIS WORK INCLUDE ALL FITTINGS, SLEEVES AND MINOR CUTTING REQUIRED FOR HIS WORK, INCLUDING FIRES-STOPPING.
34. THE ELECTRICAL CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE HIS OWN, WHERE DIRECTED, STORAGE AND OFFICE SPACE.
35. FIVE COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
36. ELECTRICAL CONTRACTOR'S WORK SHALL INCLUDE ALL LABOR AND MATERIALS, SCAFFOLDING TOOL AND TRANSPORTATION NECESSARY FOR COMPLETE INSTALLATION.
37. ELECTRICAL CONTRACTOR TO FURNISH ENGINEER ONE SET OF MYLARS OF "AS BUILT" DRAWINGS.
38. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY POWER & LIGHTING AS REQ'D.

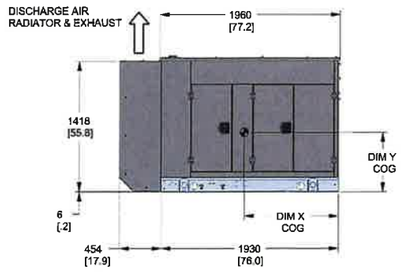
GENERAL NOTES

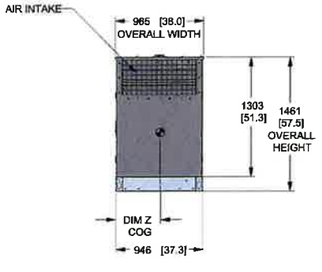
1. CONTRACTOR SHALL VISIT THE SITE TO BECOME AWARE OF THE EXISTING CONDITIONS.
2. BRANCH CIRCUIT RUNS 100 FT AND OVER SHALL BE #10 AWG CONDUCTORS.
3. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHT, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PLUMBING CONTRACTORS AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT, THE POWER WIRING, THE CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS REQUIRED BY THIS CONTRACTOR FOR COMPLETELY OPERATIVE HVAC AND PLUMBING SYSTEMS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. INTERRUPTIONS TO THE EXISTING ELECTRICAL SERVICE FOR SPLICING CONNECTIONS, RENOVATION OF EXISTING DISTRIBUTION, BRANCH CIRCUITS, INSTALLATION OF NEW ELECTRIC SERVICE, AND SHALL BE AS SHORT AS POSSIBLE, AND TO THE CONVENIENCE OF THE OWNER.
6. ALL CONDUIT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. NO INTERIOR HORIZONTAL CONDUIT BELOW 7'-6" AFF IN FINISHED SPACES.
7. ALL WIRING TO BE 3/4"C, 2#12 & 1#12 GROUND, UNLESS OTHERWISE NOTED.
8. NO BX OR ROMEX CABLE IS PERMITTED.
9. ALL WIRING DEVICES AND EQUIPMENT SHALL BE 20A SPECIFICATION GRADE AND UL LISTED.
10. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED.
11. ALL RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS.
12. ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE PVC SLEEVES.
13. ALL SWITCHES SHALL BE FORTY-EIGHT (48) INCHES AFF, UNLESS OTHERWISE NOTED.
14. ALL RECEPTACLES SHALL BE EIGHTEEN (18) INCHES AFF, UNLESS OTHERWISE NOTED.
15. ALL WIRING SHALL BE IN METAL RACEWAY & NO. 12 AWG COPPER MIN. UNLESS OTHERWISE NOTED.
16. WIRE COLOR SHALL BE PER STANDARD CODING BY PHASE.
17. FOR UTILITY BILLING, PLEASE SEND TO:
    VERIZON WIRELESS
    20 ALEXANDER DRIVE, 2nd FLOOR
    WALLINGFORD, CT 06492

GROUNDING GENERAL NOTES

1. ALL EXTERIOR CONDUCTORS SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. MINIMUM BEND RADIUS SHALL BE EIGHT (8) INCHES.
2. ALL CONNECTIONS TO HALO GROUND RING AND ALL CABLE TRAY JUMPERS SHALL BE #6 AWG, INSULATED, STRANDED, COPPER WIRE.
3. ALL WIRE-TO-WIRE CONNECTIONS SHALL BE THREE-CLAMP, C TAP COMPRESSION (T&B #54740 ORANGE OR EQUIVALENT). ALL GROUND BAR CONNECTIONS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS (T&B OR EQUIVALENT). ALL OTHER CONNECTIONS TO STEEL SURFACES SHALL USE LUG-TYPE CONNECTORS.
4. MECHANICALLY BOND ANTENNA MOUNTS WITH #2 AWG, BARE, STRANDED CONDUCTORS.
5. ALL GROUNDING WORK SHALL COMPLY WITH VERIZON WIRELESS STANDARDS.
6. CONNECT GROUND CONDUCTOR TO EXISTING GROUNDING SYSTEM. ATTACH TO WALLS, PARAPET, CABLE TRAY, ETC. WITH A CLAMPS AS NECESSARY. REMOVE PAINT, FIREPROOFING, MILL SCALE, ETC. TO ACHIEVE GOOD CAD WELD GROUND CONNECTION.
7. CONNECT TO HALO GROUND USING C-TAP (#54730).
8. CONNECT TO ENCLOSURES USING BLUE GROUND LUGS.







GENERAC 50kW NATURAL GAS GENERATOR (PART #SG050NA)
OVERALL GENERATOR (ENCLOSURE) APPROXIMATE
DIMENSIONS: 94.8"L x 38.0"W x 57.5"H
APPROXIMATE MAX. IN-SERVICE WEIGHT: 2,697 lbs

GENERATOR DETAIL (1 / ED1)
SCALE: NONE

LEGEND

ELECTRICAL SYMBOLS

- (M) METER
- GROUND ROD/TEST (OBSERVATION) WELL
- GROUND ROD
- CADWELD TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- GROUNDING WIRE
- (1 / E02) REPRESENTS DETAIL NUMBER
- 1'X4' SURFACE MTD. FLUORESCENT LIGHTING FIXTURE
- SELF CONTAINED EMERG. LIGHTING UNIT
- S 20A-120V-1P TOGGLE SWITCH
- MAGNETIC DOOR SWITCH (DOOR JAMB TYPE)
- 20A-120V QUADRAPLEX RECEPTACLE, GROUNDING TYPE, 2-CKT. NO.
- WP/GFI 20A-120V DUPLEX RECEPTACLE, GROUNDING TYPE. WP = WEATHERPROOF GFI = GROUND FAULT
- TL SIMPLEX RECEPTACLE, GROUNDING TYPE. TL = TWIST LOCK
- JUNCTION BOX
- PANELBOARD 'P1'
- * MOTOR - NUMERAL DENOTES HORSEPOWER
- WEATHER PROOF DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH - '3R' & '1' - NEMA ENCLOSURE
- * THERMOSTAT *T_H - HI TEMPERATURE ALARM THERMOSTAT
- * HUMIDISTAT *$H_{H/O}$ - HI/LO HUMIDITY ALARM HUMIDISTAT
- COMBINATION SMOKE/HEAT DETECTOR WITH MINI HORN SIMPLEX CAT.#2098-9696 WITH FORM A & C CONTACTS
- P1-2 HOMERUN TO PANEL (FURNISH & INSTALLED BY MECHANICAL)
- SURGE ARRESTOR - JOSLYN CAT. NO. 1455-85
- AFF ABOVE FINISHED FLOOR
- * MOTORIZED DAMPER
- 3#12-3/4"C EXPOSED CONDUIT 2#12-3/4"C.
- TC ALARM TERMINAL CABINET

* EQUIPMENT FURNISHED AND INSTALLED BY OTHERS AND WIRED BY THIS CONTRACTOR

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
GPS	GLOBAL POSITIONING SYSTEM
PCS	PERSONAL COMMUNICATION SYSTEM
RWY	RACEWAY
TYP.	TYPICAL
RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING
DWG	DRAWING
EMT	INTERIOR GROUND RING (HALO)
GEN	GENERATOR
GR	GROWTH
CGBE	COAX GROUND BAR EXTERNAL
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER GROUND BAR
PVC	RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
EBH	ETHERNET BACK HAUL

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:
STATE OF CONNECTICUT · ROBERT J. CHAPPELL · 21478 · REGISTERED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:
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REVISIONS

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0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
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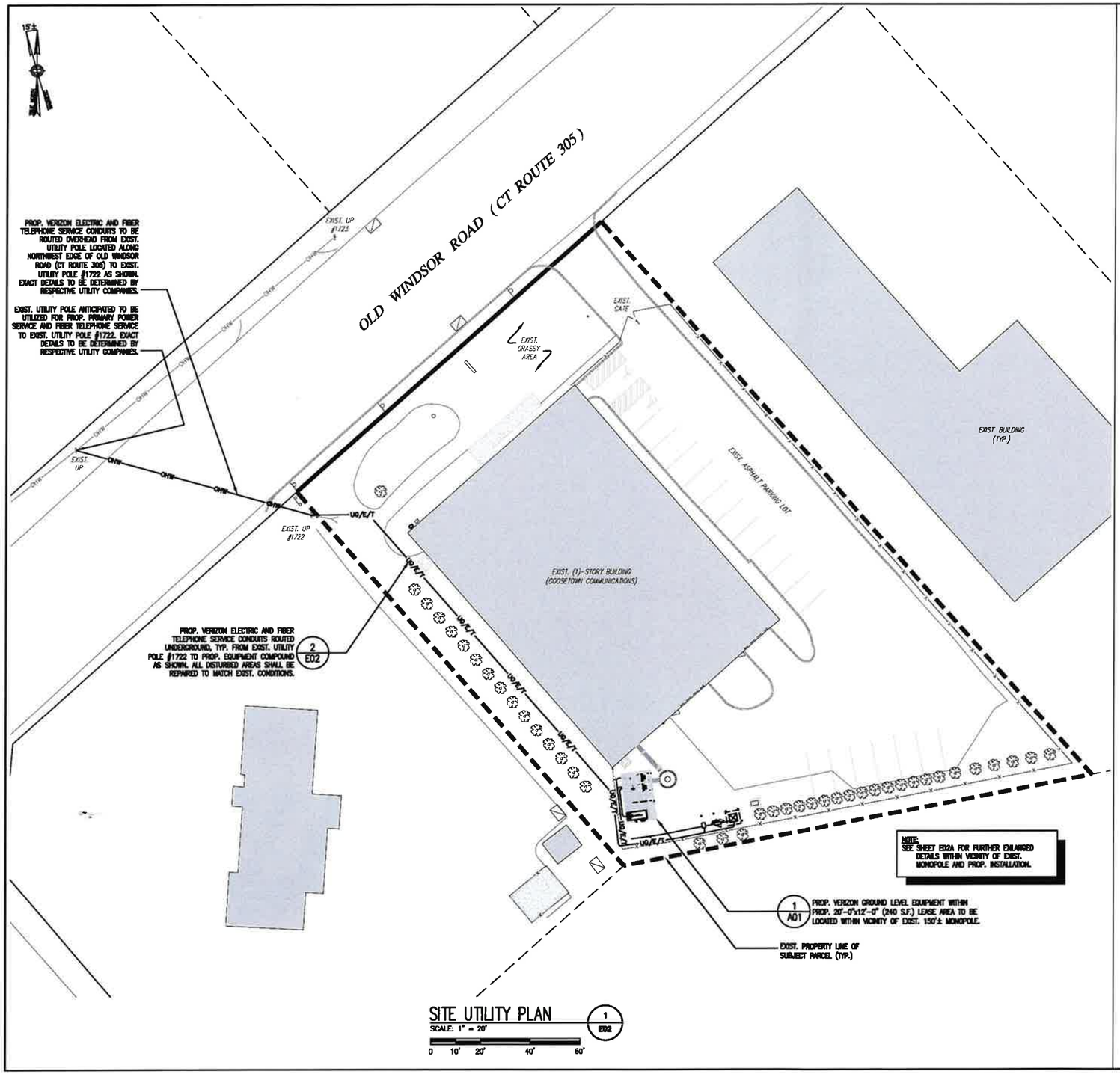
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

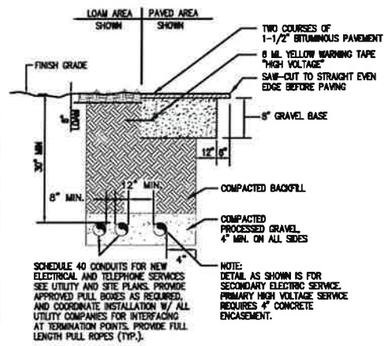
DRAWING TITLE:
ELECTRICAL SPECIFICATIONS AND NOTES

DRAWING NO:
E01

SCALE: AS SHOWN	DESIGNED BY: MMC	VZW PROJECT NO.: 16433887
	DRAWN BY: MMC	
	CHECKED BY: GRS	VZW LOCATION CODE: 7838566
CEA PROJECT NO.: 96210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



SITE UTILITY PLAN
SCALE: 1" = 20'
1 E02
0 10' 20' 40' 60'



TYPICAL BURIED CONDUIT DETAIL
SCALE: NONE
2 E02

CLIENT:
verizon

ARCHITECT/ENGINEER:
CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil Structural Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
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MARLBOROUGH, MA 01752
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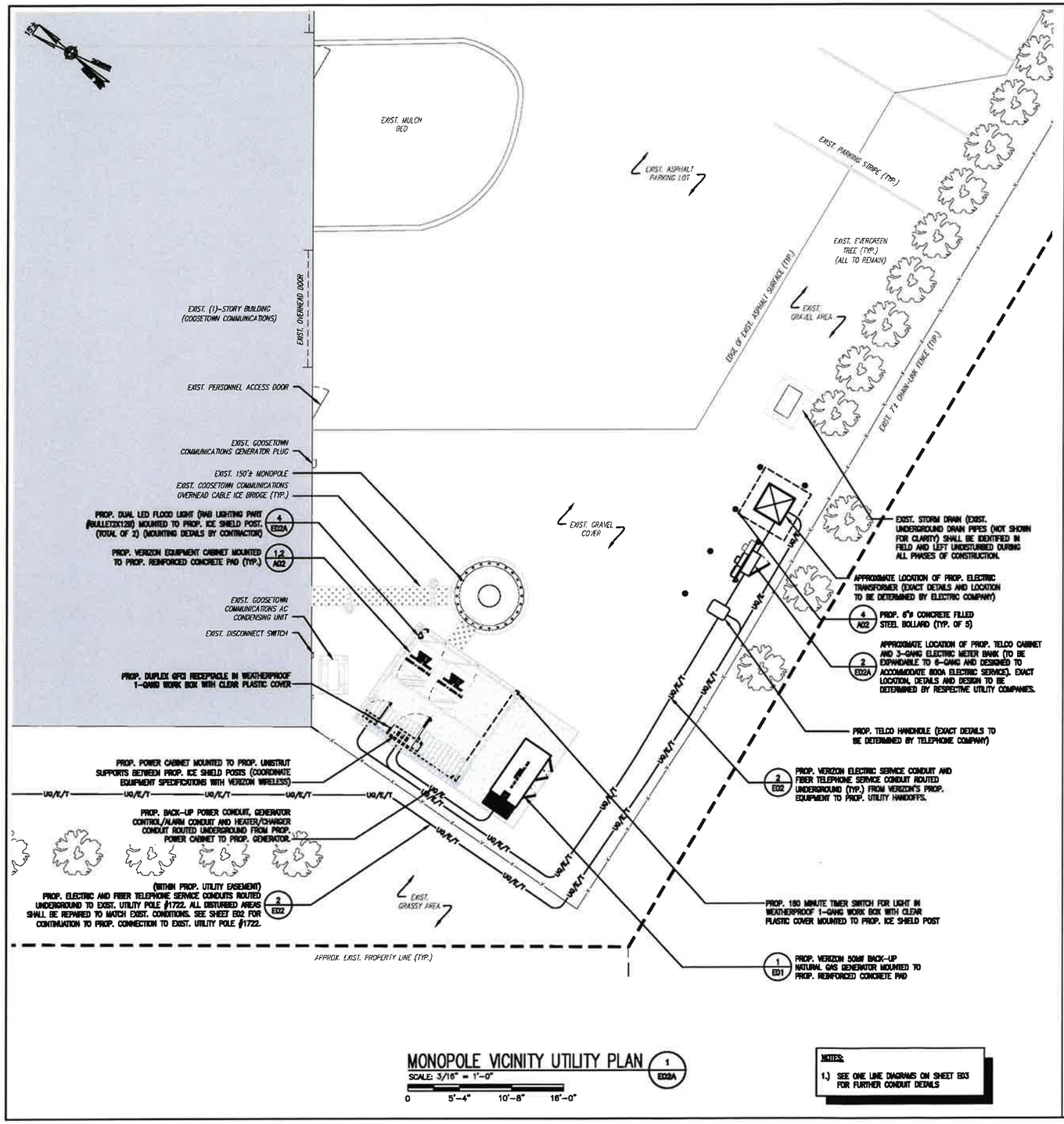
PROJECT NAME:
BLOOMFIELD 5 CT
7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:
SITE UTILITY PLAN & DETAILS

DRAWING NO:
E02

SCALE: AS NOTED	DESIGNED BY: MWC	VZW PROJECT NO.: 16433687
	DRAWN BY: MWC	
	CHECKED BY: CRS	VZW LOCATION CODE: 7838998
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



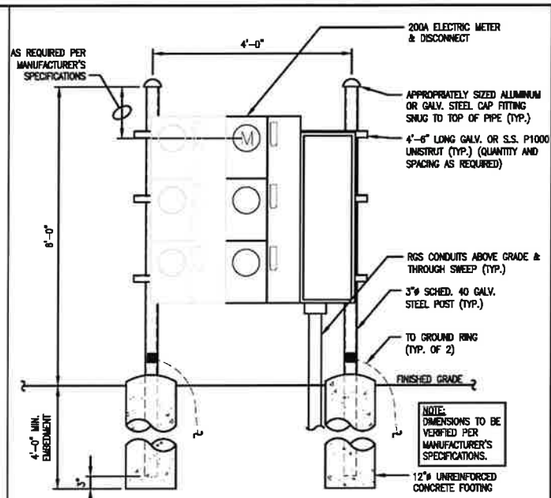
MONOPOLE VICINITY UTILITY PLAN 1 E02A

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

NOTES:

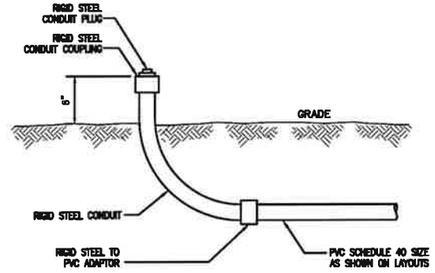
1.) SEE ONE LINE DIAGRAMS ON SHEET E03 FOR FURTHER CONDUIT DETAILS



ELECTRIC METER UNISTRUT RACK 2 E02A

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

0 1'-4" 2'-8" 4'-0"



TYPICAL CONDUIT STUB-UP DETAIL 3 E02A

SCALE: NONE

RAB LIGHTING - BULLET2X12B
24W
BLACK

MOUNT PER MANUFACTURER'S SPECIFICATIONS

TYPICAL LED FLOOD LIGHT DETAIL 4 E02A

SCALE: N.T.S.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

Civil, Structural, Land Surveying

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	3/28/23
1	REVISED TSA REFERENCE DATE	4/11/23
2	ISSUED FOR CONSTRUCTION (FINAL)	4/14/23
3	REVISED PER (7/28/23) RFDS	8/31/23
4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

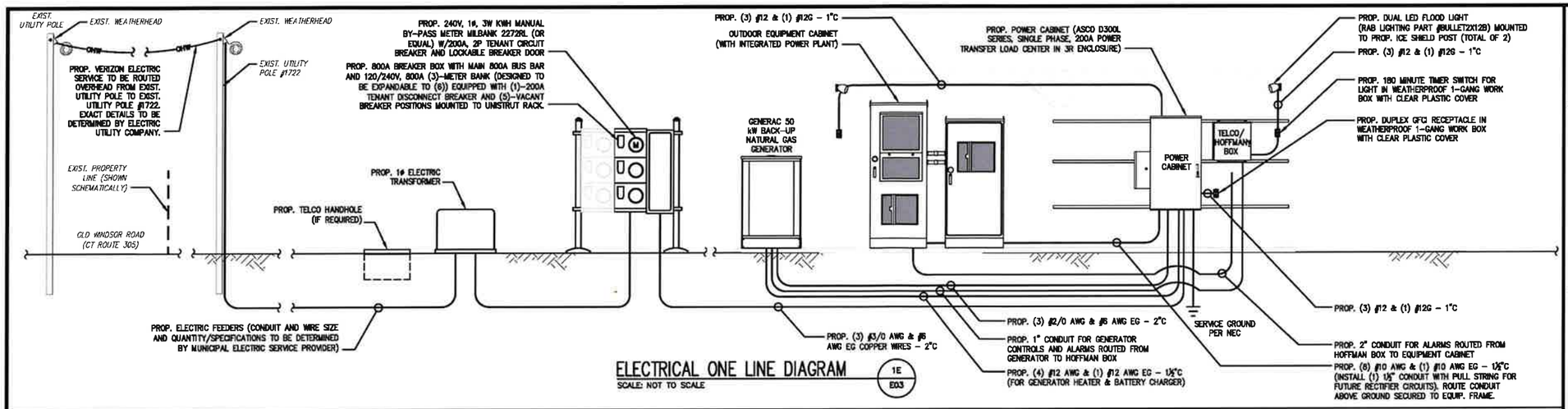
DRAWING TITLE:

MONOPOLE VICINITY UTILITY PLAN & DETAILS

DRAWING NO:

E02A

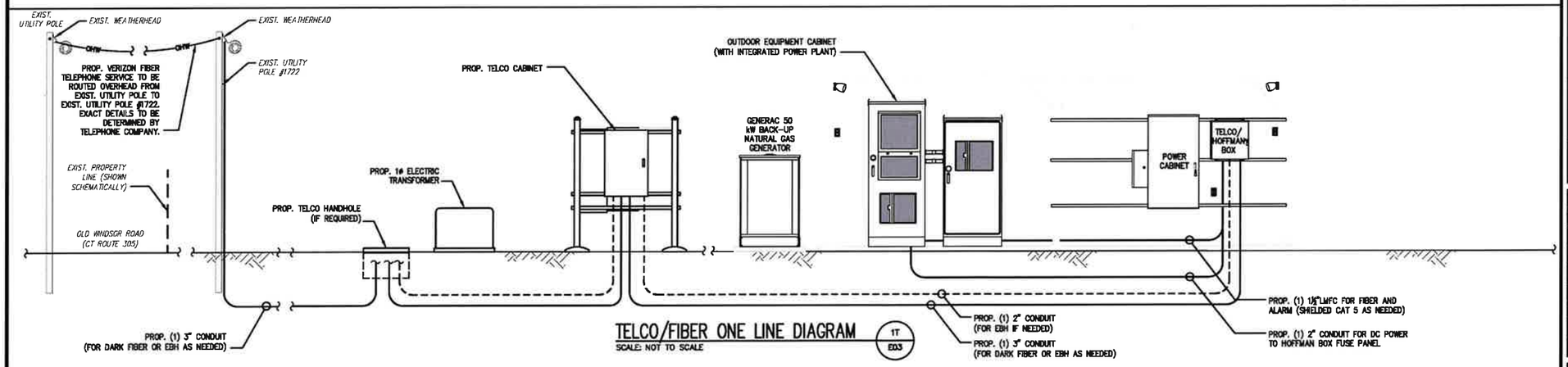
SCALE: AS SHOWN	DESIGNED BY: MWC	VZW PROJECT NO.: 15433987
	DRAWN BY: MWC	
	CHECKED BY: CMS	VZW LOCATION CODE: 783868
CEA PROJECT NO.: 98210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



ELECTRICAL ONE LINE DIAGRAM

SCALE: NOT TO SCALE

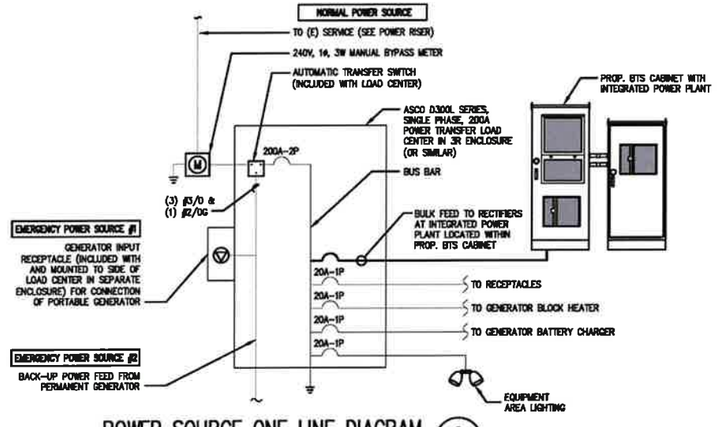
1E / E03



TELCO/FIBER ONE LINE DIAGRAM

SCALE: NOT TO SCALE

1T / E03



POWER SOURCE ONE LINE DIAGRAM

SCALE: NOT TO SCALE

2 / E03

ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE

ELECTRICAL PANEL SCHEDULE

65,000 A.I.C. NEMA 3R

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	RECTIFIER #1	30	30	FUTURE RECTIFIER	2
3					4
5	RECTIFIER #2	30	30	FUTURE RECTIFIER	6
7					8
9	RECTIFIER #3	30	20	PAD LIGHTING	10
11			–	BLANK	12
13	RECTIFIER #4	30	–	BLANK	14
15			–	BLANK	16
17	GFCI RECEPTACLE/LIGHT	20	–	BLANK	18
19	GENERATOR BLOCK HEATER	20	–	BLANK	20
21	GENERATOR BATTERY CHARGER	20	–	BLANK	22
23	BLANK	–	–	BLANK	24
25	BLANK	–	–	BLANK	26
27	BLANK	–	–	BLANK	28
29	BLANK	–	–	BLANK	30

ELECTRICAL PANEL SCHEDULE

SCALE: NTS

3 / E03

ONE-LINE DIAGRAM NOTES:

1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS INSIDE AND OUT.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

3) ALL CONDUIT ROUTING SHOWN ON THESE DIAGRAMS IS SCHEMATIC IN NATURE AND INTENDED TO CONVEY GENERAL INTENT ONLY.

4) ALL PROPOSED UTILITY DESIGN ELEMENTS SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN TO BE PROVIDED BY UTILITY PROVIDERS AND VERIZON WIRELESS. CONTRACTOR SHALL OBTAIN A COPY OF THE FINAL UTILITY DESIGN BY UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK.

UTILITY CONTACTS

ELECTRICAL: EVERSOURCE ENERGY
247 STATION DRIVE, SE 210
WESTWOOD, MA 02090
(781) 441-3610

TELEPHONE: VERIZON
185 FRANKLIN STREET
BOSTON, MA 02107
(800) 941-8900

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil, Structural, Land Surveying

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

STATE OF CONNECTICUT — 29478 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

DRAWING SCALE NOTE:

THESE DRAWINGS HAVE BEEN PREPARED IN ARCH D (24"x36") FORMAT. AS SUCH, THE WRITTEN SCALES SHOWN ON ANY REPRODUCTIONS OF A CONTRADICTORY SIZE SHALL BE IGNORED INVALID. ALL BAR SCALES MAY BE USED REGARDLESS OF REPRODUCTION SIZE. WHERE IN CONFLICT, BAR SCALES SHALL SUPERSEDE WRITTEN SCALES.

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

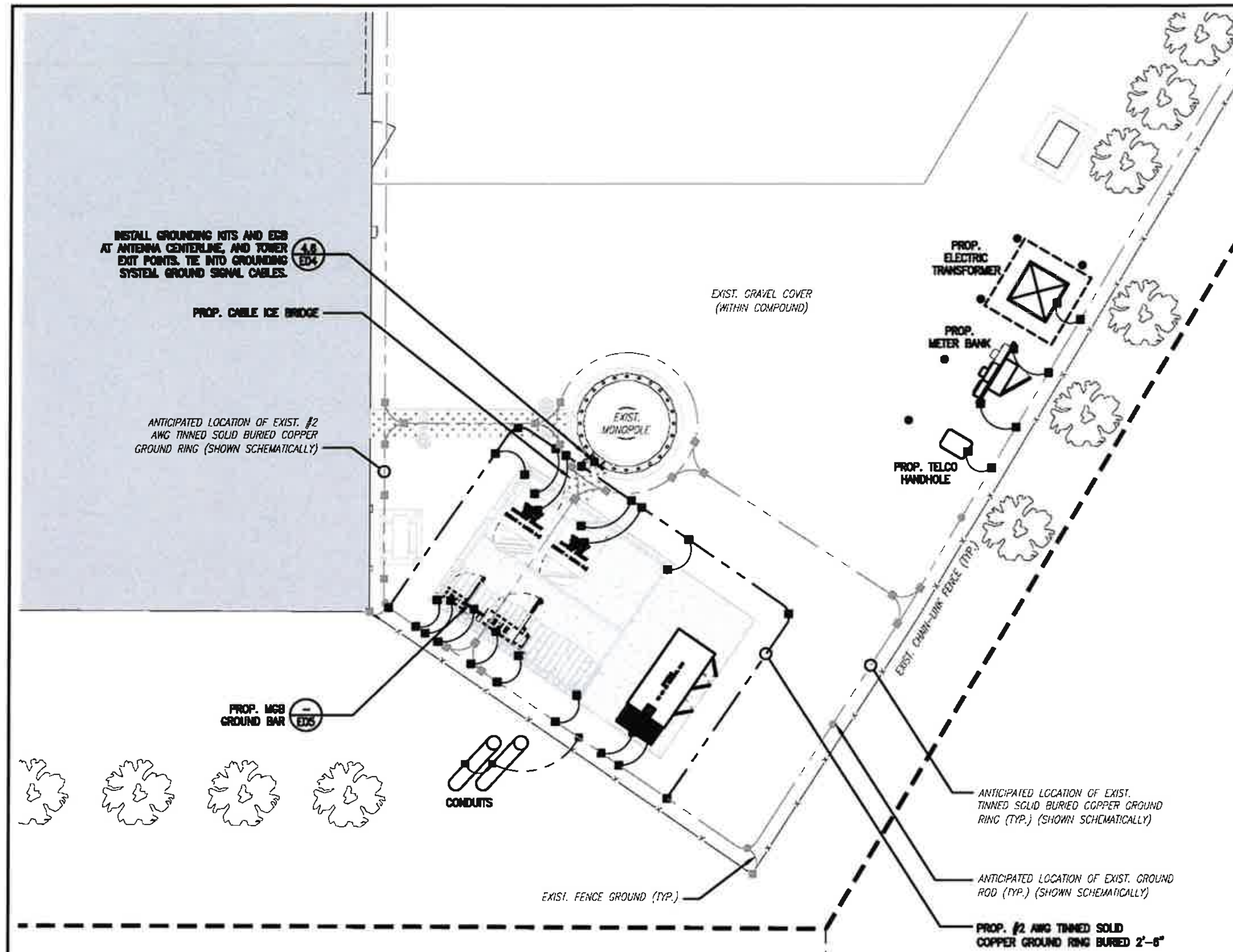
DRAWING TITLE:

ELECTRICAL DIAGRAMS & DETAILS

DRAWING NO:

E03

SCALE: AS SHOWN	DESIGNED BY: MBC DRAWN BY: MBC CHECKED BY: CMS	VZW PROJECT NO.: 18433987 VZW LOCATION CODE: 7838966
CEA PROJECT NO.: 96210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920836



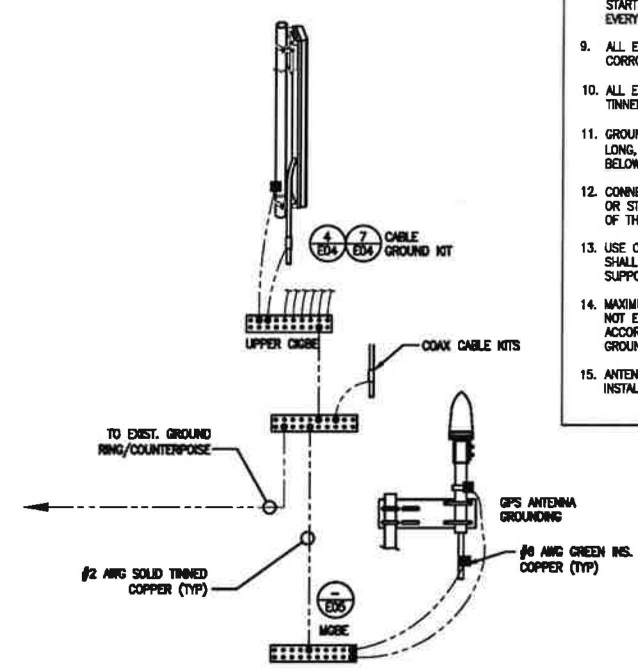
SCHEMATIC GROUNDING PLAN (1 / E04)

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

GROUNDING LEGEND

- ■ EXOTHERMIC GROUND
- • GROUND ROD
- ⊙ TEST WELL
- PROP. #2 AWG EQUIPMENT GROUNDING
- PROP. GROUND HALO
- EXIST. SITE GROUNDING (SHOWN SCHEMATICALLY)



ANTENNA GROUNDING RISER DIAGRAM (2 / E04)

SCALE: NOT TO SCALE

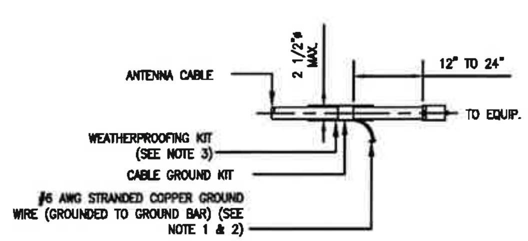
ELECTRICAL AND GROUNDING NOTES:

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1ø, 60 Hz.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

GROUNDING

5. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
12. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
15. ANTENNA GROUND KITS SHALL BE FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.



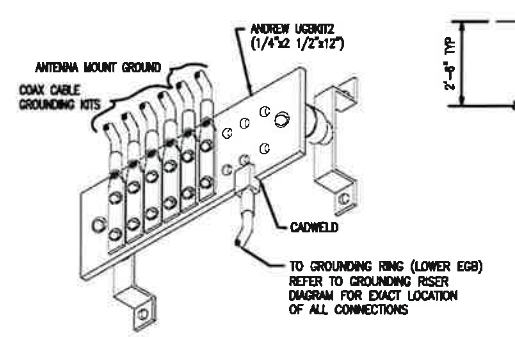
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

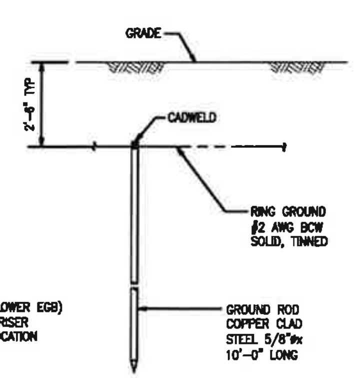
DETAIL (3 / E04)

SCALE: NOT TO SCALE



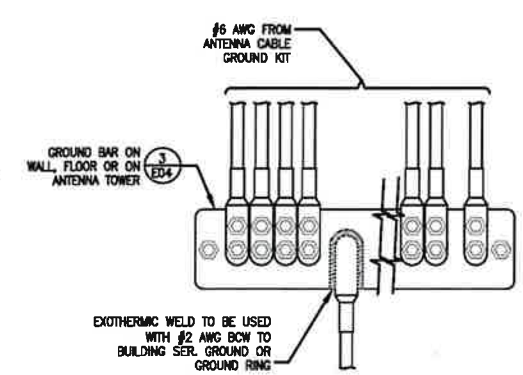
GROUND BAR (EGB) (4 / E04)

SCALE: NOT TO SCALE



GROUND ROD (5 / E04)

SCALE: NOT TO SCALE

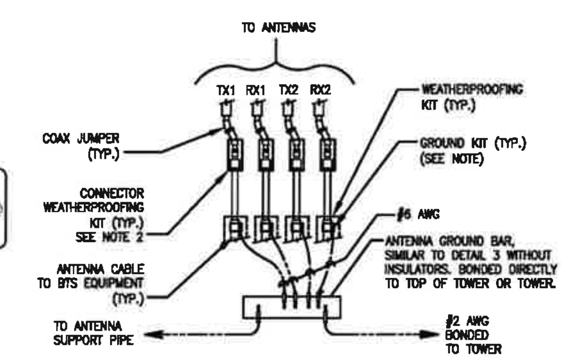


*- GROUND BARS AT THE BOTTOM OF TOWERS/TOWERS SHALL ONLY USE EXOTHERMIC WELDS.

INSTALLATION OF GROUND WIRE TO GROUND BAR

DETAIL (6 / E04)

SCALE: NOT TO SCALE



CONNECTION OF GROUND WIRE TO GROUNDING BAR, TOWER

DETAIL (7 / E04)

SCALE: NOT TO SCALE

CLIENT: verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil·Structural·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SEAL:

ENGINEER/LAND SURVEYOR DATE

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

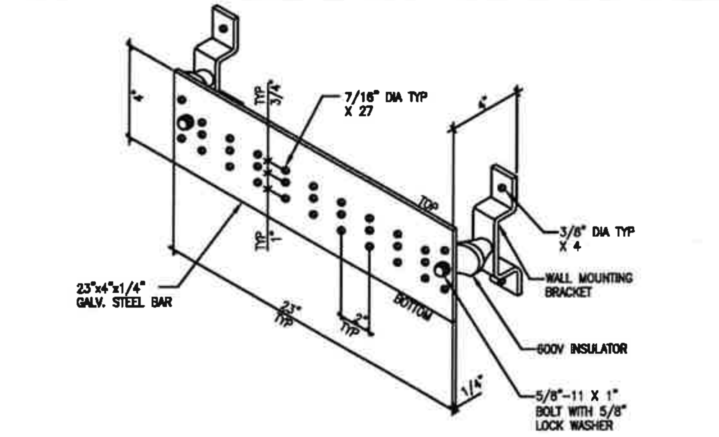
DRAWING TITLE:

SCHEMATIC GROUNDING PLAN & DETAILS

DRAWING NO:

E04

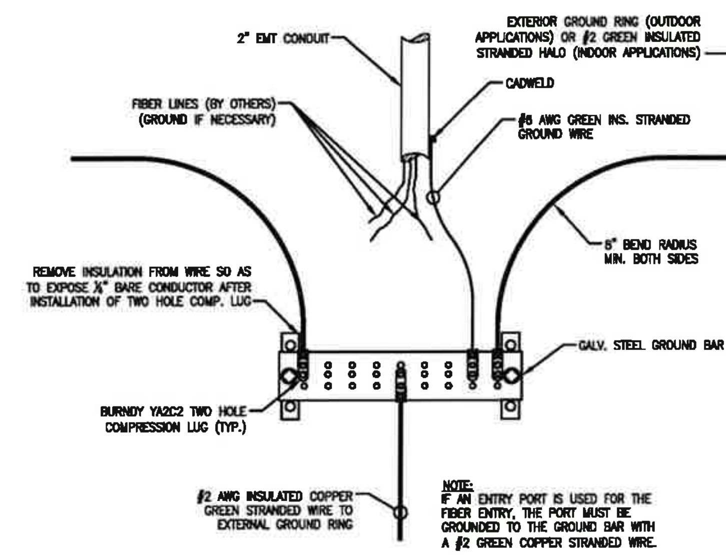
SCALE: AS SHOWN	DESIGNED BY: MWC	VZW PROJECT NO.: 16433987
	DRAWN BY: MWC	
	CHECKED BY: GRS	VZW LOCATION CODE: 783866
CEA PROJECT NO.: 96210.413	ORIGINAL ISSUE DATE: 3/28/23	MDG LOCATION ID: 5000920838



1. SURFACE PREPERATION: ALL CONNECTIONS MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE MADE BARE TO ENSURE PROPER CONTACT. NO WASHERS SHALL BE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS SHALL HAVE AN ANTI-OXIDANT AGENT APPLIED PRIOR TO INSTALLATION.
2. BUSS PREPERATION: ALL GALV. STEEL BUSSES SHALL BE CLEANED, POLISHED AND AN ANTI-OXIDANT APPLIED. NO FINGERPRINTS OR DISCOLORED STEEL WILL BE PERMITTED.
3. TERMINATIONS: ALL EQUIPMENT TERMINATIONS SHALL BE MADE WITH A BURNDY TWO HOLE COMPRESSION LUG WITH 10-24x3/4" LONG S.S. SCREWS, NUTS AND LOCK WASHERS. ALL BUSS TERMINATIONS SHALL BE MADE WITH A CAD-WELD OR BURNDY YC2C2 2 HOLE COMPRESSION LUG OR EQUAL. ALL INTERIOR HALO ATTACHMENTS SHALL BE MADE USING A BURNDY YC2C2 COMPRESSION LUG.

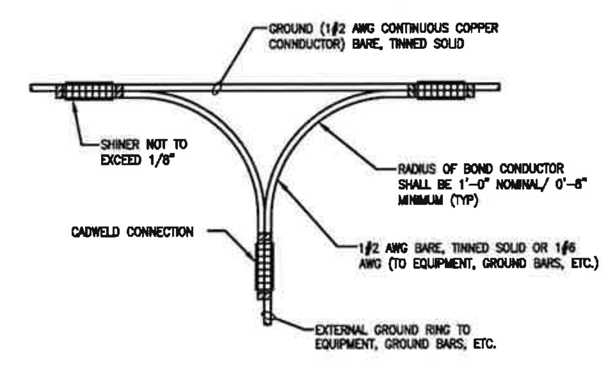
TYP. INTERIOR & EXTERIOR GROUND BAR

SCALE: N.T.S.



INTERIOR GROUNDING AT TELCO ENTRY

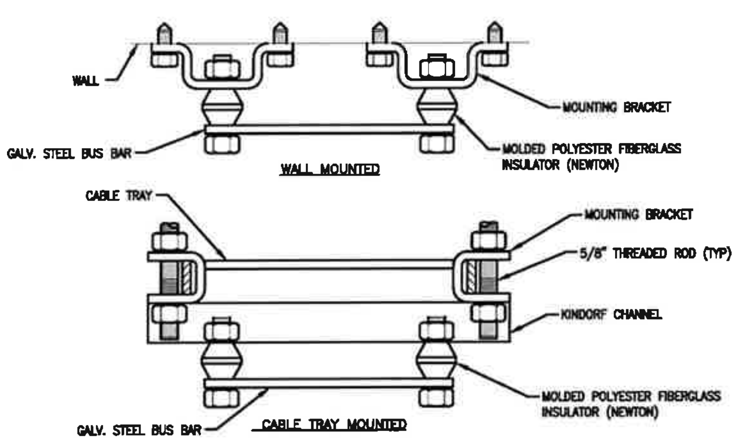
SCALE: N.T.S.



NOTE: ALL CONNECTION TO GROUND SHALL BE NON-DIRECTIONAL

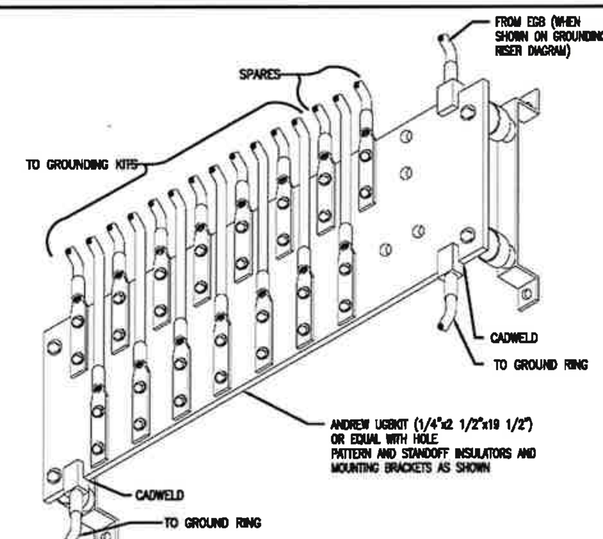
NON-DIRECTIONAL SPLICE

SCALE: N.T.S.



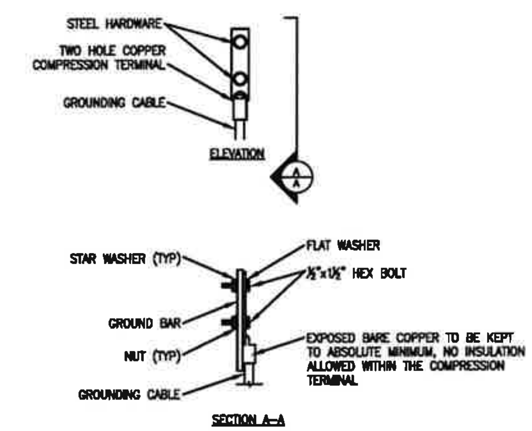
BUS BAR MOUNTING

SCALE: N.T.S.



MASTER GROUND BAR (MGB)

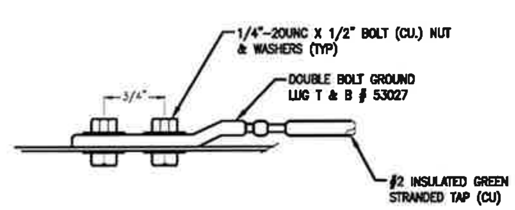
SCALE: NOT TO SCALE



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

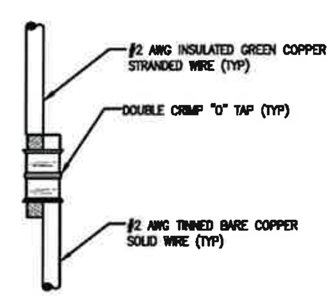
TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



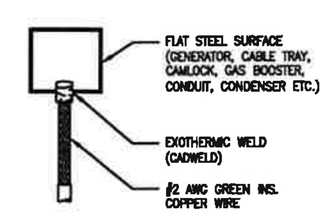
TYPICAL EQUIPMENT GROUND CONNECTION

SCALE: N.T.S.



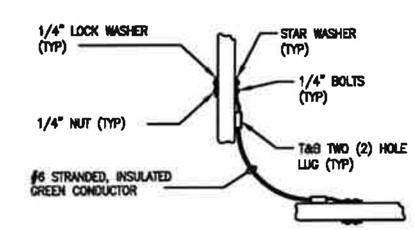
TYPICAL GROUND CONNECTION SPLICE DETAIL

SCALE: N.T.S.



TYP. CADWELD #2 GREEN TO FLAT STEEL SURFACE

SCALE: NOT TO SCALE



CABLE TRAY GROUNDING

SCALE: N.T.S.

CLIENT:

verizon

ARCHITECT/ENGINEER:

CHAPPELL ENGINEERING ASSOCIATES, LLC

Civil Structural Land Surveying

R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST
SUITE 101
MARLBOROUGH, MA 01752
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SEAL:

ENGINEER/LAND SURVEYOR DATE

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4	REVISED PER VZW RF COMMENTS	9/13/23

PROJECT NAME:

BLOOMFIELD 5 CT

7A OLD WINDSOR ROAD
BLOOMFIELD, CT 06002

DRAWING TITLE:

GROUNDING DETAILS

DRAWING NO:

E05

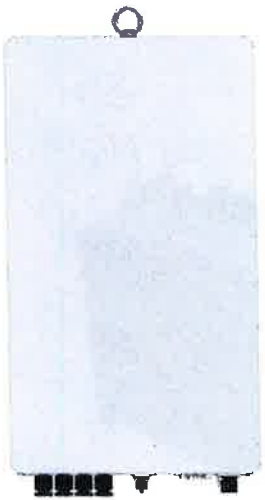
SCALE: AS SHOWN	DESIGNED BY: NMC	VZW PROJECT NO.: 16433987
	DRAWN BY: NMC	VZW LOCATION CODE: 783866
CEA PROJECT NO.: 96210.413	CHECKED BY: GRS	MDG LOCATION ID: 5000920838
	ORIGINAL ISSUE DATE: 3/28/23	

C-band 64T64R

SAMSUNG

Gen 2

Gen 2 : Higher conducted power radio with reduced size/volume/weight vs Gen 1 and also SOC embedded for flexibility to support new features



※ Preliminary Design: External appearance and mechanical design can be subject to change

Gen 2. 64T64R C-band MMU Dimensions	
Size (WxHxD)	**400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)**
Weight	**26kg (57.3 lb)**

Item	Gen 2 64T64R (MT6413-77A)
Air Technology	NR n77/TDD
Frequency	3700 – 3980 MHz
IBW	200 MHz
OBW	200 MHz
Carrier Bandwidth	20(HW ready)/40/60/80/100 MHz
# of Carriers	2 carriers
Layer	DL : 16L, UL : 16RX (8L)
RF Chain	64T64R
Antenna Configuration	4V16H with 192 AE
EIRP	80.5 dBm @320W (55 dBm + 25.5 dBi)
Conductive Power	320W
Spectrum Analyzer	TX/RX support
RX Sensitivity	Typical -97.8dBm @(1Rx, 18.36MHz with 30kHz,51RBs)
Modulation	DL 256QAM support, (DL 1024QAM with 1~2dB power back-off)
Function Split	DL/UL option 7-2x
Input Power	-48 VDC (-38 VDC to -57 VDC)
Power Consumption	1,287W (100% load, room temp.)
Size (WHD)	**400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)**
Volume	**41.1L**
Weight	**26kg (57.3 lb)**
Operating Temperature	-40°C ~ 55°C (w/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 38.104 FCC 47 CFR 27.53 : < -13dBm/MHz < -40 dBm/MHz @ above 4 GHz <-50 dBm /MHz @ 4,040 ~ 4,050 MHz, <-60 dBm /MHz @ above 4,050 MHz
Optic Interface	15km, 4 ports (25Gbps x 4), SFP28, single mode, Bi-di (Option: Duplex)
Mounting Options	Pole, wall
NB-IoT	Not support
External Alarm	4RX
Fronthaul Interface	eCPRI

700/850 4T4R Macro 320W ORU - New Filter (RF4461d-13A)

SAMSUNG

Specifications

Item	Specification	
Air Interface	LTE, NR(HW resource ready)	
Band	Band13 (700MHz)	Band5 (850MHz)
Frequency	DL: 746~756MHz UL: 777~787MHz	DL: 869~894MHz UL: 824~849MHz
IBW	10MHz	25MHz
OBW	10MHz	25MHz
Carrier Bandwidth	LTE/NR 5*/10MHz	LTE 5/10MHz NR 5/10/15/20MHz
# of carriers	2C*	3C
Total # of carriers	4C + B13 (SDL) 1C	
RF Chain	4T4R/2T4R/2T2R/1T2R 2T2R+2T2R bi-sector	
RF Output Power	Total : 320W 4 x 40W or 2 x 60W	4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support	
RX Sensitivity	Typ. -104.5dBm @1Rx (25RBs 5MHz)	
Modulation	256QAM support, (1024QAM with 1~2dB power back-off)	
Input Power	-48VDC (-38VDC to -57VDC)	
Power Consumption	1,165 Watt @ 100% RF load, room temperature	
Size (WHD)	380 x 380 x 260 mm (14.96 x 14.96 x 10.23 inch)	
Volume	37.5 L	
Weight (W/o Solar Shield & finger guard)	35.9 kg (79.1 lb)	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104 FCC 47 CFR 27.53 c), f) -	3GPP 36.104 FCC 47 CFR 22.917 -69 dBm/100 kHz per path @ 896 ~901MHz
CPRI Cascade	Not supported	
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP+, single mode, Duplex (Option: Bi-di)	
RET & TMA Interface	AISG 3.0	
Bias-T	4 ports (2 ports per band)	
Mounting Options	Pole, wall	
NB-IoT	2GB+2IB or 4IB	2SA+2GB or 2GB+2IB or 4GB
PIM Cancellation	Support	
# of antenna port	4	
External Alarm	4	
Fronthaul Interface	Opt. 8 CPRI / Opt. 7-2x selectable (not simultaneous support)	
CPRI compression	Not Support	

* 5MHz supporting in B13(700MHz) depends on 3GPP std. and UE capability. External filters in interferer and victim sides for Mexican boarder to support 5MHz service need to be considered
** Finger guard is not needed.

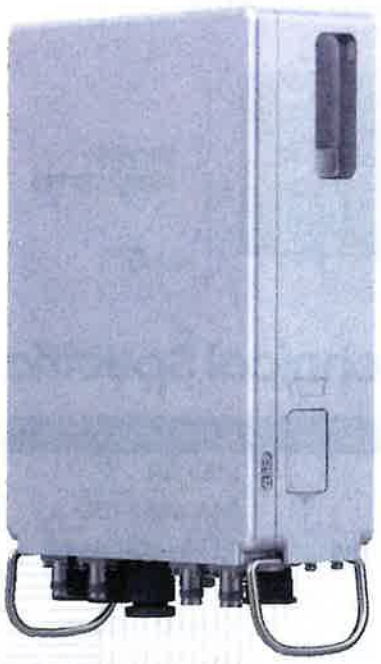
SAMSUNG

Samsung Micro Radio

CBRS(N48) 4T4R Micro Radio

Samsung's CBRS 4T4R Micro Radio provides mobile operators with a cost-effective solution to fill coverage gaps encountered when Macro Radios are in use.

Model Code	RT4423-48A(DC) RT4423-48B(AC)



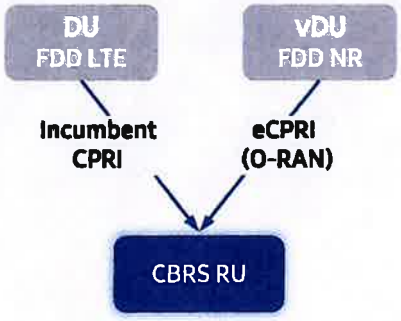
Homepage
samsungnetworks.com

Youtube
www.youtube.com/samsung5g

Points of Differentiation

Dual Personality

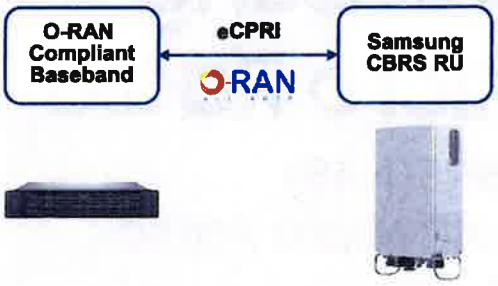
The new CBRS Radio supports existing CPRI and advanced eCPRI interfaces providing Installation options for both legacy LTE and NR network equipment.



O-RAN Compliant

A standardized O-RAN radio supports implementing cost-effective networks capable of enhanced data throughput without compromising existing or new network investments.

Samsung O-RAN products ensure state-of-the-art O-RAN technology will accelerate efforts for creating solid O-RAN ecosystems.



High Capacity

The number of carriers required varies according to site(region). Supporting multiple carriers is essential to customers as they seek to utilize all frequencies available to them.

The new CBRS radio can support up to 5 carriers which is and increase of 3 carriers over the capacity of the previous CBRS product.

Compact and Easy Installation

New CBRS RU is compact in it's design with a volume of 6L and weighing only about 7kg.

This compact design allows for various installation options including, tower, rooftop, pole, wall and shroud.

A clip on antenna is available providing flexibility to Installation requirements.

w/o Clip-on antenna

w/Clip-on antenna

Technical Specifications

Item	Specification
Tech	LTE / NR
Band	B48, n48 / TDD
Frequency Band	3,550 – 3,700 MHz
RF Power	20 W (5 W x 4 Ports)
IBW/OBW	150MHz / 100MHz
Installation	Pole, Wall, Side by side (max 3 radio)
Size/ Weight	**[Radio]** w/o Clip-on antenna : 8.7 x 11.8 x 3.6 inch, 5.97L, 7kg w/ Clip-on antenna : 8.7 x 11.8 x 5.0 inch, 8.42L, 8.5kg *AC and DC type have same size and weight **[Bracket Weight]** Tilting & Swivel (EP97-02038A) : 2.51kg Fixed (EP97-02037A) : 1.31kg Side by side (EP97-02089A) : 8.0kg