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Also admitted in Massachusetts
and New York

July 26, 2022

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

Re: **Notice of Exempt Modification – Facility Modification
115 Peat Meadow Road, New Haven, Connecticut**

Dear Attorney Bachman:

On May 7, 2021, the Siting Council (“Council”) approved Petition No. 1440, a request of Cellco Partnership d/b/a Verizon Wireless (“Cellco”) to establish a wireless telecommunications facility on an extension of an existing billboard support pole, at the above-referenced property address (the “Property”). A copy of the Council’s Petition No. 1440 approval letter is included in Attachment 1.

Cellco has not yet completed all of the site improvements approved in Petition No. 1440 but is seeking Council approval to replace three (3) of the approved antennas with three (3) new Samsung MT6407-77A antennas. The approved and new antennas will be installed on a new antenna mounting frame and utilize new antenna mounts. A set of project plans showing Cellco’s proposed antenna modifications and new antennas specifications are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to New Haven’s Chief Elected Official and Land Use Officer.

Melanie A. Bachman, Esq.

July 26, 2022

Page 2

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The installation of Cellco's new replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A General Power Density table for Cellco's modified facility is included in Attachment 3. The modified facility will be capable of providing Cellco's 5G wireless service.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. According to the attached Structural Analysis ("SA") and Mount Analysis ("MA"), the existing tower, tower foundation and antenna mounts, with certain modifications, can support Cellco's proposed antenna changes. Copies of the updated SA and MA are included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 6.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Melanie A. Bachman, Esq.
July 26, 2022
Page 3

Sincerely,

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

Kenneth C. Baldwin

Enclosures

Copy to:

Justin Elicker, New Haven's Mayor
Laura Brown, Executive Director of City Plan
115 Peat Meadows LLC
Alex Tyurin, Verizon Wireless

ATTACHMENT 1



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

May 7, 2021

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

RE: **PETITION NO. 1440** - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed installation of a wireless telecommunications facility and associated equipment on an extension of the support structure above the top of an existing billboard located on a commercial property at 115 Peat Meadow Road, New Haven, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on May 6, 2021, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need with the recommendation that security measures be employed in the wood fence design and with the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a final site plan showing the route of the access road and placement of the facility at least an additional 1-foot above the existing ground elevation prior to commencement of construction;
3. Submit the FAA determination or the analysis related to any FAA notification requirements prior to commencement of construction;
4. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;
5. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the City of New Haven;

May 7, 2021

6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;
8. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
9. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
10. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated January 14, 2021, and additional correspondence dated March 26, 2021.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,

s/Melanie A. Bachman

Melanie A. Bachman
Executive Director

MAB/IN/emr

Enclosure: Staff Report dated May 6, 2021

c: The Honorable Justin Elicker, Mayor, City of New Haven (jelicker@newhavenct.gov)
The Honorable Joseph Carfora, Mayor, Town of East Haven (jcarfora@townofeasthavenct.org)



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: www.ct.gov/csc

Petition No. 1440
Cellco Partnership d/b/a Verizon Wireless
Telecommunications Facility
115 Peat Meadow Road
New Haven, Connecticut

Staff Report
May 6, 2021

Introduction

On January 14, 2021, the Connecticut Siting Council (Council) received a petition (Petition) from Cellco Partnership d/b/a Verizon Wireless (Cellco) for a declaratory ruling, pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the proposed installation of a wireless telecommunications facility on an extension of the support structure above the top of an existing billboard located on a commercial property at 115 Peat Meadow Road, New Haven, Connecticut.

The purpose of the proposed facility is to provide reliable wireless service to portions of Interstate-95 (I-95) between Cellco's facility at 153 Forbes Street in New Haven and its facility at 65 Messina Drive in East Haven.

On January 14, 2021, Cellco provided notice of the proposed project to abutting property owners, City of New Haven (City) officials, Town of East Haven (Town) officials and state agencies and officials.

On January 15, 2021, the Council sent correspondence to the City and the Town stating that the Council has received the petition and invited the municipalities to contact the Council with any questions or comments by February 13, 2021. No comments were received.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt, and therefore, March 15, 2021 was the deadline for action on this Petition. In response to the Coronavirus pandemic, Governor Lamont issued Executive Order No. 7, as subsequently extended, that provides for a 90-day extension of statutory and regulatory deadlines for administrative agencies. Thus, the deadline under CGS §4-176(e) is extended to June 13, 2021.

The Council issued interrogatories to Cellco on March 11, 2021. Cellco provided responses to the Council's interrogatories on March 26, 2021.

Jurisdiction

Pursuant to CGS §16-50i(a)(6), the Council has exclusive jurisdiction over telecommunications towers, including associated equipment, owned or operated by the state, a public service company or a certified telecommunications provider or used in a cellular system.

Under Regulations of Connecticut State Agencies (RCSA) §16-50j-2a (30), “Tower” means a structure, whether free standing or attached to a building or another structure, that has a height greater than its diameter and that is high relative to its surroundings, or that is used to support antennas for sending or receiving radio frequency signals, or for sending or receiving signals to or from satellites, or any of these, which is or is to be:

- (A) used principally to support one or more antennas for receiving or sending radio frequency signals, or for sending or receiving signals to or from satellites, or any of these, and
- (B) owned or operated by the state, a public service company as defined in Section 16-1 of the Connecticut General Statutes, or a certified telecommunications provider, or used in a cellular system, as defined in Section 16-50i(a) of the Connecticut General Statutes.

Cellco would install its equipment at the top of an extension of the existing billboard support structure. The telecommunications facility would be owned and operated by Cellco, a certified telecommunications provider. Thus, the Council has jurisdiction over the proposed telecommunications facility.

Proposed Telecommunications Facility

The proposed facility would provide wireless service to the surrounding area in Cellco’s 700 MHz, 850 MHz, 1900 MHz and 2100 MHz LTE frequency range.

The site is located in the southeast corner of a 6.0 acre developed commercial property within New Haven’s Automobile Sales Business (BB) district. The property is owned by 115 Peat Meadows, LLC. The property hosts the Brandfon Hyundai automotive dealership and is owned by 115 Peat Meadow, LLC. The subject property abuts Route 1 and I-95 to the south, a City park, an undeveloped parcel and a bulk oil storage facility to the north, residential properties to the west and the New Haven-East Haven town line and the CarMax automobile dealership to the east.

Cellco proposes to install a 45-foot 10-inch extension of the existing monopole support structure extending its overall height to 70-feet above ground level (agl). Cellco would install six panel antennas at a centerline height of 67- feet agl and six remote radio heads at 62-feet agl. The proposed antennas would offer 5G services.

The proposed facility would also include two equipment cabinets on a 7-foot by 4-foot concrete pad and an H-frame structure supporting associated equipment enclosed within an 18-foot by 8-foot 8-inch fenced equipment compound. Cellco would install backup batteries which would provide about eight hours of backup power to the cell site. Cellco would also install an ice bridge and a GPS antenna.

Access to the site would be via a proposed 15-foot wide easement extending from the existing parking lot north of the facility. Cellco would not make any improvements to the ground surface leading up to the gate of the fenced compound.

Electrical and telephone service would extend underground approximately 430 feet south along a proposed 10-foot wide easement from an existing utility pole located in the northeast corner of the property.

Public Safety

A preliminary Federal Aviation Administration (FAA) determination indicates the proposed facility would not require notice to the FAA. A more detailed analysis will be completed to determine if further notification to the FAA is required.

A Professional Engineer duly licensed in the State of Connecticut has certified that the proposed monopole extension and antenna mounts would be structurally adequate to support the proposed equipment loading.

The calculated power density would be 26.35 percent of the applicable limit using a -10 dB off-beam adjustment.

Environmental

The surrounding land use is a mixture of residential and commercial. The nearest residence is approximately 650 feet west of the facility at 590 Forbes Avenue. The nearest wetland is located about 583-feet northwest of the proposed facility. No tree clearing is proposed for the project.

Cellco will implement erosion and sedimentation controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

The facility site is not located within the Federal Emergency Management Agency-designated 100-year or 500-year flood zone. It is located approximately 1 foot above the base flood elevation for the 100-year flood plain and portions of the proposed underground utility easement are located within the 100-year flood zone. Cellco indicates elevating the proposed facility an additional 1-foot above the existing ground elevation may increase the reliability of the facility during a flood event.

The proposed project is not located within a buffered area of the Department of Energy and Environmental Protection's Natural Diversity Database. The facility would be located on a previously disturbed area.

The facility would comply with United States Fish and Wildlife Service guidelines for minimizing potential impacts to bird species.

No schools or commercial child day care centers are located within 250 feet of the site. The nearest school and child day care are located approximately 0.98 miles east and 0.3 miles west of the site, respectively. No visibility of the proposed facility is predicted from either location.

The proposed telecommunications facility is not expected to have a significant visual impact to the surrounding area. Views of the existing billboard and proposed facility are primarily along I-95 to the south and commercial and industrial development to the south and east of the facility. Visibility from the residential area to the west would be obscured by existing vegetation and mature trees. The facility would also be visible from some residences along Peat Meadow Road during leaf-off conditions.

Facility Construction

The construction of the facility is anticipated to take four to eight weeks. Construction will be conducted between the hours of 7 a.m. to 5 p.m. weekdays and Saturdays.

Conclusion

If approved, staff recommends the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a final site plan showing the route of the access road and placement of the facility at least an additional 1-foot above the existing ground elevation prior to commencement of construction; and
3. Submit the FAA determination or the analysis related to any FAA notification requirements prior to commencement of construction.

Figure 1. Proposed Site Location¹



¹ Cellco states in the response to Council interrogatories dated March 25, 2021 that “The 15-foot-wide access easement will commence at the northerly right-of-way line of Forbes Avenue, and run in a northerly direction though the existing parking-lot, then change course and continue in a southerly direction towards the northerly side of the proposed facility.” This is represented in Fig. 3

Figure 2. Site Plan of the proposed Facility

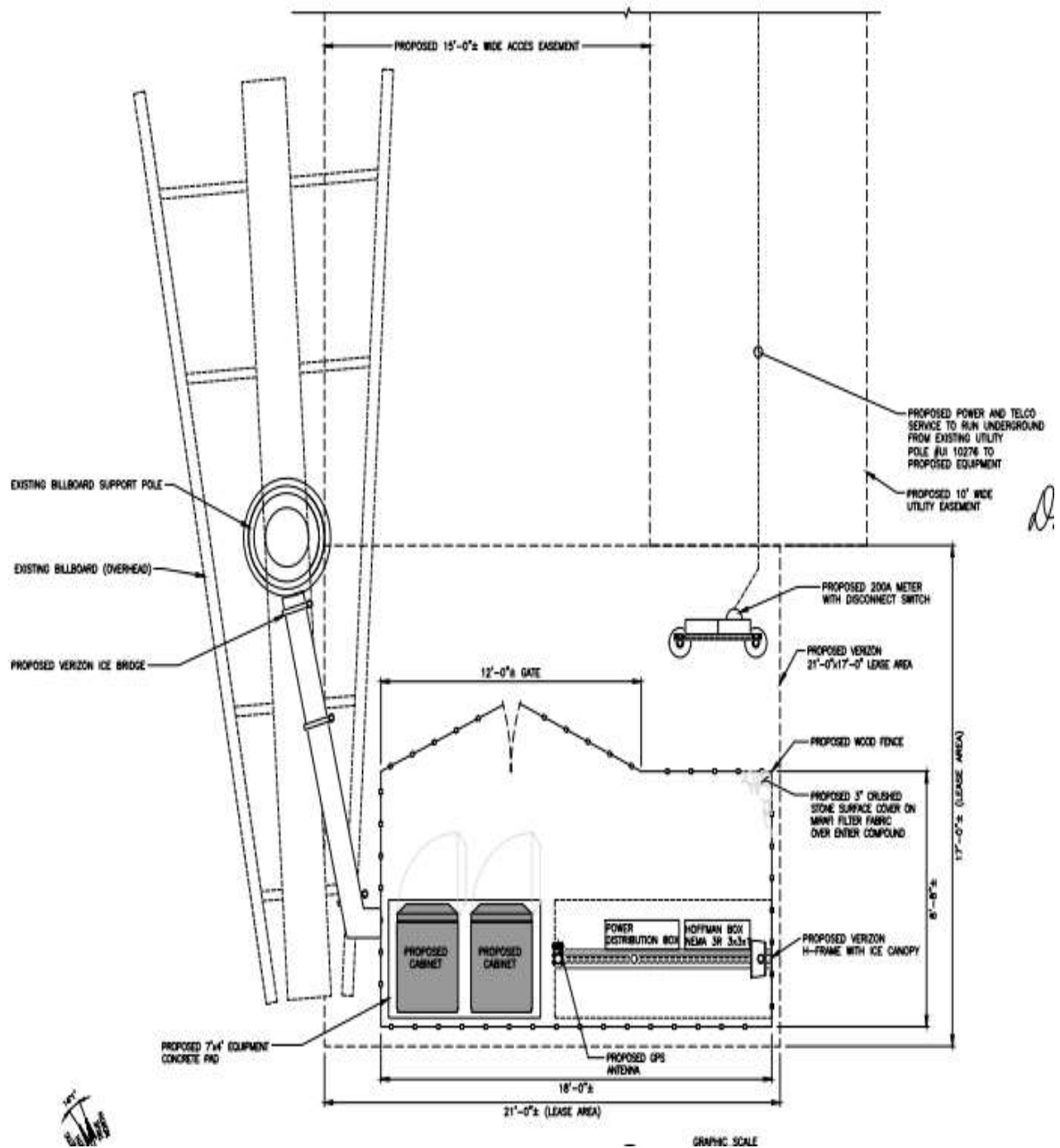


Figure 3. Side Elevation of the proposed facility

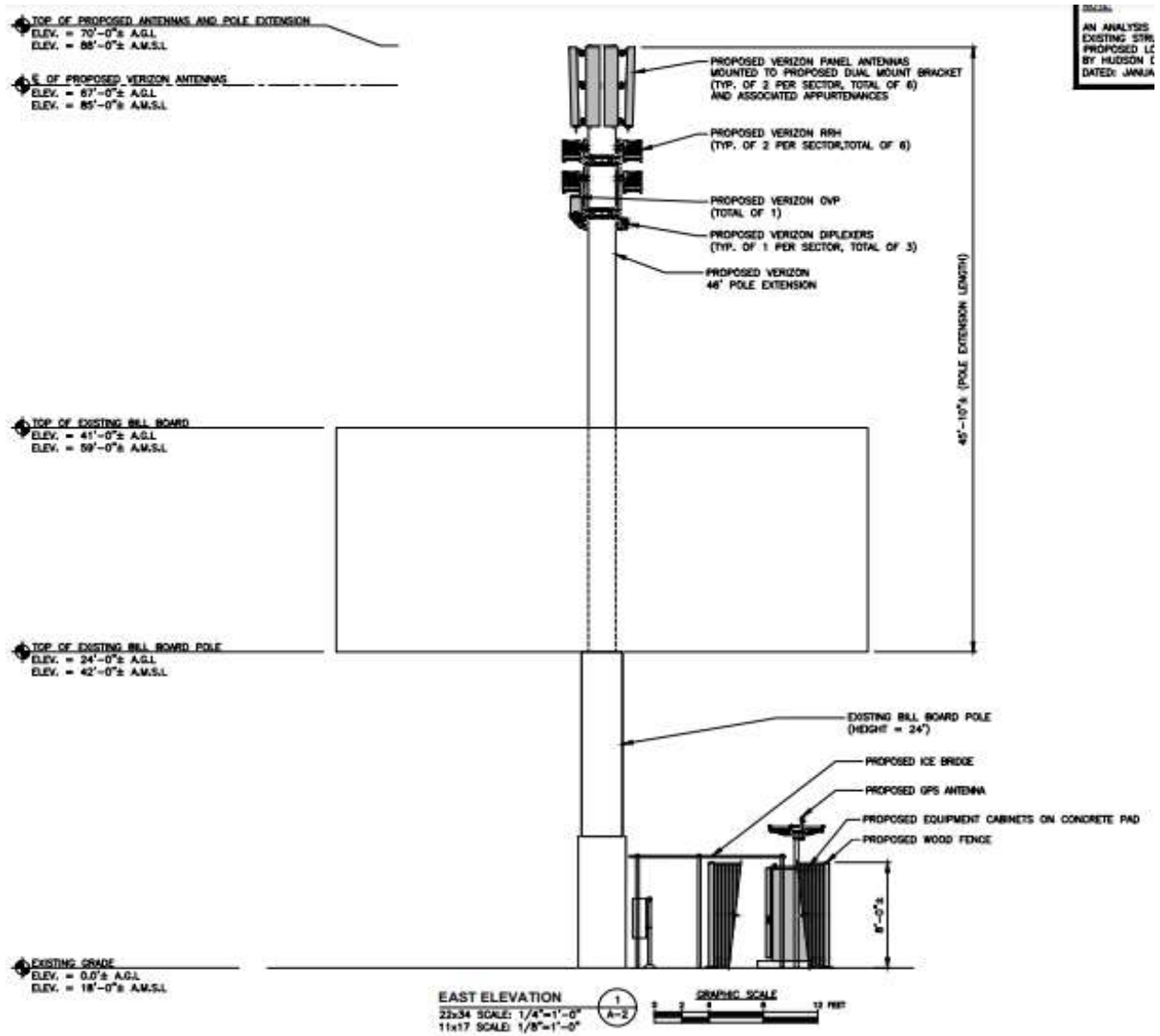
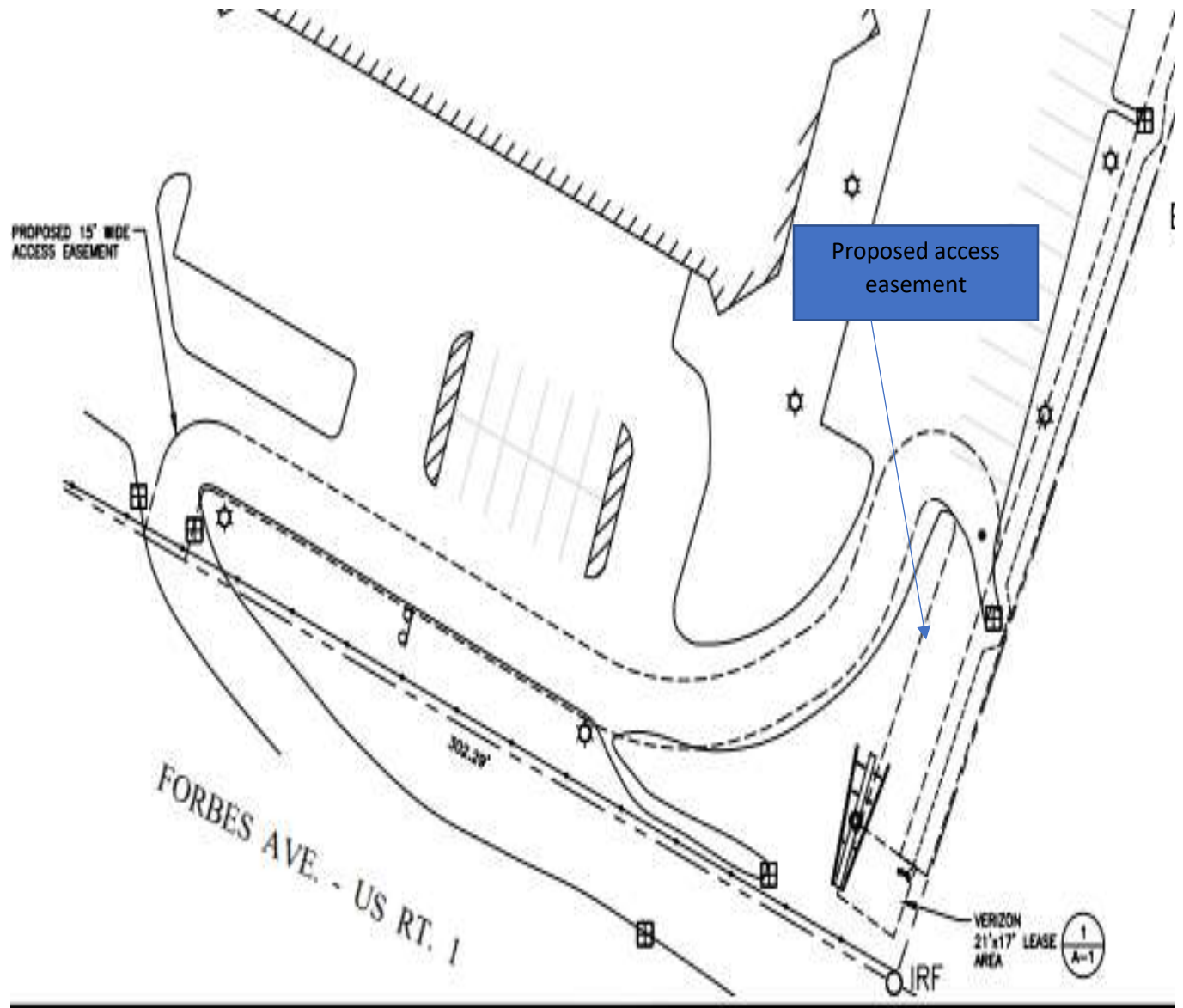


Figure 4. Site Plan showing access easement



ATTACHMENT 2

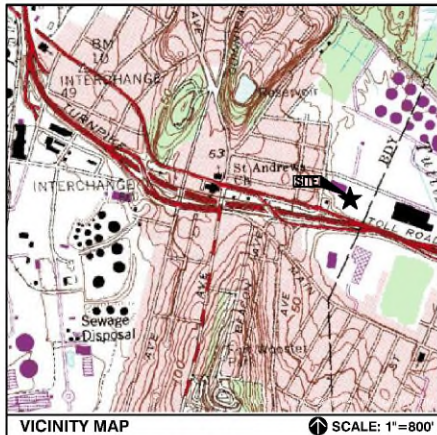
CELLCO PARTNERSHIP

d.b.a. **verizon**

WIRELESS COMMUNICATIONS FACILITY

EAST HAVEN 5 CT

115 MEADOW ROAD
NEW HAVEN, CT 06513



DIRECTIONS TO SITE: FROM VERIZON WALLINGFORD CT OFFICE

20 ALEXANDER DRIVE, WALLINGFORD, CT 06492

HEAD NORTH ON ALEXANDER DR TOWARD BARNES INDUSTRIAL RD S
TURN RIGHT ONTO BARNES INDUSTRIAL RD S
TURN LEFT AT THE 1ST CROSS STREET ONTO CT-68 W
TURN RIGHT TOWARD US-5 N/N COLONY RD
TURN RIGHT ONTO US-5 N/N COLONY RD
TURN LEFT TO MERGE ONTO CT-15 S TOWARD NEW HAVEN
TAKE EXIT 38 FOR CT-123/NEW CANAAN AVENUE
TURN RIGHT ONTO CT-123 S/NEW CANAAN AVE
ARRIVE AT 284 NEW CANAAN AVENUE, NORWALK, CT ON LEFT

CONSULTANT TEAM

PROJECT ENGINEER

HUDSON DESIGN GROUP, LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: 1-(978)-557-5553
FAX: 1-(978)-336-5586

SURVEYOR

NORTHEAST SURVEY CONSULTANTS
116 PLEASANT ST, SUITE 302
EASTHAMPTON, MA 01027
TEL: 1-(413)-203-5144

PROJECT SUMMARY

SITE NAME: EAST HAVEN 5 CT
SITE ADDRESS: 115 MEADOW ROAD
NEW HAVEN, CT 06513
APPLICANT: CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492
LATITUDE: N 41°17'18.84"
LONGITUDE: W 72° 53' 09.07"
PARCEL ID: 72/982/300
PROPERTY OWNER: 115 PEAT MEADOWS LLC
515 WEST MAIN STREET
BRANFORD, CT 06405

SHEET INDEX

SHEET NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	ABUTTERS PLAN AND EXISTING CONDITIONS
C-2	SITE PLAN
C-3	COMPOUND GRADING PLAN
A-1	COMPOUND PLAN
A-2	ELEVATION
A-3	EQUIPMENT PLAN AND DETAILS
A-4	ANTENNA PLAN AND DETAILS
A-5	CABLE SUPPORT DETAILS
A-6	FENCE DETAILS
A-7	SITE SURFACE COVER AND EROSION CONTROL DETAILS
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
S-1	ICE CANOPY DETAILS
S-2	ICE CANOPY DETAILS
E-1	ELECTRICAL NOTES & WIRING DIAGRAM
E-2	GROUNDING RISER DIAGRAM
E-3	GROUNDING PLAN
E-4	GROUNDING DETAILS
RF-1	RF PLUMBING DIAGRAM & BILL OF MATERIAL

UNDERGROUND SERVICE ALERT



NOTE TO GENERAL CONTRACTOR:

'RF' DESIGN AND EQUIPMENT IS BASED UPON
RFDS ISSUED BY VZW DATED: 4/06/2022 REV 3
THE CONTRACTOR OF RECORD SHALL CONTACT VZW PRIOR TO ANY AND
ALL ORDERING/PURCHASING/INSTALLATION OF EQUIPMENT TO VERIFY THAT
THE 'RF' LISTED IN THE DRAWING SET IS CURRENT AND UP TO DATE.

FOR CONSTRUCTION

PREPARED FOR: CELLCO PARTNERSHIP D.S.A.

verizon

HUDSON
Design Group LLC

45 BEECHWOOD DRIVE TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 336-5586



CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/24/22	REV. ANTENNA MOUNT	SKT
1	06/13/22	ADDED KIT7 ANTENNAS	SKT
0	07/18/21	ISSUED FOR CONSTRUCTION	SKT

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

DIVISION 01000 — GENERAL REQUIREMENTS

PART 1 — GENERAL

REFER TO VERIZON STANDARD CONSTRUCTION SPECIFICATIONS. IN CASE OF A CONFLICT, VERIZON STANDARD CONSTRUCTION SPECIFICATIONS (LATEST EDITION) SHALL BE FOLLOWED.

PART 2 GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCLUDE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) VERIZON'S REPRESENTATIVE OF ANY OMISSIONS OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, SUPPLIES, AND OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BID OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE OF ALL PERSONNEL INVOLVED WITH THE PROJECT.

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

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

11. THE CONTRACTOR SHALL MAKE NECESSARY PROMISONS TO PROTECT EXISTING SITE CONDITIONS DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE ALL UNNECESSARY MATERIAL.

13. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE STATE BASIC BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. 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 THE ARCHITECT/ENGINEER.

14. THE CONTRACTOR SHALL NOTIFY VERIZON'S REPRESENTATIVE WHERE A CONFLICT OCCURS (ON ANY OF THE CONTRACT DOCUMENTS). THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL THE CONFLICT IS RESOLVED BY VERIZON'S REPRESENTATIVE.

15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

16. THE CONTRACTOR SHALL NOTIFY THE RF ENGINEER FOR ANTENNA AZIMUTH VERIFICATION (DURING ANTENNA INSTALLATION) PRIOR TO CONDUCTING SITE SWEETING.

17. THE GENERAL CONTRACTOR SHALL IN ALL INSTANCES CONFORM TO THE SPECIFICATIONS ISSUED BY VERIZON.

18. WHERE APPLICABLE PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT STRUCTURAL ENGINEER'S APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE STRUCTURE. FILL FOR CORE PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

CONCRETE

CAST-IN-PLACE CONCRETE

PART 1 — GENERAL

1.01 DESCRIPTION

WORK INCLUDES CONSTRUCTION OF CAST-IN-PLACE CONCRETE FOUNDATIONS, INCLUDING FURNISHING AND INSTALLING READY-MIX CONCRETE, REINFORCING, FORMWORK, AND ACCESSORY MATERIALS AS SHOWN ON THE DRAWINGS. CAST-IN-PLACE CONCRETE INCLUDES ALL SITE CONCRETE, INCLUDING FOUNDATIONS, SLABS ON GRADE, EQUIPMENT PADS, PIERS AND GUARD POST FOUNDATIONS.

1.02 RELATED WORK

A. COORDINATE UNDER SLAB CONDUITS

B. COORDINATE WITH GROUNDING

1.03 APPLICABLE STANDARDS

A. ACI-301 — SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDINGS.

B. ACI 347 — GUIDE TO FORMWORK FOR CONCRETE.

C. ASTM C33 — CONCRETE AGGREGATES

D. ASTM C94 — READY-MIXED CONCRETE

E. ASTM C150 — PORTLAND CEMENT

F. ASTM C260 — AIR-ENTRAINING ADMIXTURES FOR CONCRETE.

G. ASTM C309 — LIQUID MEMBRANE FORMING COMPOUNDS FOR CURING CONCRETE.

H. ASTM C494 — CHEMICAL ADMIXTURES FOR CONCRETE.

I. ASTM A615 — DEFORMED STEEL BARS FOR CONCRETE REINFORCEMENT.

J. ASTM A185 — STEEL WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT

1.04 QUALITY ASSURANCE

CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS DIRECTED BY VERIZON. NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

1.05 TESTS

CONCRETE TESTS SHALL BE AS DETAILED BELOW OR AS DIRECTED BY VERIZON. CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS THE WORK PROGRESSES. FAILURE TO DETECT ANY DEFECTIVE WORK OR MATERIAL SHALL NOT IN ANY WAY PREVENT LATER REJECTION WHEN SUCH DEFECT IS DISCOVERED NOR SHALL IT OBLIGATE THE ENGINEER FOR FINAL ACCEPTANCE.

A. THREE CONCRETE TEST CYLINDERS SHALL BE TAKEN OF THE TOWER PIER FOUNDATION. ONE SHALL BE TESTED @ THREE DAYS, ONE @ TWENTY-EIGHT DAYS. THE THIRD CYLINDER SHALL BE KEPT SEPARATELY. (IF REQUIRED TO BE USED IN THE FUTURE.)

B. ONE SLUMP TEST SHALL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN. SLUMP SHALL NOT EXCEED 4" UNLESS OTHERWISE NOTED.

PART 2 — PRODUCT

2.01 CONCRETE MATERIALS

CONCRETE SHALL BE COMPOSED OF PORTLAND CEMENT, WATER, FINE AND COARSE AGGREGATES, AND ADMIXTURES AS SPECIFIED BELOW. ALL WELL MIXED AND BROUGHT TO PROPER CONSISTENCY, CLASS I, II, III, OR V.

A. CEMENT: CEMENT SHALL BE TYPE II, GRAY COLOR, LOW-ALKALI PORTLAND CEMENT CONFORMING TO ASTM C33.

B. FINE AND COARSE AGGREGATES: AGGREGATES FOR USE IN CONCRETE SHALL COMPLY WITH ASTM C33.

C. WATER: WATER FOR MIXING AND CURING CONCRETE SHALL BE FREE FROM SEWAGE, OIL, ACID, ALKALI, AND SALTS AND SHALL BE FREE FROM OBJECTIONABLE QUANTITIES OF SILT, ORGANIC MATTER, AND OTHER DELTERIOUS SUBSTANCES.

2.02 ADMIXTURES

A. CHEMICAL ADMIXTURE: ASTM C494, TYPE A — WATER REDUCING OR TYPE D — WATER REDUCING AND RETARDING.

2.03 CURING COMPOUND: ASTM C309, TYPE I, CLASS B; TRANSLUCENT.

2.04 ACCESSORIES

A. NONSHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS; CAPABLE OF DEVELOPING MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI IN 28 DAYS.

B. JOINT FILLER: BITUMINOUS TYPE, ASTM D1751 OR NON-BITUMINOUS TYPE ASTM D1752.

C. ANCHOR BOLTS: ASTM A307, UNPRIME.

2.05 CONCRETE MIX

A. CONCRETE SHALL BE PROPORTIONED PER REQUIREMENTS OF ACI 301 & VERIZON CONSTRUCTION SPECIFICATIONS FOR DESIGN STRENGTH & WORKABILITY. CONCRETE SHALL BE DELIVERED WITHIN 45 MINUTES OF ADDITION OF WATER TO MIX.

B. THE FOLLOWING STRENGTHS SHALL BE USED:
1. FENCE POST FOUNDATIONS — DESIGN COMPRESSIVE STRENGTH AT 28 DAYS OF 3,000 PSI.
2. EQUIPMENT PLATFORM PIERS FOUNDATION — DESIGN COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED. (CONTRACTOR FURNISH 4,000 PSI CONCRETE).

3. CONCRETE STRENGTH FOR MONOPOLE OR TOWER FOUNDATION SHALL BE 1,000 PSI MORE THAN THE MANUFACTURER'S RECOMMENDATIONS, 4,000 PSI MINIMUM.

C. USE ACCELERATING ADMIXTURES IN COLD WEATHER AND RETARDING ADMIXTURES IN HOT WEATHER ONLY WHEN APPROVED BY THE ENGINEER.

D. TOTAL AIR CONTENT SHALL BE 5 PERCENT PLUS OR MINUS 1 PERCENT.

PART 3 — EXECUTION

3.01 INSPECTION

THE CONTRACTOR SHALL VERIFY ANCHORS, SEATS, PENETRATIONS, PLATES, REINFORCEMENT, AND OTHER ITEMS TO CAST INTO CONCRETE ARE ACCURATELY PLACED, HELD SECURELY, AND SHALL NOT CAUSE HANDSHIP IN PLACING CONCRETE.

3.02 PREPARATION

A. THE CONTRACTOR SHALL PREPARE PREVIOUSLY PLACED CONCRETE BY CLEANING WITH STEEL BRUSH AND APPLYING BONDING AGENT. APPLY BONDING AGENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3.03 PLACING CONCRETE

A. THE ENGINEER SHALL BE NOTIFIED NOT LESS THAN 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT. UNLESS INSPECTION IS WAIVED IN EACH CASE, PLACING OF CONCRETE SHALL BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER.

CONCRETE SHALL NOT BE PLACED UNTIL ALL FORM WORK, EMBEDDED PARTS, STEEL REINFORCEMENT, FOUNDATION SURFACES, AND JOINTS EXISTING IN THE PLACING HAVE BEEN APPROVED, AND UNTIL FACILITIES ACCEPTABLE TO THE VERIZON REPRESENTATIVE HAVE BEEN PROVIDED AND READY FOR ACQUISITION OF THE WORK AS SPECIFIED. CONCRETE MAY NOT BE ORDERED FOR PLACEMENT UNTIL ALL ITEMS HAVE BEEN APPROVED AND VERIZON HAS PERFORMED A FINAL INSPECTION AND GIVEN APPROVAL TO START PLACEMENT IN WRITING.

B. UNLESS SPECIFIED TO BE REVEALED, EXPOSED EDGES OF FLOATED OR TROWELED SURFACES SHALL BE EDGED WITH A TOOL HAVING A 1/4" CORNER RADIUS.

C. PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301.

D. THE CONTRACTOR SHALL ENSURE THAT REINFORCEMENT, INSERTS, EMBEDDED PARTS, FORMED JOINTS AND VAPOR BARRIERS ARE NOT DISTURBED DURING CONCRETE PLACEMENT.

E. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL, UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....1 1/2 IN.
IN CONCRETE EXPOSED TO EARTH OR WEATHER:
#4 AND LARGER.....2 IN.
#5 AND SMALLER & W/F.....1 1/2 IN.

CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL.....3/4 IN.
BEAMS AND COLUMNS.....1 1/2 IN.

3.04 SURFACE FINISHES

A. SURFACES AGAINST WHICH BACK FILL OR CONCRETE SHALL BE PLACED REQUIRES NO TREATMENT EXCEPT REPAIR OF DEFECTIVE AREAS. NOTED.

B. SURFACES THAT WILL BE PERMANENTLY EXPOSED SHALL PRESENT A UNIFORM FINISH PROVIDED BY THE REMOVAL OF FINS AND THE FILLING OF HOLES AND OTHER IRREGULARITIES WITH DRY PACK GROUT, OR BY SACKING WITH UTILITY OR ORDINARY GROUT.

C. SURFACES THAT WOULD NORMALLY BE LEVEL AND WHICH WILL BE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE SLOPED FOR DRAINAGE. UNLESS ENGINEER'S DESIGN DRAWING SPECIFIES A HORIZONTAL SURFACE OR SHOWS THE SLOPE REQUIRED, THE TOPS OF NARROW SURFACES, SUCH AS STAIR TREADS, WALLS, CURBS, AND PARAPETS SHALL BE SLOPED APPROXIMATELY 1/8" / FT. OR MORE. BROADER SURFACES SUCH AS WALKS, ROADS, PARKING AREAS AND PLATFORMS SHALL BE SLOPED APPROXIMATELY 1/4" / FT.

D. SURFACES THAT WILL BE COVERED BY BACKFILL OR CONCRETE SHALL BE SMOOTH SCREEDED.

E. EXPOSED SLAB AND PIER SURFACES SHALL BE CONSOLIDATED, SCREDED, FLOATED, AND "TIEED TROWELED." HAND OR POWER-DRIVEN EQUIPMENT MAY BE USED FOR FLOATINGS WHICH SHALL BE STARTED AS SOON AS THE SCREEDED SURFACE HAS ATTAINED A STIFFNESS TO PERMIT FINISHING OPERATIONS. ALL EDGES MUST HAVE A 3/4" CHAMFER. CONCRETE EXPANSION ANCHORS AND EPOXY ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS, SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. MANUFACTURER'S MINIMUM CONCRETE EDGE DISTANCE SHALL BE MAINTAINED DURING INSTALLATION.

3.05 PATCHING

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON REMOVAL OF THE FORMS TO OBSERVE CONCRETE SURFACE CONDITIONS. IMPERFECTIONS SHALL BE PATCHED ACCORDING TO THE ENGINEER'S DIRECTION.

3.06 DEFECTIVE CONCRETE

THE CONTRACTOR SHALL MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LEVELS AND LINES, DETAILS, AND ELEVATIONS AS SPECIFIED IN ACI 301.

3.07 PROTECTION

A. IMMEDIATELY AFTER PLACEMENT, THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY. FINISHED WORK SHALL BE PROTECTED.

B. CONCRETE SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.

C. ALL CONCRETE SHALL BE WATER CURED PER ACCEPTABLE PRACTICES SPECIFIED BY ACI CODE.

METALS

PART 1 — GENERAL

1.01 WORK INCLUDED

A. THE WORK CONSISTS OF THE FABRICATION AND INSTALLATION OF ALL MATERIALS TO BE FURNISHED, AND WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDES ALL EQUIPMENT, LABOR AND SERVICES REQUIRED FOR ALL STRUCTURAL STEEL WORK, INCLUDING ALL ITEMS INCIDENTAL THEREOF AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS, INCLUDING:

1. STEEL FRAMING INCLUDING BEAMS, ANGLES, CHANNELS AND PLATES.

2. WELDING AND BOLTING OF ATTACHMENTS.

1.02 REFERENCE STANDARDS

A. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

1. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPIATION OF ASTM STANDARDS IN BUILDING CODES"

2. AWS: AMERICAN WELDING SOCIETY INC., AS PUBLISHED IN "STANDARD D11-2015, STRUCTURAL WELDING CODE."

3. AISI: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION, AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

4. EA/TA-222-G-3 STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.

PART 2 — STRUCTURAL NOTES

ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-992-50 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", MISC. STEEL TO BE A36.

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS AND/TA-222-G-3 STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.

2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.

3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

4. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.

5. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE)AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS", UNLESS OTHERWISE NOTED. ALL BOLTS SHALL BE 5/8" DIA TYPE X.

6. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.

7. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.

8. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIPP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL, THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 MILS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.

9. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED BY AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AWS AND ALL WELDED FILLET WELD SIZES SHALL BE SHOWN. PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AWS "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION.

10. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.

11. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP. WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA. UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION FOR EXTERNAL USE APPLICATIONS.

12. UNLESS OTHERWISE NOTED, EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN, AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE H-11T-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED ON DWG) OR ENGINEERS APPROVED EQUAL WITH 4-1/4" MIN. EMBEDMENT DEPTH.

13. UNLESS OTHERWISE NOTED, EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-5-325, GROUP II, TYPE 4, CLASS I, HILT KWIK BOLT OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.

WOOD

1. PLYWOOD SHALL MEET THE RECOMMENDATIONS OF THE A.P.A.
2. ALL LUMBER SHALL BE SPRUCE-PINE-FIR (SPF) #1 GRADE.
3. ALL LUMBER SHALL BE PRESURE TREATED WITH PRESERVATIVES. ALLOWABLE BENDING STRESS: B with = 1,000 PSI
MODULUS OF ELASTICITY: 1.8x10e6 PSI

4. ALL JOINT HANGERS, CLIP ANGLES AND PLATES TO BE HEAVY GALVANIZED AS MANUFACTURED BY SIMPSON CO, OR APPROVED EQUAL.
5. ALL U/L'S TO BE MANUFACTURED BY BOSE CASCADE OR APPROVED EQUAL.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION

PART 1 — GENERAL

1.01 WORK INCLUDED

A. ANTENNAS AND HYBRIFLEX CABLES SHALL BE AS SPECIFIED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND PROPERTY. STRICT ADHERENCE TO OSHA STANDARDS IS MANDATED.

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND VERIZON SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL HYBRIFLEX CABLES AND TERMINATION'S BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE (THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED).

E. ANTENNA MOUNTS AND HARDWARE SHALL BE PAINTED TO MATCH EXISTING CONDITIONS.

F. ANTENNA AND HYBRIFLEX CABLE GROUNDING:

1. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED.

2. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

PREPARED FOR: CELCO PARTNERSHIP D.S.A.

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HG HUDSON Design Group LLC

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N ANDOVER, MA 01845 FAX: (978) 254-0364



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CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	06/13/22	REV. ANTENNA MOUNT	SKT
2	06/24/22	REV. ANTENNA MOUNT	SKT
3	06/24/22	REV. ANTENNA MOUNT	SKT
4	06/24/22	REV. ANTENNA MOUNT	SKT
5	06/24/22	REV. ANTENNA MOUNT	SKT
6	07/10/22	ISSUED FOR CONSTRUCTION	SKT

SITE NAME:
EAST HAVEN 5 CT

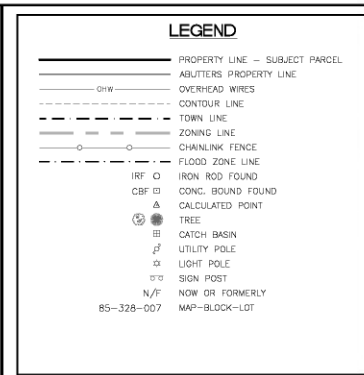
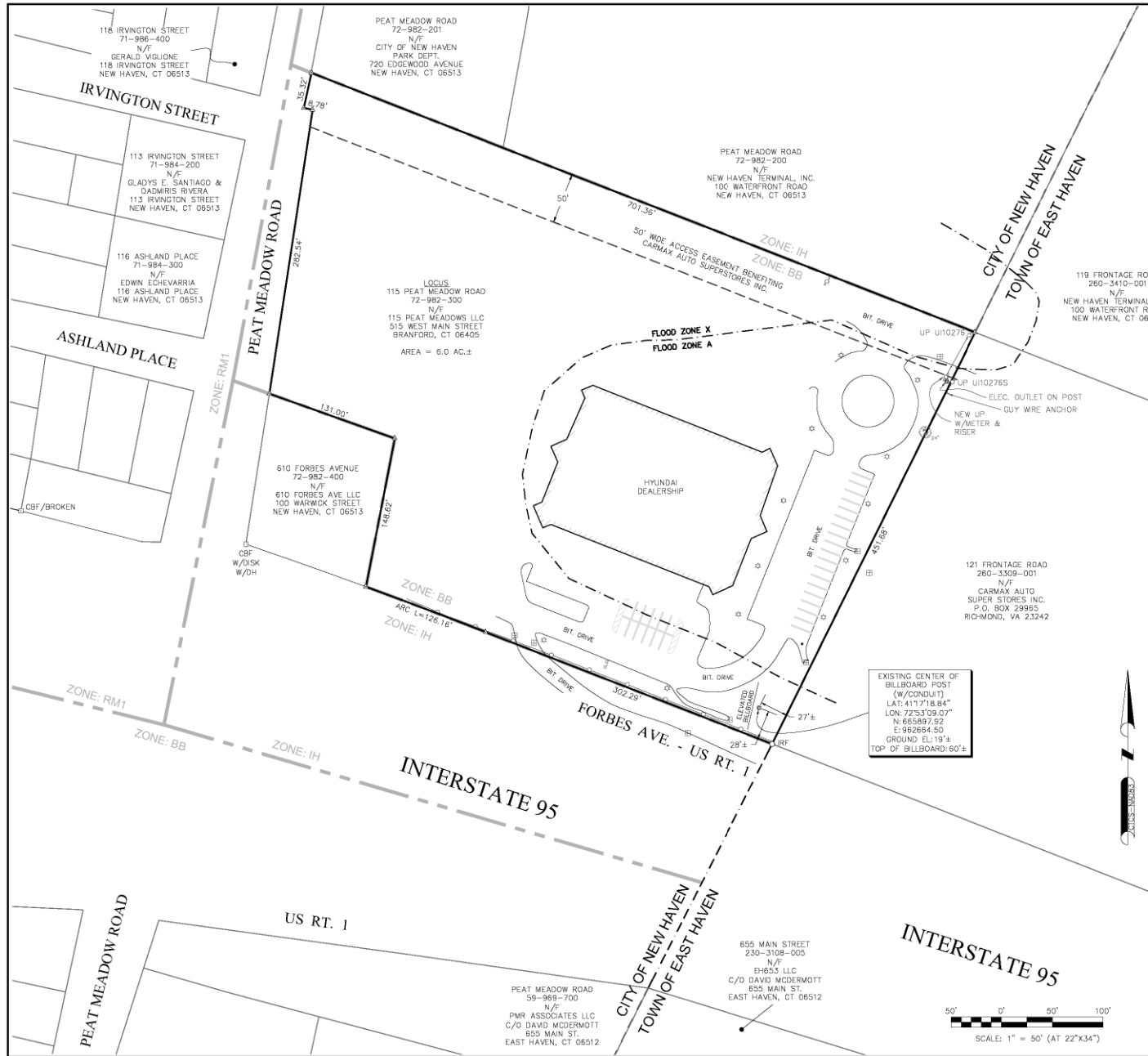
SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
GENERAL NOTES

SHEET NUMBER

GN-1

IF ASSUMED EXISTING CONDITION DIFFERS, ENGINEER MUST BE INFORMED OF ACTUAL FIELD CONDITIONS. SUBCONTRACTOR TO VERIFY EXISTING DIMENSIONS PRIOR TO STEEL FABRICATION.



- ### SITE SPECIFIC NOTES:
- FIELD SURVEY DATE: 8-21-2019
 - HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
 - VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1985 (NAVD85)
 - OWNER: 115 PEAT MEADOWS LLC
515 WEST MAIN STREET
BRANFORD, CT 06405
 - SITE NAME: EAST HAVEN 5 CT
 - SITE ADDRESS: 115 PEAT MEADOW ROAD
NEW HAVEN, CT 06513
 - APPLICANT: CELCO PARTNERSHIP D.B.A. VERIZON WIRELESS
 - TAX ID: 72-982-300
 - DEED REFERENCE: BOOK 9467 PAGE 342
 - PLAN REFERENCE: MAP 61-44
 - ZONING DISTRICT: BB
 - THE HORIZONTAL DATUM AND VERTICAL DATUM WERE DERIVED FROM A DUAL FREQUENCY GPS SURVEY.
 - ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ALL SITE WORK. CONTACT CALL BEFORE YOU DIG AT 811 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
 - ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE PROPOSED IMPROVEMENTS ON THIS PROPERTY ARE LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED), AREA OF MINIMAL FLOOD HAZARD & ZONE A 1% ANNUAL CHANCE FLOOD (NO BASE FLOOD ELEVATION DETERMINED). MAP NO. 05005C 0442J
EFFECTIVE DATE: 6/18/2010
 - FIELD SURVEY BY EDM TOTAL STATION & RTK GPS.
 - NO WETLAND DELINEATIONS WERE OBSERVED DURING THE FIELD SURVEY.

THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS INC. ON SEPTEMBER 26, 1997.

TYPE OF SURVEY: IMPROVEMENT LOCATION SURVEY
BOUNDARY SURVEY CATEGORY: DEPENDENT RESURVEY
CLASS OF ACCURACY: HORIZONTAL CLASS C
VERTICAL CLASS V-2
TOPOGRAPHIC CLASS N/A

PURPOSE OF SURVEY: ADDITION OF CELLULAR EQUIPMENT

1. "THIS MAP WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY/BOUNDARY OR LIMITED PROPERTY/BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE."

2. THIS DOCUMENT AND COPIES THEREOF ARE VALID ONLY IF THEY BEAR THE LINE SIGNATURE AND EMBOSSED SEAL OF THE DESIGNATED PROFESSIONAL. UNAUTHORIZED ALTERATIONS RENDER ANY DECLARATION NULL AND VOID.

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

Charles G. Gudman
CHARLES G. GUDMAN, P.L.S. #70103

PREPARED FOR: CELCO PARTNERSHIP D.B.A.

verizon

HDG
HUDSON
Design Group LLC

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FAX: (978) 254-5564

NORTHEAST SURVEY CONSULTANTS

116 Pleasant St., Ste. 302
P.O. Box 109
Easthampton, MA 01027
(413) 203-9144
northeastsurvey.com

CHECKED BY: BCF

APPROVED BY: CCG

SUBMITTALS

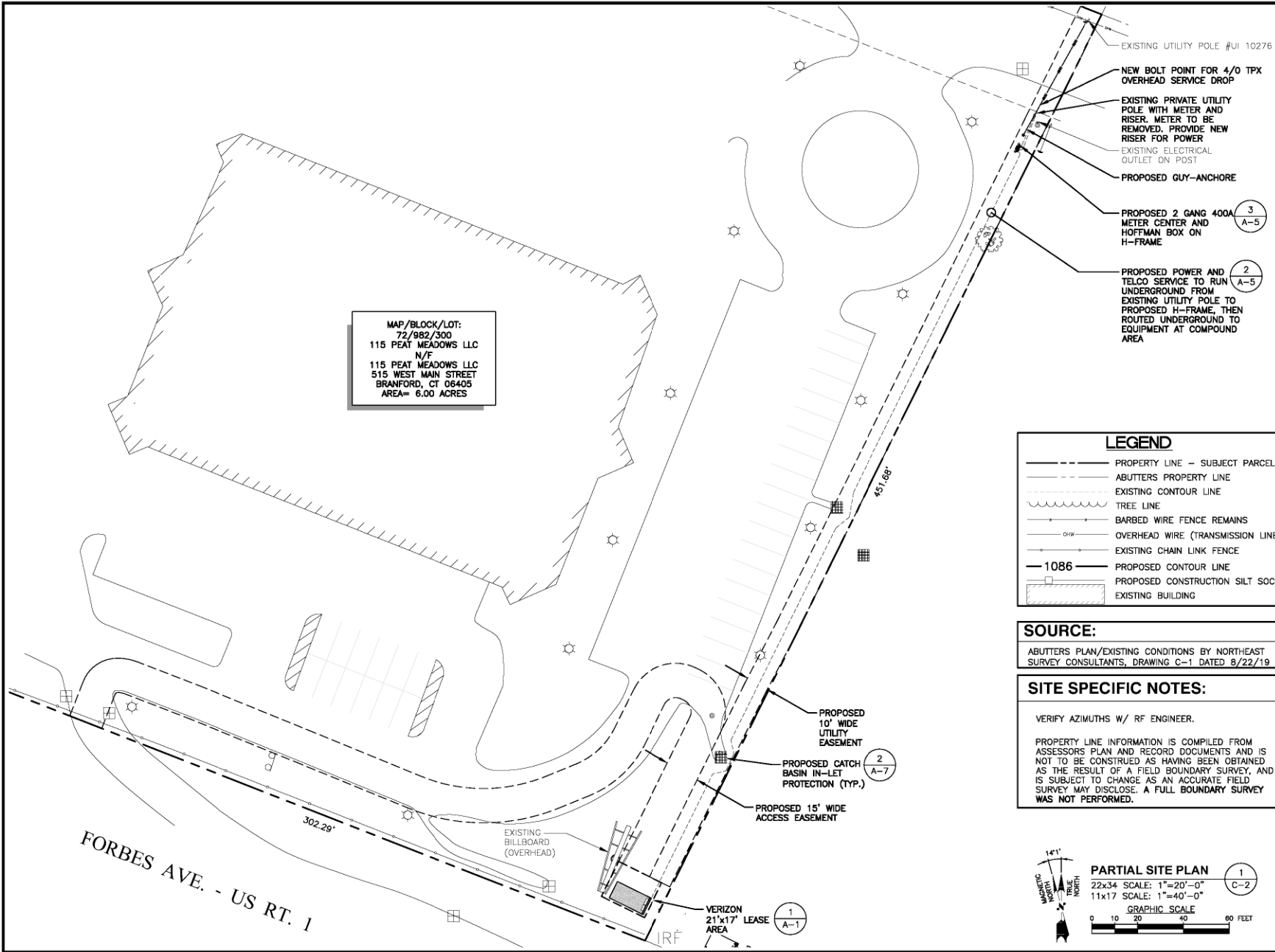
REV.	DATE	DESCRIPTION	BY
0	8/22/19	ISSUED FOR REVIEW	CCG

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 PEAT MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE:
ABUTTERS
PLAN/EXISTING
CONDITIONS

SHEET NUMBER:
C-1



FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.

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CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS				
REV.	DATE	DESCRIPTION	BY	
2	06/24/22	REV. ANTENNA MOUNT	SKT	
1	06/13/22	ADDED KIT ANTENNAS	SKT	
0	07/19/21	ISSUED FOR CONSTRUCTION	SKT	

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
SITE PLAN

SHEET NUMBER
C-2

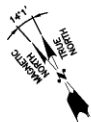
LEGEND

- PROPERTY LINE - SUBJECT PARCEL
- ABUTTERS PROPERTY LINE
- EXISTING CONTOUR LINE
- TREE LINE
- BARBED WIRE FENCE REMAINS
- OVERHEAD WIRE (TRANSMISSION LINE)
- EXISTING CHAIN LINK FENCE
- EXISTING UNDERGROUND SEWER LINE
- DELINEATED WETLAND LINE
- EXISTING BUILDING
- PROPOSED EQUIPMENT CONCRETE PAD
- CB CATCH BASIN
- CONIFEROUS TREE
- DECIDUOUS TREE
- EXISTING GROUND WELL
- EXISTING SEWER MANHOLE
- STONEWALL
- WELL
- UTILITY POLE
- 1086 PROPOSED CONTOUR LINE
- PROPOSED CONSTRUCTION SILT SOCK
- PROPOSED TOWER

EXISTING BILLBOARD SUPPORT POLE

SHAPE, COMPACT, LOAM & SEED WITH N.E. WILDLIFE MIX, AND COVER WITH SHREDDED MULCH

2
A-7
PROPOSED CONSTRUCTION SILT SOCK PER 2002 CONNECTICUT GUIDELINES FOR SOIL AND SEDIMENT CONTROL



PROPOSED 15'-0"± WIDE ACCESS EASEMENT

PROPOSED 10' WIDE UTILITY EASEMENT

12'-0"± GATE

PROPOSED VERIZON 21'-0"x17'-0" LEASE AREA

PROPOSED WOOD FENCE

COMPOUND GRADING PLAN

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

GRAPHIC SCALE
0 1 2 4 6 FEET

FOR CONSTRUCTION

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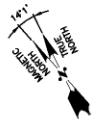
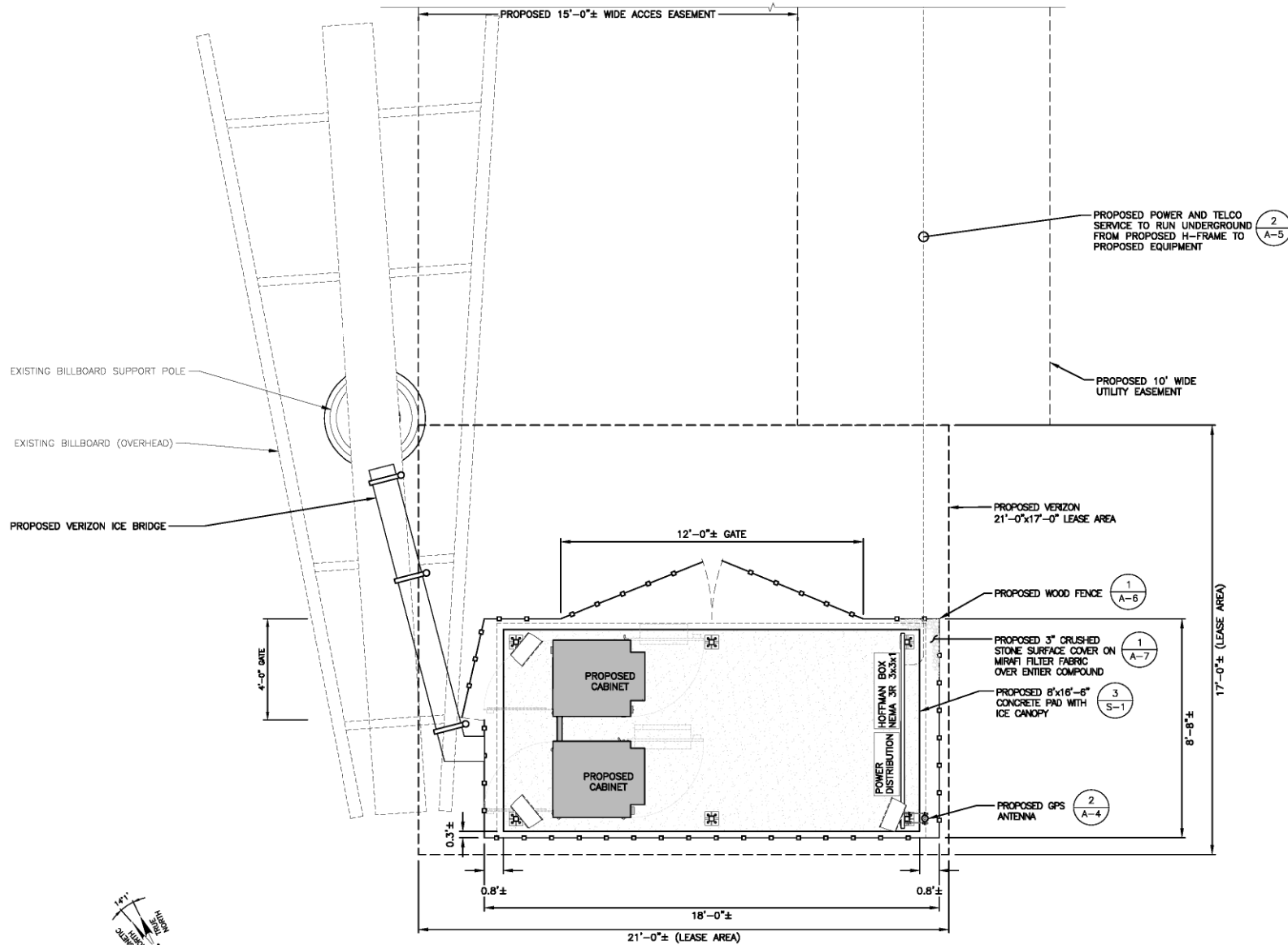
REV.	DATE	DESCRIPTION	BY
2	06/24/22	REV. ANTENNA MOUNT	SKY
1	05/13/22	ADD KIT ANTENNAS	SKY
0	07/16/21	ISSUED FOR CONSTRUCTION	SKY

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
COMPOUND
GRADING PLAN

SHEET NUMBER
C-3



EQUIPMENT PLAN

22x34 SCALE: 1/2"=1'-0"

11x17 SCALE: 1/4"=1'-0"

GRAPHIC SCALE

0 1 2 4 6 FEET

FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.

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CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

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SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1

TOP OF PROPOSED ANTENNAS AND POLE EXTENSION
ELEV. = 70'-0"± A.G.L.
ELEV. = 92'-0"± A.M.S.L.

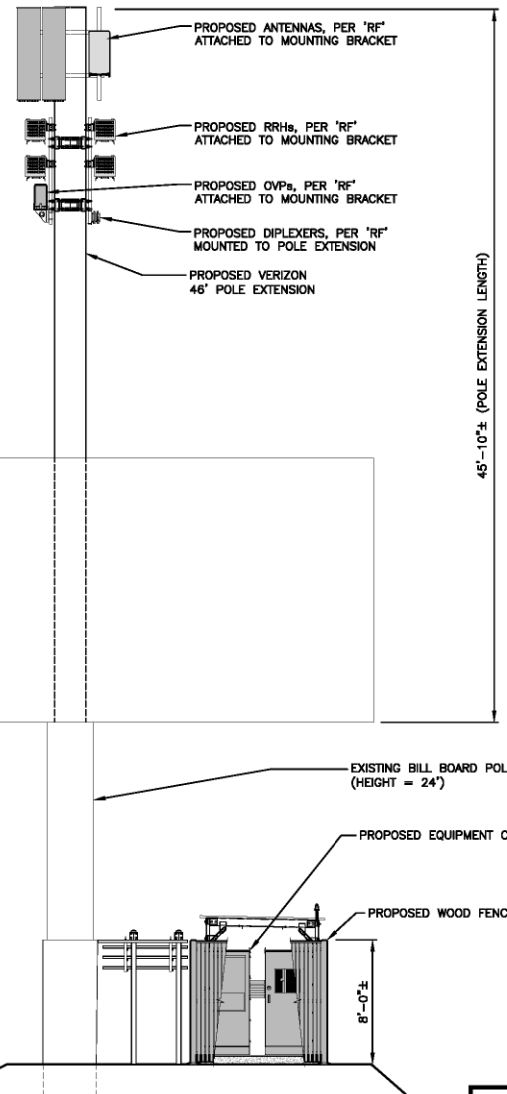
OF PROPOSED VERIZON ANTENNAS
ELEV. = 67'-0"± A.G.L.
ELEV. = 89'-0"± A.M.S.L.

TOP OF EXISTING BILL BOARD
ELEV. = 41'-0"± A.G.L.
ELEV. = 63'-0"± A.M.S.L.

TOP OF EXISTING BILL BOARD POLE
ELEV. = 24'-0"± A.G.L.
ELEV. = 46'-0"± A.M.S.L.

PROPOSED GRADE
ELEV. = 0.0'± A.G.L.
ELEV. = 22'-0"± A.M.S.L.

EXISTING GRADE
ELEV. = -3.0'± A.G.L.
ELEV. = 19'-0"± A.M.S.L.



EAST ELEVATION
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
GRAPHIC SCALE
0 2 4 8 12 FEET

NOTE:
AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY HUDSON DESIGN GROUP, LLC.
DATED: JUNE 30, 2022 (REV.4)

MOUNT ASSESSMENT NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC.
DATED: JUNE 30, 2022

NOTE TO GENERAL CONTRACTOR:
'RF' DESIGN AND EQUIPMENT IS BASED UPON
RFDS ISSUED BY VZW DATED: 4/06/2022 REV 3
THE CONTRACTOR OF RECORD SHALL CONTACT VZW PRIOR TO ANY AND ALL ORDERING/PURCHASING/INSTALLATION OF EQUIPMENT TO VERIFY THAT THE 'RF' LISTED IN THE DRAWING SET IS CURRENT AND UP TO DATE.

FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.

verizon

HUDSON
Design Group LLC

45 BEECHWOOD DRIVE TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 554-0384



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CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS				
REV.	DATE	DESCRIPTION	BY	
2	06/24/22	REV. ANTENNA MOUNT	SKY	
1	05/13/22	ADD KIT ANTENNAS	SKY	
0	07/18/21	ISSUED FOR CONSTRUCTION	SKY	

SITE NAME:
EAST HAVEN 5 CT

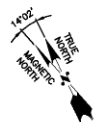
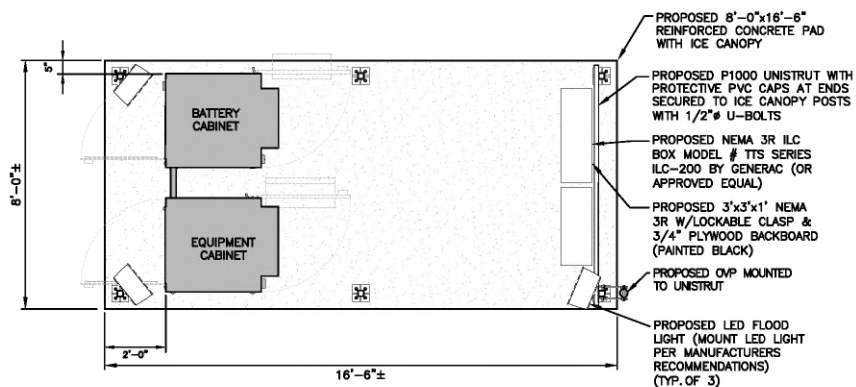
SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
ELEVATION

SHEET NUMBER
A-2

NOTE:

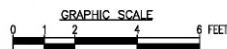
CONTRACTOR SHALL NOT INSTALL ANY HARDWARE/EQUIPMENT IN AND AROUND ANY WORKING AREAS THAT CREATE A TRIP HAZARD. E.O.R. SHALL BE NOTIFIED IF ANY EXISTING HARDWARE/EQUIPMENT CREATES A TRIP HAZARD PRIOR TO INSTALLATION.



EQUIPMENT PLAN

22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

1
A-3

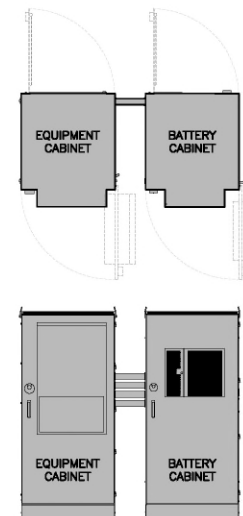


COOPER LIGHTING NFFLD NIGHT FALCON
NFFLD-A25-E-UNV-66-S-BK
SLIPFITTER MOUNT AND VANDAL SHIELD
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

LED FLOOD LIGHT DETAIL

SCALE: N.T.S.

3
A-3



DUAL CABINET DETAIL (EQUIPMENT & BATTERY)

SCALE: N.T.S.

2
A-3

SPECIFICATIONS:
MANUFACTURER: COMMScope
PART NO.: CMC74-36B
BATTERY CABINET
SIZE: 80.75"x36.2"x43.7"
WEIGHT: TBD LBS

SPECIFICATIONS:
MANUFACTURER: COMMScope
PART NO.: CMC74-36E
EQUIPMENT CABINET
SIZE: 80.75"x36.2"x43.7"
WEIGHT: TBD LBS

NOTE:
ANCHOR CABINET TO STEEL
PLATFORM PER MANUFACTURERS
RECOMMENDATIONS



INTERMATIC WP1220C

TYPE: DOUBLE GANG
HINGE: VERTICAL
INSERT: WP217
DEPTH: 2-1/4"
COLOR: CLEAR

OR APPROVED EQUIVALENT



INTERMATIC FF6H

TIME CYCLE: 6 HOURS
SWITCH: SPST
HOLD: NO

OR APPROVED EQUIVALENT

SWITCH DETAIL

SCALE: N.T.S.

4
A-3

FOR CONSTRUCTION

PREPARED FOR: CILICO PARTNERSHIP D.S.A.

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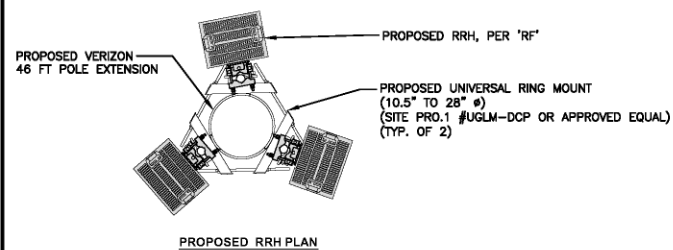
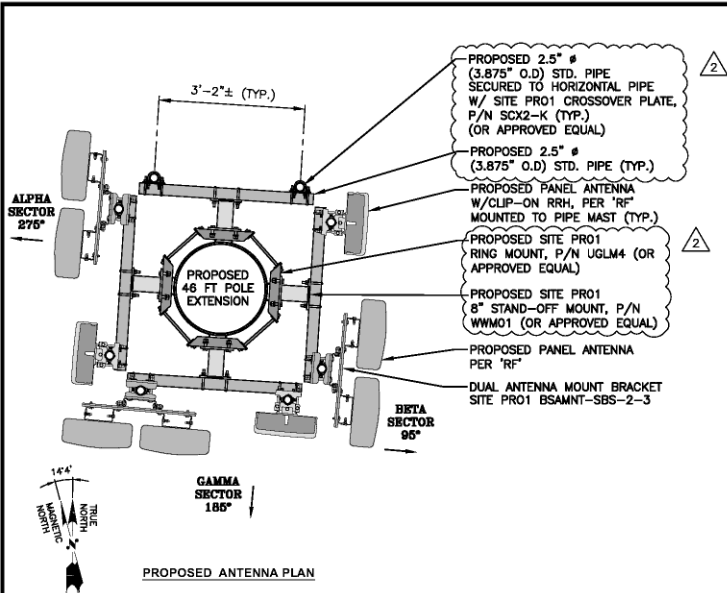
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0	07/16/21	ISSUED FOR CONSTRUCTION	SKY

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NORTH HAVEN, CT 06513

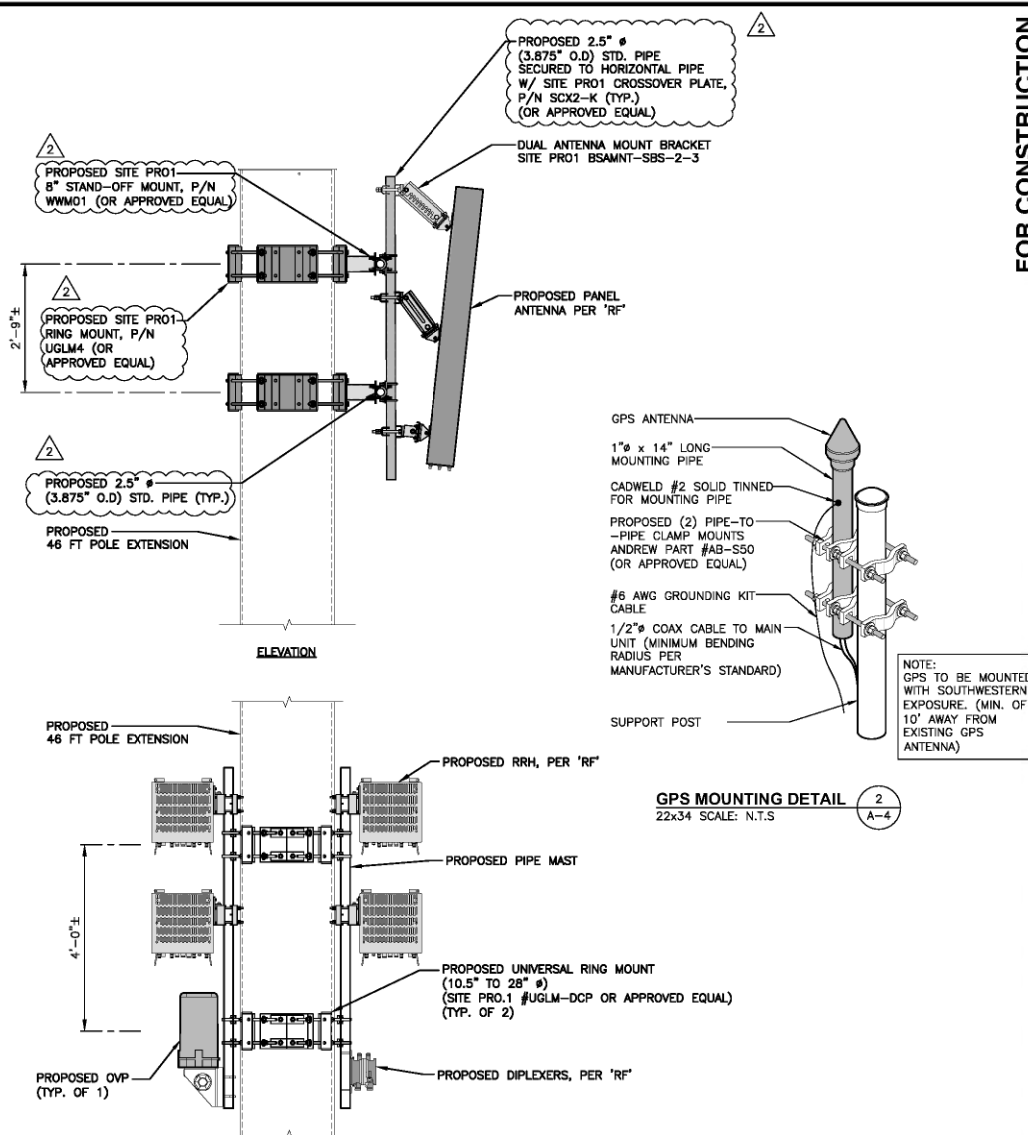
SHEET TITLE
EQUIPMENT PLAN
AND DETAILS

SHEET NUMBER
A-3



ANTENNA, RRH & OVP MOUNTING DETAILS
SCALE: N.T.S.

1
A-4



GPS MOUNTING DETAIL
22x34 SCALE: N.T.S.

2
A-4

FOR CONSTRUCTION

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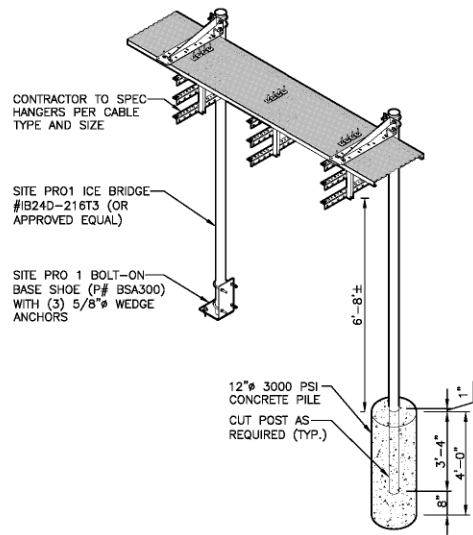
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EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

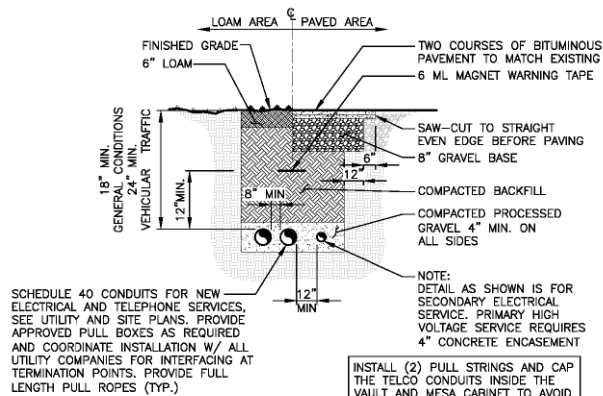
SHEET TITLE
ANTENNA PLAN
AND DETAILS

SHEET NUMBER
A-4



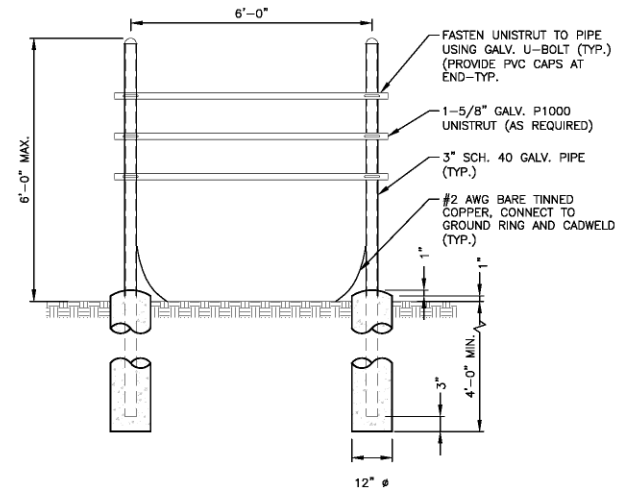
ICE BRIDGE DETAIL
SCALE: N.T.S

1
A-5



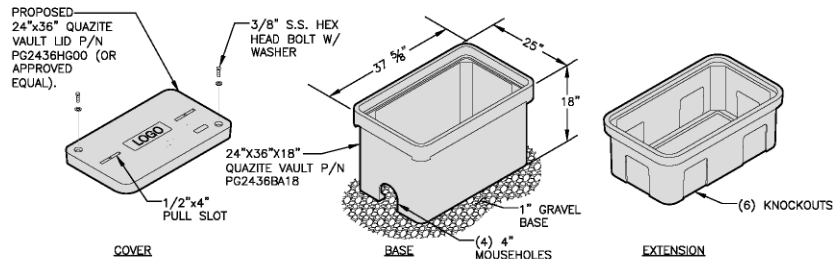
BURIED CONDUIT DETAIL
SCALE: N.T.S

2
A-5



H-FRAME DETAIL
SCALE: N.T.S

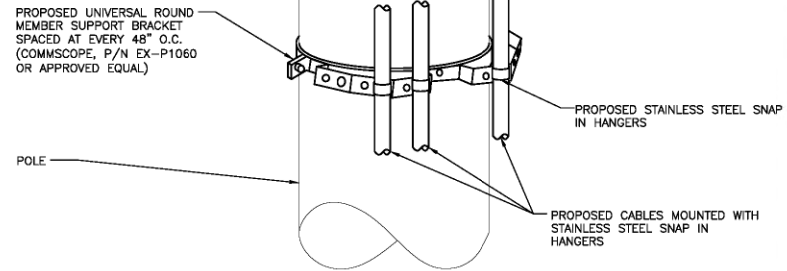
3
A-5



- NOTE:**
1. THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. SEE SPECIFICATION PROVIDED BY ELECTRICAL DESIGNER FOR FURTHER DETAIL AND INSTALLATION.
 2. PROVIDE STANDARD HANDHOLE. COVER COLOR SHALL BE AS SPECIFIED BY THE NIH.
 3. PROVIDE 25mm (1") X 10mm (3/8") BELL PULL SLOT FOR EACH HANDHOLE.
 4. COVER, RING AND BOX SHALL BE MADE OF SAME MATERIAL.
 5. PROVIDE IMPRINTED LOGO TO MATCH.

FOR TELCO AND POWER
HANDHOLE DETAIL
SCALE: N.T.S

4
A-5



- NOTES:**
1. UTILIZE COMMSCOPE KIT# EX-P1060 OR APPROVED EQUAL TO ATTACH BRACKET TO POLE.
 2. MOUNTS BRACKETS TO POLE EVERY 4 FT.

CABLE SUPPORT DETAIL AT TOWER LEG
SCALE: N.T.S

5
A-5

FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.

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0	07/10/21	ISSUED FOR CONSTRUCTION	SKY

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
CABLE SUPPORT DETAILS

SHEET NUMBER
A-5

FOR CONSTRUCTION

PREPARED FOR: CILICO PARTNERSHIP D.S.A.

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EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

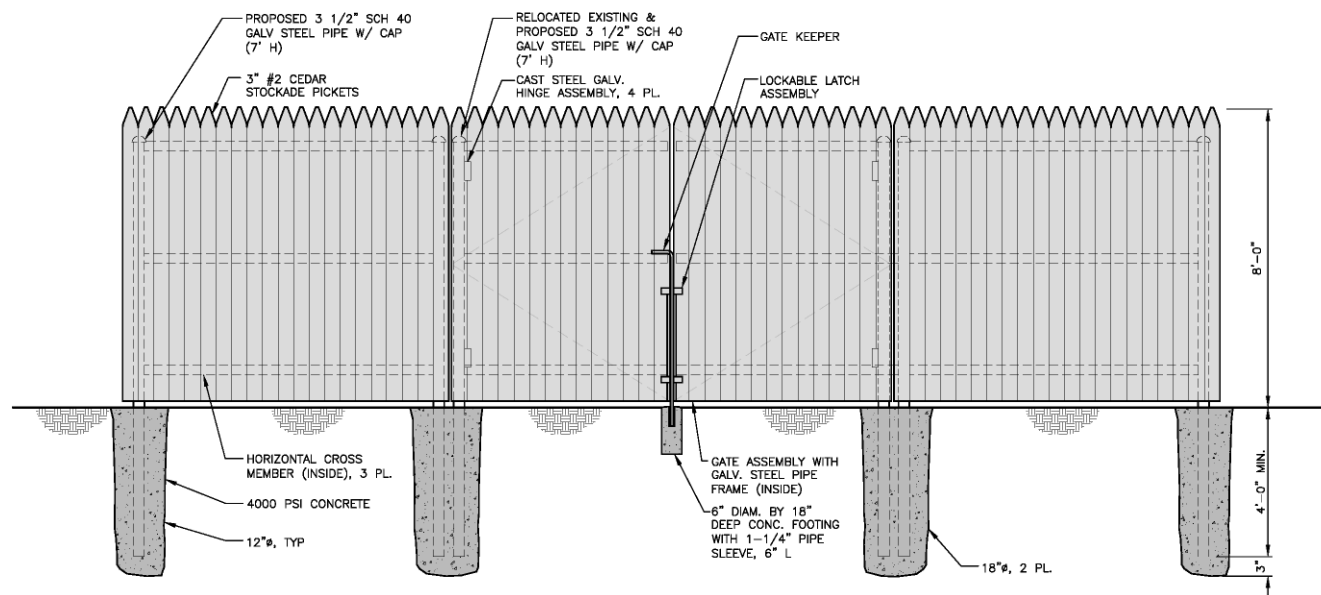
SHEET TITLE
FENCE DETAILS

SHEET NUMBER

A-6

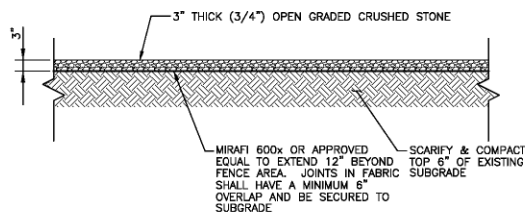
FENCE NOTES

1. ALTERNATE FOOTINGS FOR ALL FENCE POSTS IN LEDGE: IF LEDGE IS ENCOUNTERED AT GRADE, OR AT A DEPTH SHALLOWER THAN 3'-6", CORE DRILL AN 8" DIA HOLE 18" INTO THE LEDGE. CENTER POST IN THE HOLE AND FILL WITH CONCRETE OR GROUT. IF LEDGE IS BELOW FINISH GRADE, COAT BACKFILLED SECTION OF POST WITH COAL TAR, AND BACKFILL WITH WELL-DRAINING GRAVEL.
2. ATTACH EACH GATE WITH 1-1/2 PAIR OF NON-LIFT-OFF TYPE, MALLEABLE IRON OR FORGING, PIN-TYPE HINGES. ASSEMBLIES SHALL ALLOW FOR 180° OF GATE TRAVEL.

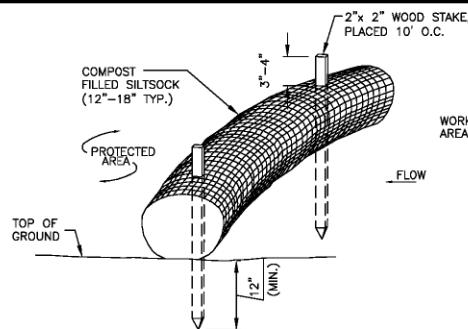


STOCKADE FENCE DETAIL
SCALE: N.T.S.

1
A-6



COMPOUND SURFACE DETAIL 1
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0" A-7



NOTES:

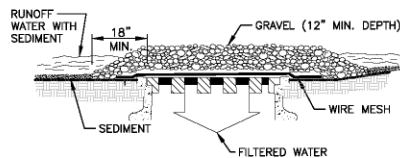
1. SILT SOCK SHALL BE FILTREXX SILT SOCK, OR APPROVED EQUAL.
2. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. SEE SPECIFICATIONS FOR SOCK SIZE, AND COMPOST FILL, REQUIREMENTS.

SILT SOCK DETAIL 2
SCALE: N.T.S. A-7

GENERAL CONSTRUCTION SEQUENCE:

THIS IS A GENERAL CONSTRUCTION SEQUENCE OUTLINE SOME ITEMS OF WHICH MAY NOT APPLY TO PARTICULAR SITES.

- 1) CLEAR AND GRUB AREAS OF PROPOSED CONSTRUCTION.
- 2) INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AS REQUIRED.
- 3) REMOVE AND STOCKPILE TOPSOIL. STOCKPILE SHALL BE SEEDED TO PREVENT EROSION.
- 4) CONSTRUCT CLOSED DRAINAGE SYSTEM. PROTECT CULVERT INLETS AND CATCH BASINS WITH SEDIMENTATION BARRIERS.
- 5) CONSTRUCT ROADWAYS AND PERFORM SITE GRADING, PLACING HAY BALES AND SILTATION FENCES AS REQUIRED TO CONTROL SOIL EROSION.
- 6) INSTALL UNDERGROUND UTILITIES.
- 7) BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION. NO AREA SHALL BE LEFT UNSTABILIZED FOR A TIME PERIOD OF MORE THAN 30 DAYS.
- 8) DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING.
- 9) BEGIN EXCAVATION FOR AND CONSTRUCTION OF TOWERS AND PLATFORMS.
- 10) FINISH PAVING ALL ROADWAYS, DRIVES, AND PARKING AREAS.
- 11) COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- 12) NO STORM WATER FLOW SHALL BE DIVERTED TO ANY WETLANDS UNTIL A HEALTHY STAND OF GRASS HAS BEEN ESTABLISHED IN REGRADED AREAS.
- 13) AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.



CONSTRUCTION SEQUENCE:

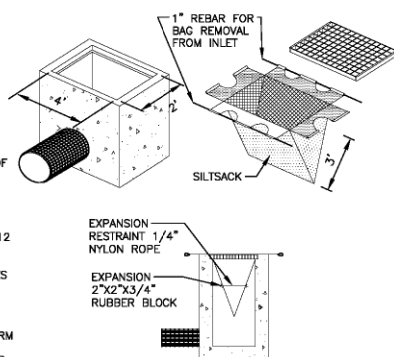
1. A WIRE MESH SHOULD BE PLACED OVER THE DROP INLET OR CURB OPENING SO THAT THE ENTIRE OPENING AND A MINIMUM OF 12 INCHES AROUND THE OPENING ARE COVERED BY THE MESH. THE MESH MAY BE ORDINARY HARDWARE CLOTH OR WIRE MESH WITH OPENINGS UP TO 1/2 INCH.

2. THE WIRE MESH SHOULD BE COVERED WITH CLEAN COARSE AGGREGATE SUCH AS SEWER STONE FOR A MINIMUM DEPTH OF 12 INCHES.

3) THE COARSE AGGREGATE SHOULD EXTEND AT LEAST 18 INCHES ON ALL SIDES OF THE DRAIN OPENING.

MAINTENANCE:

ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM THE TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.



NOTE: REGULAR FLOW = 40 GAL./MIN./SF.
HIGH = 200 GAL./MIN./SF.

SILTSACK DETAIL - ON OR OFF SITE

STONE INLET PROTECTION DETAIL-ON SITE 3
SCALE: N.T.S. A-7

EROSION CONTROL MEASURES:

- 1) DISTURBED AREAS SHALL BE KEPT TO THE MINIMUM AREA NECESSARY TO CONSTRUCT THE ROADWAYS AND ASSOCIATED DRAINAGE FACILITIES.
- 2) HAY BALE BARRIERS AND SEDIMENT TRAPS SHALL BE INSTALLED AS REQUIRED. BARRIERS AND TRAPS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
- 3) BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
- 4) FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
- 5) STOCKPILED MATERIALS SHALL BE PLACED IN AREAS SHOWN ON THE PLANS. STOCKPILES SHALL BE PROTECTED BY SILTATION FENCE AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.
- 6) ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA.
- 7) APPLICATION OF GRASS SEED, FERTILIZERS AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED BELOW:

LIMESTONE: 75-100 LBS./1,000 SQUARE FEET.
FERTILIZER: RATE RECOMMENDED BY MANUFACTURER.
MULCH: HAY MULCH APPROXIMATELY 3 TONS/ACRE UNLESS EROSION CONTROL MATTING IS USED.

SEED MIX (SLOPES LESS THAN 4:1)	LBS./ACRE
CREeping RED FESCUE	20
TALL FESCUE	20
REDTOP	2
	42

SLOPE MIX (SLOPES GREATER THAN 4:1)	LBS./ACRE
CREeping RED FESCUE	20
TALL FESCUE	20
BIRDSFOOT TREFOIL	8
	48

TREATMENT SWALE PLANTING SPECIFICATIONS

TALL FESCUE	20 LBS/ACRE	OR	0.45 LBS/10,000 SF
CREeping RED FESCUE	20 LBS/ACRE	OR	0.45 LBS/10,000 SF
BIRDSFOOT TREFOIL	8 LBS/ACRE	OR	0.20 LBS/10,000 SF

LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT TIME OF SEEDING AND INCORPORATED INTO THE SOIL. THE FOLLOWING RATES ARE RECOMMENDED:

AGRICULTURAL LIMESTONE	2 TONS/ACRE	OR	100 LBS/1,000 SF
NITROGEN (N)	50 LBS/ACRE	OR	1.1 LBS/10,000 SF
PHOSPHATE (P205)	100 LBS/ACRE	OR	2.2 LBS/10,000 SF
POTASH (K2O)	100 LBS/ACRE	OR	2.2 LBS/10,000 SF

(THIS IS EQUIVALENT TO 500 LBS/ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS/ACRE OF 5-10-10).

- 8) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.
- 9) PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
- 10) ALL CATCH BASIN INLETS WILL BE PROTECTED WITH LOW POINT SEDIMENTATION BARRIER.
- 11) ALL STORM DRAINAGE OUTLETS WILL BE STABILIZE AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
- 12) ALL DOWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
- 13) NO DISCHARGE SHALL BE DIRECTED TOWARDS ANY PROPOSED DITCHES, SWALES, OR PONDS UNTIL THEY HAVE BEEN PROPERLY STABILIZED.

FOR CONSTRUCTION

PREPARED FOR: CILICO PARTNERSHIP D.S.A.

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HUDSON
Design Group LLC

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N. ANDOVER, MA 01845 FAX: (978) 554-0384



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CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	06/24/22	REV. ANTENNA MOUNT	SKY
2	06/13/22	ADDED KIT ANTENNAS	SKY
3	07/16/21	ISSUED FOR CONSTRUCTION	SKY

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
**SITE SURFACE
COVER AND EROSION
CONTROL DETAILS**

SHEET NUMBER
A-7

STRUCTURAL NOTES:

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/71A--222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 ($F_y=50$ ksi). MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UN.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-70 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST**BEFORE CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
REQUIRED	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS ³

ADDITIONAL TESTING AND INSPECTIONS:

DURING CONSTRUCTION

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
REQUIRED	FOUNDATION INSPECTIONS
REQUIRED	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
REQUIRED	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

AFTER CONSTRUCTION

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:

NOTES:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4" A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

FOR CONSTRUCTION

PREPARED FOR: CRILCO PARTNERSHIP D.B.A.

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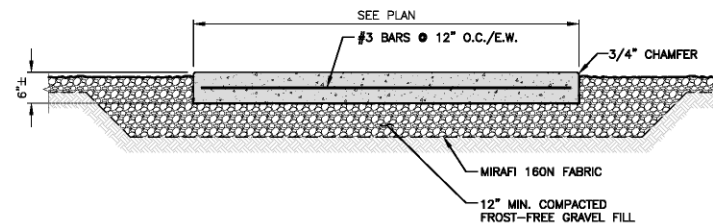
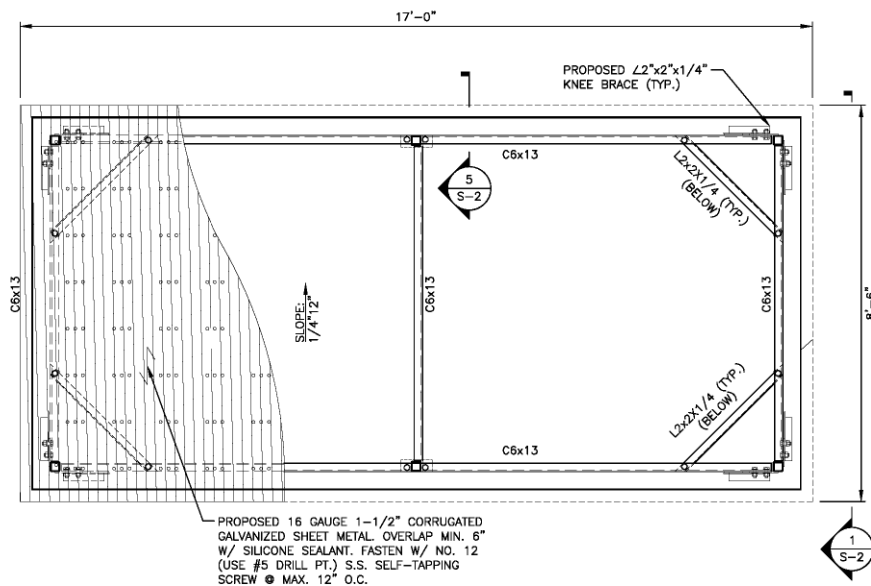
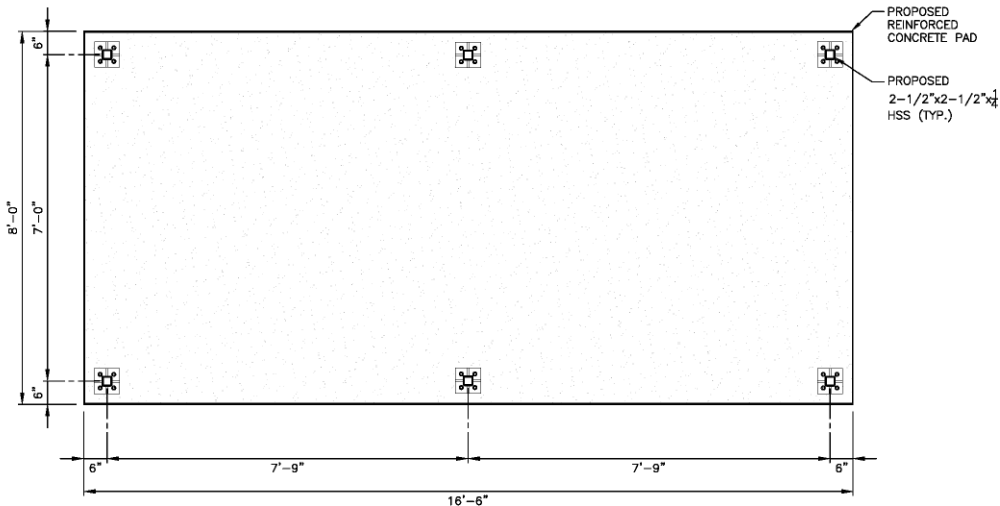
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SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/24/22	REV. ANTENNA MOUNT	SV
1	05/13/22	ADD'D N77 ANTENNAS	SV
0	07/19/21	ISSUED FOR CONSTRUCTION	SV

SITE NAME:
EAST HAVEN 5 CTSITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513SHEET TITLE
STRUCTURAL NOTES
AND SPECIAL
INSPECTIONSSHEET NUMBER
SN-1



CONCRETE PAD DETAIL

SCALE: N.T.S.

3 S-1

FOUNDATION NOTES & CONCRETE SPECIFICATIONS:

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

FOR CONSTRUCTION

PREPARED FOR: CILICO PARTNERSHIP D.S.A.

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SUBMITTALS

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1	06/13/22	ADDED KIT ANTENNAS	SKT
0	07/19/21	ISSUED FOR CONSTRUCTION	SKT

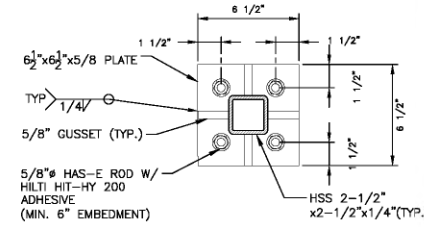
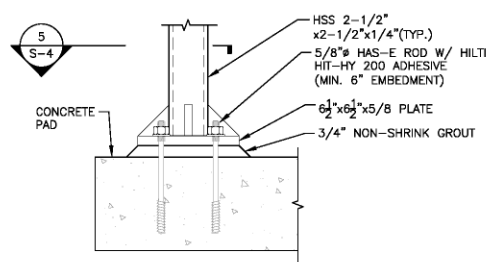
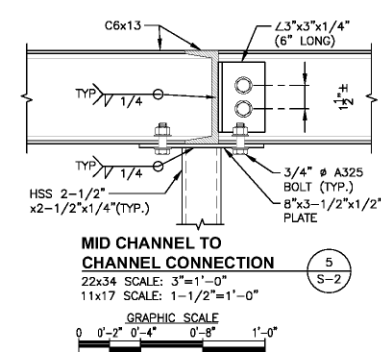
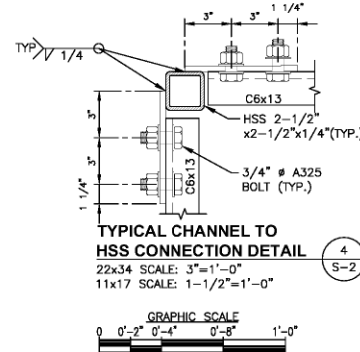
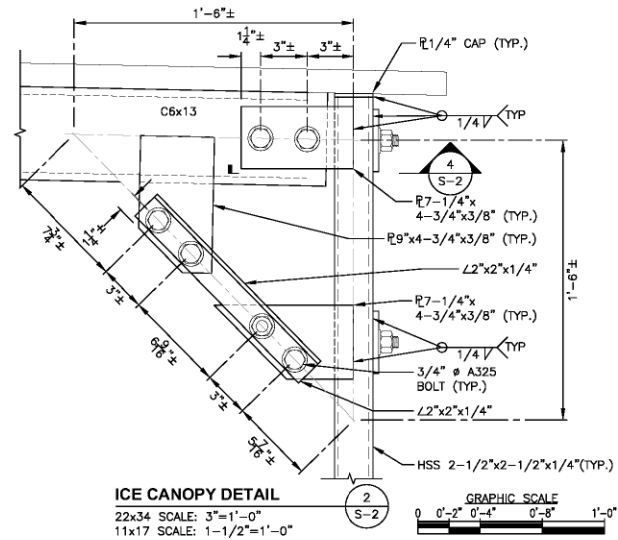
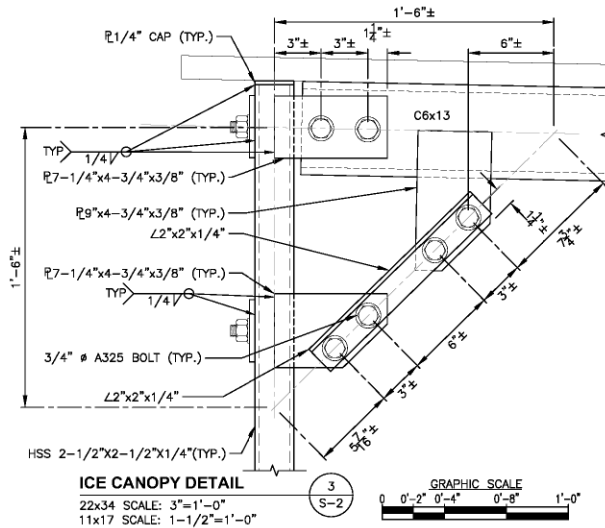
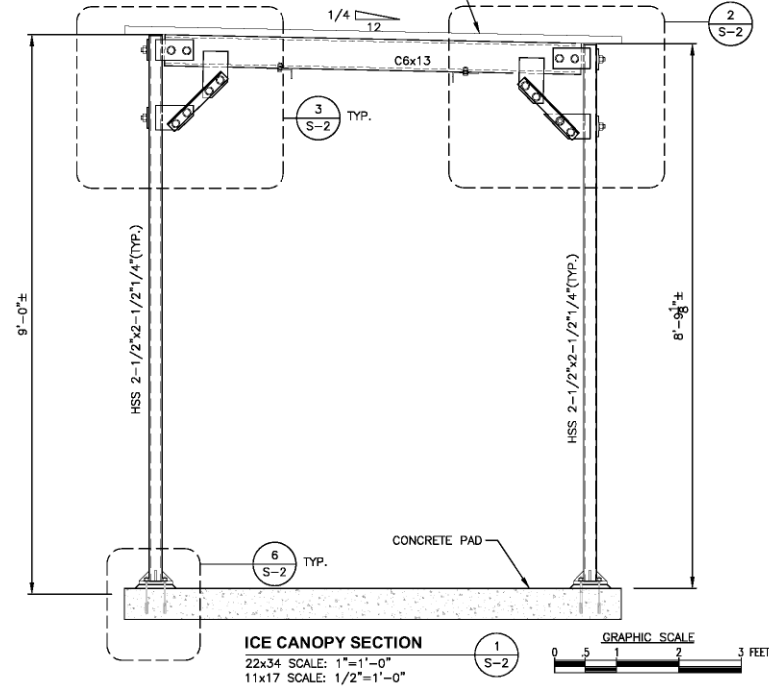
SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NORTH HAVEN, CT 06513

SHEET TITLE
ICE CANOPY
DETAILS

SHEET NUMBER
S-1

PROPOSED 16 GAUGE 1-1/2" CORRUGATED GALVANIZED SHEET METAL OVERLAP MIN. 6" W/ SILICONE SEALANT. FASTEN W/ NO. 12 (USE #5 DRILL PT.) S.S. SELF-TAPPING SCREW @ MAX. 12" O.C.



FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.

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APPROVED BY: DPH

SUBMITTALS			
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2	06/24/22	REV. ANTENNA MOUNT	SKT
1	06/13/22	ADD N77 ANTENNAS	SKT
0	07/19/21	ISSUED FOR CONSTRUCTION	SKT

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NORTH HAVEN, CT 06513

SHEET TITLE
ICE CANOPY DETAILS

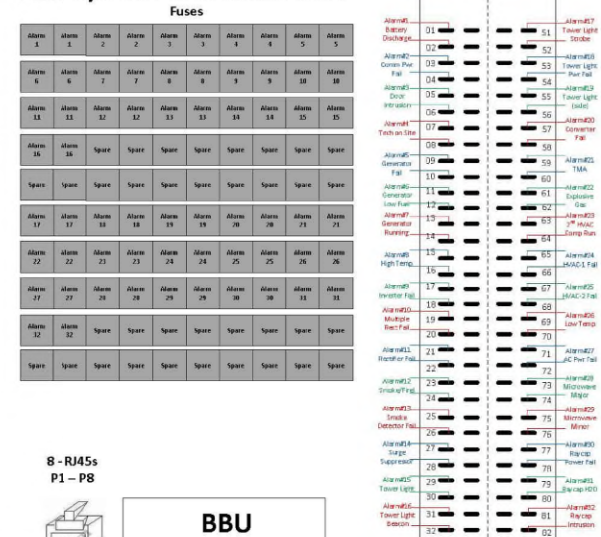
SHEET NUMBER
S-2

GENERAL NOTES
ELECTRICAL 1. ALL CONDUCTORS SHALL BE COPPER. 2. ALL WIRING DEVICES AND EQUIPMENT SHALL BE SPECIFICATION GRADE AND UL LISTED. 3. ALL UNDERGROUND LINES ON SITE SHALL BE LOCATED PRIOR TO CONSTRUCTION (IF APPLICABLE). 4. THE INSTALLATION OF ALL MATERIALS SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE. 5. ALL MATERIALS SHALL BE NEW. 6. OUTLETS AND JUNCTION BOXES SHALL BE ZINC-COATED OR CADMIUM PLATED SHEET STEEL BOXES NOT LESS THAN FOUR INCHES SQUARE AND SUITABLE FOR THE TYPE OF SERVICE OUTLET. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED. 7. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDED USING COMPRESSION-TYPE CONDUIT FITTINGS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTORS. CRIMP-TYPE AND SET SCREW-TYPE CONDUIT FITTINGS ARE NOT ALLOWED. ALL RECEPTACLES AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL-SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS. 8. ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE RIGID STEEL SLEEVES. 9. ALL SWITCHES SHALL BE 48 INCHES A.F.F. 10. ALL RECEPTACLES SHALL BE 18 INCHES A.F.F. 11. ALL T-STATS SHALL BE 60 INCHES A.F.F. CABLE TRAY 1. BOTTOM OF CABLE TRAY SHALL BE 7'-6" A.F.F. 2. CABLE TRAY ANCHORS SHALL BE MOUNTED TO STRUCTURAL CEILING. 3. AFTER FINAL LEVELING OF CABLE TRAY, CUT THREADED RODS 1/2" BELOW NUT AND CAP OFF. ALARM AND SIGNAL 1. ALL ALARM WIRES SHALL BE RUN FROM EACH OF THE COMPONENTS TERMINAL STRIP. LEAVE ADDITIONAL ALARM WIRE COILED WITH SUFFICIENT LENGTH TO REACH THE FLOOR. 2. ALL ALARM WIRES SHALL BE TAGGED AND LABELED WITH THE APPROPRIATE ALARM ITEM. ALL CONTRACTORS WILL BE NORMALLY CLOSED, DRY, AND ISOLATED FROM GROUND, U.O.N. 3. ALL ALARM WIRING SHALL BE 1/2" C., (2)#22 AWG, UNLESS OTHERWISE NOTED. 4. ELECTRICAL CONTRACTOR TO CARRY POWER FEED OF LESSEE'S MOD CELL EQUIPMENT. 5. ALL ENCLOSURES TO BE NEMA. 6. INTEGRATED LOAD CENTER ASSEMBLY SUPPLIED BY LESSEE.
ELECTRICAL NOTES
1. UTILITY SERVICES SHOWN ARE PROPOSED. THE ELECTRIC CONTRACTOR SHALL COORDINATE EXACT TELEPHONE AND ELECTRIC SERVICE CONNECTION POINTS, PULL BOXES, ROUTING AND ASSOCIATED REQUIREMENTS WITH OWNER AND LOCAL UTILITY CO. 2. VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED. REPORT ADVERSE CONDITIONS IN WRITING TO LICENSEE. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS INCLUDING PREPARATORY WORK DONE BY OTHERS. 3. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION. 4. PERFORM WORK AS REQUIRED BY BOCA AND PER LOCAL LAWS. 5. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH OWNER AND FIELD CONSTRUCTION MANAGER. 6. ALL EXTERIOR WALL PENETRATIONS SHALL BE SILICONE SEALED. 7. MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE. INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE. 8. ALL ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C. 9. ALL NEW WIRING SHALL BE TYPE THWN RATED 75°C., 600 VOLT. WET OR DRY LOCATIONS. MINIMUM BRANCH CIRCUIT WIRING SHALL BE #12 AWG SOLID COPPER. 10. ALL METALLIC CONDUITS SHALL BE PROVIDED WITH BONDING BUSHINGS. 11. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO THE LICENSEE PROJECT MANAGER AT JOB COMPLETION. 12. PROVIDE THE OWNER WITH ONE SET OF COMPLETE ELECTRICAL "AS BUILT" DRAWINGS AT THE COMPLETION OF THE JOB. 13. GUARANTEE WORK IN WRITING FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER. 14. CONTRACTOR SHALL CONTACT "DIG SAFE" (1-888-DIG-SAFE) PRIOR TO COMMENCEMENT OF WORK.

ABBREVIATIONS
A AMPERES AC ALTERNATING CURRENT ADA AMERICANS WITH DISABILITIES ACT AFF ABOVE FINISH FLOOR AGB COPPER ANTENNA GROUND BAR AIC AMPERE INTERRUPTING CAPACITY AWG AMERICAN WIRE GAUGE BCW BARE COPPER WIRE BTS BASE TRANSMISSION SYSTEM C CONDUIT C/B CIRCUIT BREAKER CIGBE COAX INSULATED GROUND BAR EXTERNAL DC DIRECT CURRENT DWG DRAWING EMT ELECTRICAL METALLIC TUBING FACP FIRE ALARM CONTROL PANEL G GROUND GEN GENERATOR GPS GLOBAL POSITIONING SYSTEM GR GROWTH HVAC HEATING VENTILATION AND AIR-CONDITIONING IEEE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS IGR INTERNAL GROUND RING (HALO) kcmil ONE THOUSAND CIRCULAR MILS LAGB LOWER ANTENNA COPPER GROUND BAR MIGB MASTER ISOLATED GROUND BAR NEC NATIONAL ELECTRIC CODE NEMA NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION PCS PERSONAL COMMUNICATION SYSTEM PH PHASE PPC POWER PROTECTION CABINET PRC PRIMARY RADIO CABINET RCS RIGID GALVANIZED STEEL RWY RACEWAY TYP TYPICAL UAGB UPPER ANTENNA COPPER GROUND UL UNDERWRITERS LABORATORIES UN UNLESS OTHERWISE NOTED V VOLTS VA VOLT-AMPS W WATTS

PANEL NAME: PROPOSED AC PANEL											
16, 3W 120/240V, 200A						MOUNTING: SURFACE MANUFACTURER: T.B.D.					
CKT NO	BREAKER AMPS	POLES	LOAD DESCRIPTION	LOAD kVA	BRANCH CKT	CKT NO	BREAKER AMPS	POLES	LOAD DESCRIPTION	LOAD kVA	BRANCH CKT
1	40	2	SURGE	9.6	3#8, 1#8G, 1" C	2	40	2	RECTIFIER #5	9.6	3#8, 1#8G, 1" C
3						4					
5	40	2	RECTIFIER #1	9.6	3#8, 1#8G, 1" C	6	40	2	RECTIFIER #6	9.6	3#8, 1#8G, 1" C
7						8					
9	40	2	RECTIFIER #2	9.6	3#8, 1#8G, 1" C	10	40	2	RECTIFIER #7	9.6	3#8, 1#8G, 1" C
11						12					
13	40	2	RECTIFIER #3	9.6	3#8, 1#8G, 1" C	14	40	2	RECTIFIER #8	9.6	3#8, 1#8G, 1" C
15						16					
17	40	2	RECTIFIER #4	9.6	3#8, 1#8G, 1" C	18	20	1	EQUIPMENT CABINET	2.4	2#12, 1#8G, 3/4" C
19						20	20	1	TELCO/TWISTLOCK	2.4	2#12, 1#8G, 3/4" C
21	1		SPARE			22	20	1	LIGHTING	2.4	2#12, 1#8G, 3/4" C
23	1		SPARE			24	1		SPARE		

Wiring Diagram for
Porta Systems Block Model 899A



ALARM DETAIL
SCALE: N.T.S

FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.



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APPROVED BY: DPH

SUBMITTALS

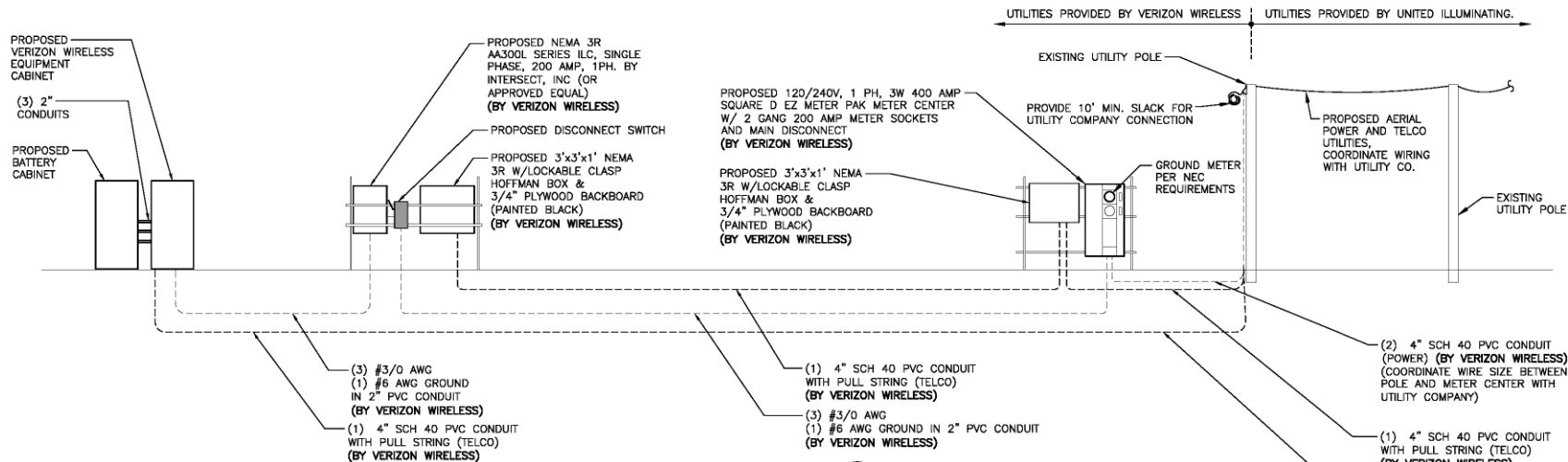
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1	06/13/22	ADD N77 ANTENNAS	SKT
0	07/16/21	ISSUED FOR CONSTRUCTION	SKT

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
ELECTRICAL NOTES
& WIRING DIAGRAM

SHEET NUMBER
E-1



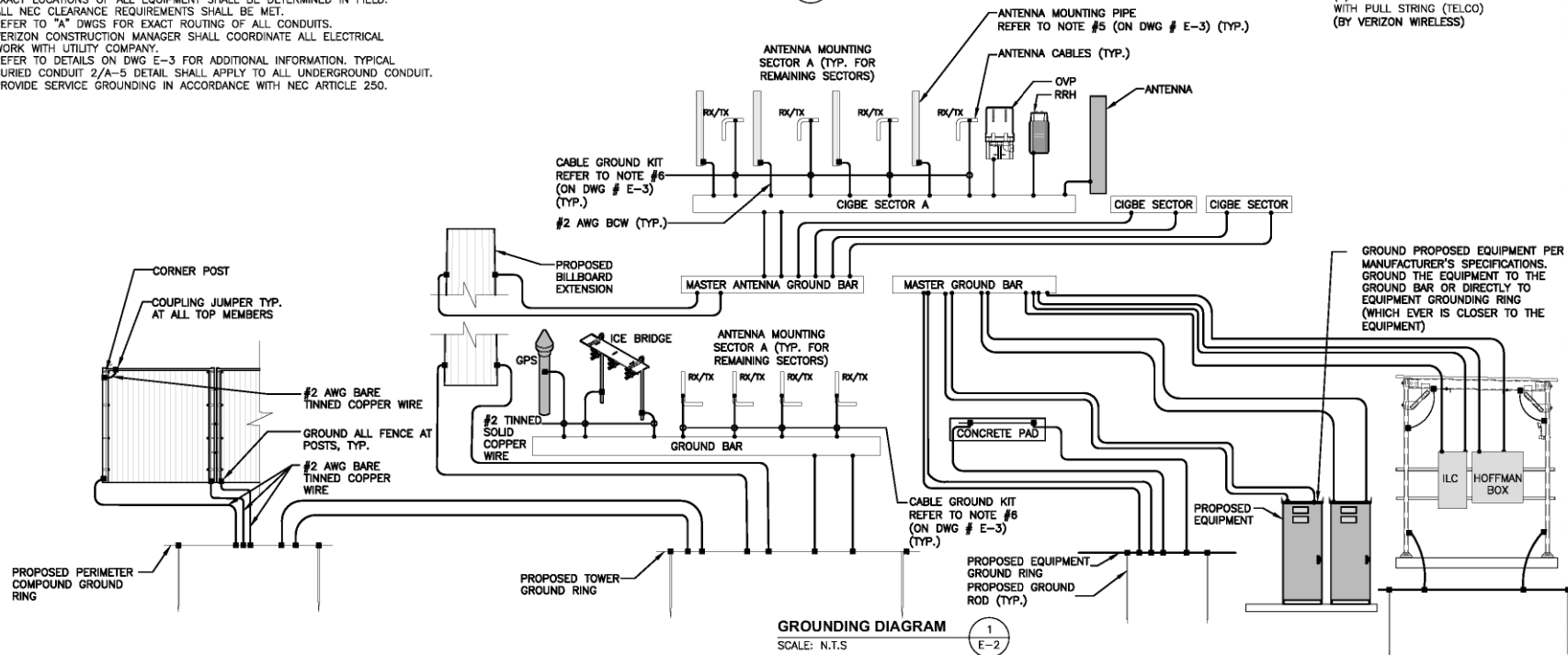
NOTES:

1. EXACT LOCATIONS OF ALL EQUIPMENT SHALL BE DETERMINED IN FIELD. ALL NEC CLEARANCE REQUIREMENTS SHALL BE MET.
2. REFER TO "A" DWGS FOR EXACT ROUTING OF ALL CONDUITS.
3. VERIZON CONSTRUCTION MANAGER SHALL COORDINATE ALL ELECTRICAL WORK WITH UTILITY COMPANY.
4. REFER TO DETAILS ON DWG E-3 FOR ADDITIONAL INFORMATION. TYPICAL BURIED CONDUIT 2/A-5 DETAIL SHALL APPLY TO ALL UNDERGROUND CONDUIT.
5. PROVIDE SERVICE GROUNDING IN ACCORDANCE WITH NEC ARTICLE 250.

ELECTRICAL/TELCO ONE-LINE DIAGRAM

SCALE: N.T.S

1
E-2



FOR CONSTRUCTION

PREPARED FOR: CILCO PARTNERSHIP D.S.A.

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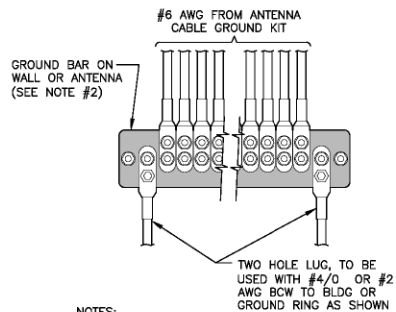
REV.	DATE	DESCRIPTION	BY
2	06/24/22	REV. ANTENNA MOUNT	SKT
1	06/13/22	ADDED KIT ANTENNAS	SKT
0	07/18/21	ISSUED FOR CONSTRUCTION	SKT

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

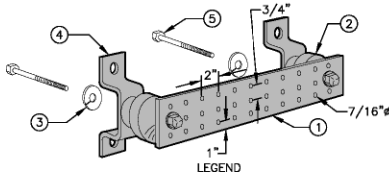
SHEET TITLE
GROUNDING
RISER DIAGRAM

SHEET NUMBER
E-2



NOTES:

- CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS.
- ALL GROUND BARS SHALL BE GALVANIZED WITH ANTI-THEFT HARDWARE.



- GALVANIZED STEEL GROUND BAR, 1/4"x4"x20", OR OTHER LENGTH AS REQUIRED, HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR EQUAL.
- 5/8" LOCKWASHERS OR EQUAL.
- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-8056 OR EQUAL.
- 5/8-11 x 1" H.C.S. BOLTS

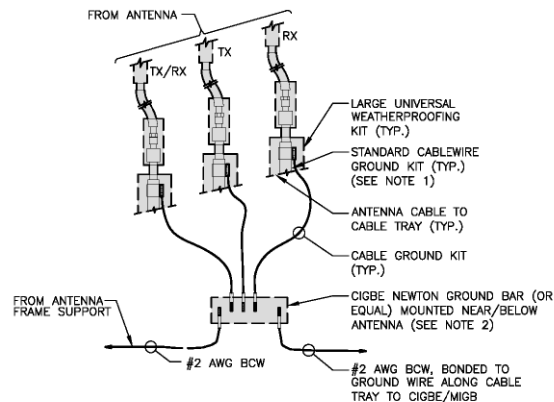
NOTES:

- ALL BOLTS, NUTS, WASHERS, AND LOCK WASHERS SHALL BE 18-8 STAINLESS STEEL.
- ALL GROUND BARS SHALL BE GALVANIZED WITH ANTI-THEFT HARDWARE.

GROUNDING - STANDARD DETAIL GROUND BAR

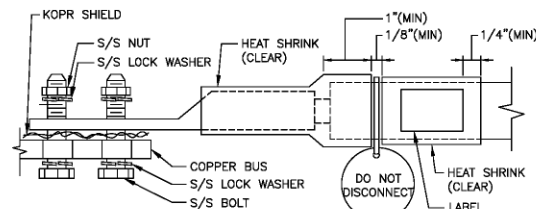
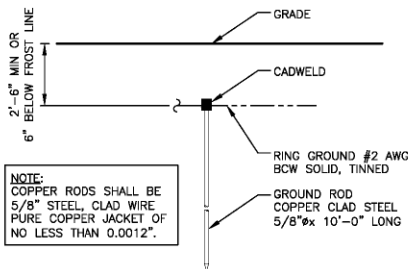
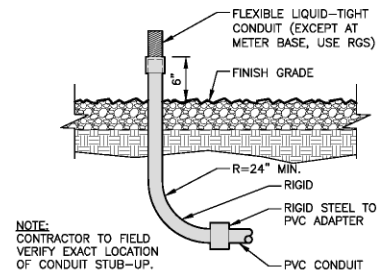
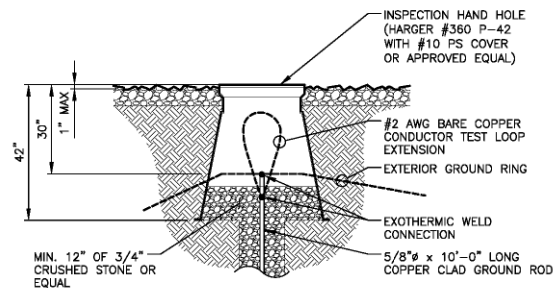
SCALE: N.T.S

2
E-4



NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.
- ALL GROUND BARS SHALL BE GALVANIZED WITH ANTI-THEFT HARDWARE.



NOTES:

- ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
- CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.

FOR CONSTRUCTION

PREPARED FOR: CILICO PARTNERSHIP D.S.A.

verizon

HG
HUDSON
Design Group LLC

45 BEECHWOOD DRIVE TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 554-0584



CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/24/22	REV. ANTENNA MOUNT	SKT
1	06/13/22	ADDED KIT ANTENNAS	SKT
0	07/19/21	ISSUED FOR CONSTRUCTION	SKT

SITE NAME:
EAST HAVEN 5 CT

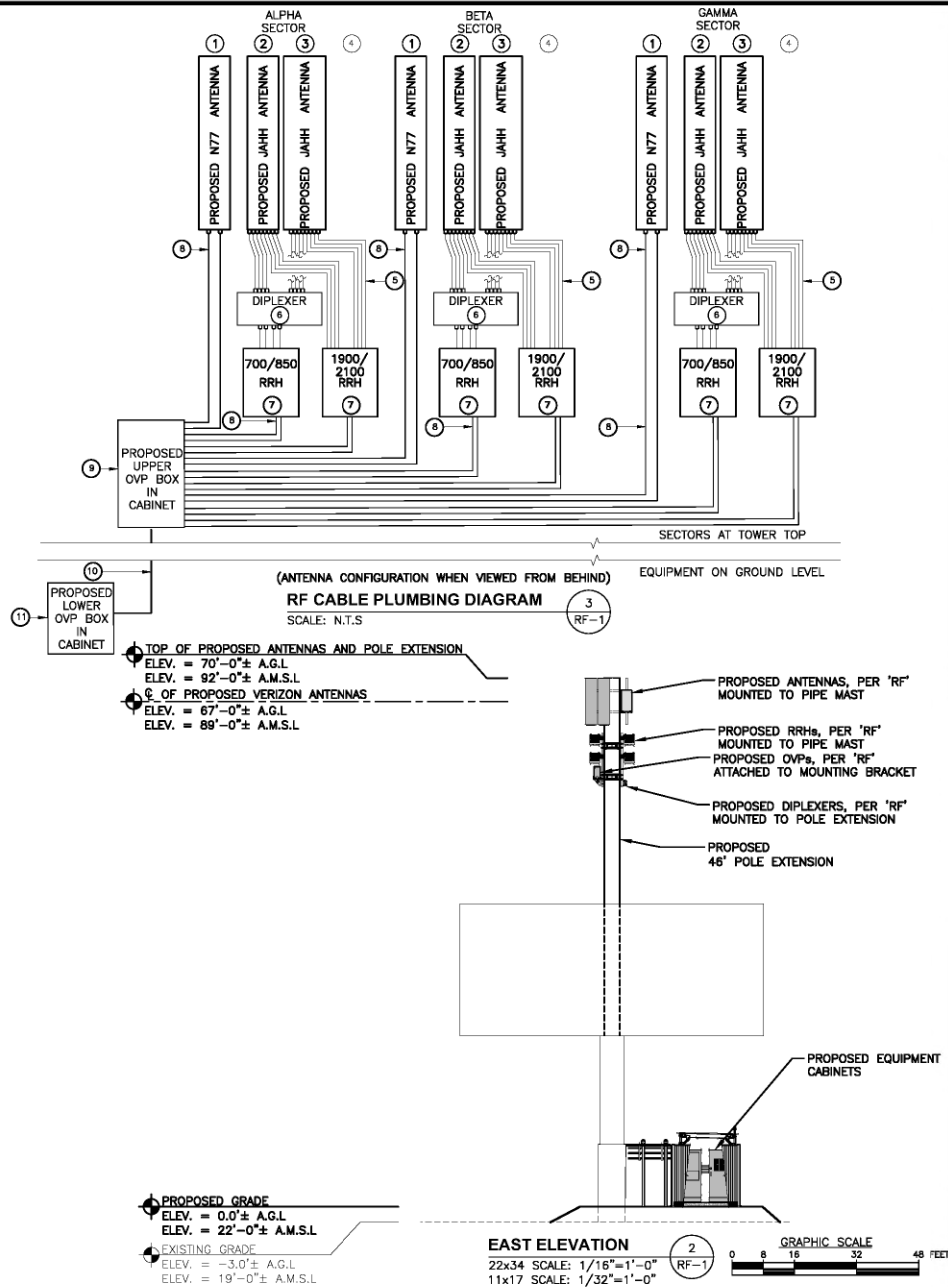
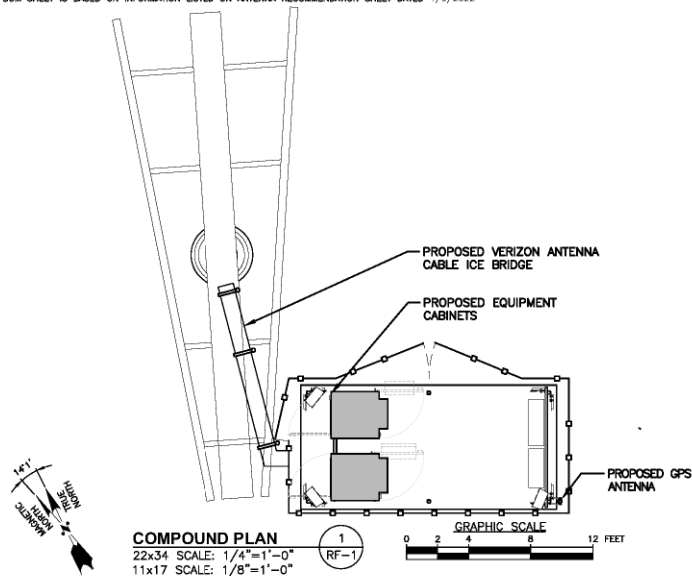
SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
GROUNDING
DETAILS

SHEET NUMBER
E-4

BILL OF MATERIALS				
SITE NAME: EAST HAVEN 5 CT				
ITEM	DESCRIPTION	QTY	LENGTH	COMMENTS
①	PROPOSED MT6407-77A ANTENNA W/CLIP-ON RRH	3		MOUNTED TO SECTOR FRAME
②	PROPOSED JAHH-45B-R3B ANTENNA	3		MOUNTED TO SECTOR FRAME
③	PROPOSED JAHH-45B-R3B ANTENNA	3		MOUNTED TO SECTOR FRAME
④				
⑤	PROPOSED 1/2" TOP COAX JUMPERS	20	6 FT.	ROUTE FROM RRH OR DIPLEXER TO ANTENNA
⑤	PROPOSED 1/2" TOP COAX JUMPERS	20	6 FT.	ROUTE FROM RRH OR DIPLEXER TO ANTENNA
⑤	PROPOSED 1/2" TOP COAX JUMPERS	20	6 FT.	ROUTE FROM RRH OR DIPLEXER TO ANTENNA
⑥	PROPOSED DIPLEXER CBC78T-DS-43-2X	3		MOUNTED PIPE MAST
⑦	PROPOSED LTE 700/850 RRH	3		SAMSUNG RRH B5/B13 RRH-BR04C PIPE MOUNTED
⑦	PROPOSED PCS/AWS 1900/2100 RRH	3		SAMSUNG RRH B2/B66A RRH-BR049 PIPE MOUNTED
⑦				
⑧	PROPOSED SAMSUNG FIBER JUMPER CABLES	9	15 FT.	ROUTE FROM OVP TO RRH
⑧	PROPOSED SAMSUNG POWER JUMPER CABLES	9	15 FT.	ROUTE FROM OVP TO RRH
⑨	PROPOSED UPPER OVP	1		MOUNTED TO PIPE MAST
⑩	PROPOSED 12X24 HYBRID CABLE	1	110 FT.	ROUTE FROM EQUIPMENT TO ANTENNA SECTOR
⑪	PROPOSED LOWER OVP	1		RACK MOUNTED INSIDE CABINET

THE ABOVE RF-BOM SHEET IS BASED ON INFORMATION LISTED ON ANTENNA RECOMMENDATION SHEET DATED 4/6/2022



PREPARED FOR: CILCO PARTNERSHIP D.S.A.

verizon

HG
HUDSON
Design Group LLC

45 BEECHWOOD DRIVE TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 556-0384

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	07/19/21	ISSUED FOR CONSTRUCTION	SLY

SITE NAME:
EAST HAVEN 5 CT

SITE ADDRESS:
115 MEADOW ROAD
NEW HAVEN, CT 06513

SHEET TITLE
RF PLUMBING
DIAGRAM AND BILL
OF MATERIALS

SHEET NUMBER
RF-1

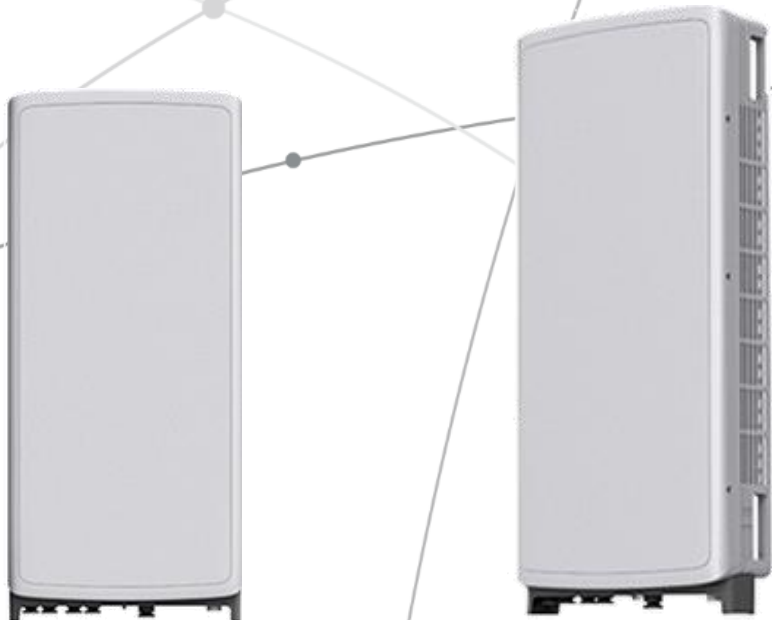
SAMSUNG

SAMSUNG C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A



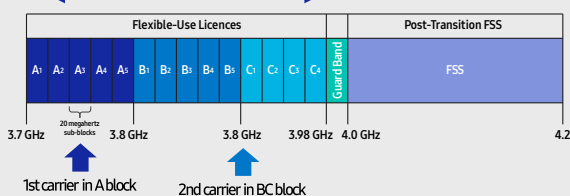
Points of Differentiation

Wide Bandwidth

With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks

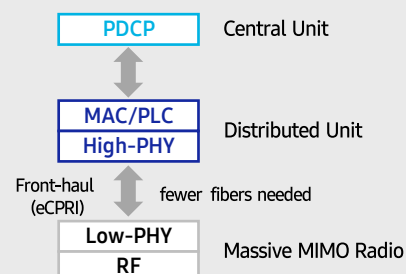
C-Band spectrum supported by Massive MIMO Radio



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.

It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

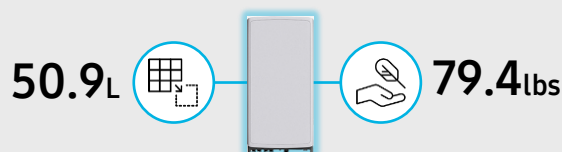
Furthermore, as C-Band massive MIMO Radio supports MU-MIMO (Multi-user MIMO), it enables to increase user throughput by minimizing interference.



Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. Despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment.



Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs



SAMSUNG

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

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ATTACHMENT 3

Site Name: **EAST HAVEN 5 CT**
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW 700	751	4	1019	4075	67	0.0326	0.5007	6.52%
VZW Cellular	874	4	809	3237	67	0.0259	0.5827	4.45%
VZW PCS	1975	4	2215	8861	67	0.0710	1.0000	7.10%
VZW AWS	2120	4	2664	10655	67	0.0854	1.0000	8.54%
VZW CBAND	3730.08	2	13335	26670	67	0.2137	1.0000	21.37%
Total Percentage of Maximum Permissible Exposure								47.97%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

**Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council's November 10, 2015 Memorandum for Exempt Modification filings

MHz = Megahertz

mW/cm^2 = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 4

(REVISED) STRUCTURAL ANALYSIS REPORT

For

EAST HAVEN 5 CT

115 Peat Meadow Road
New Haven, CT 06513

Antennas Mounted to the Monopole



Prepared for:

verizon✓

20 Alexander Drive, 2nd Floor
Wallingford, CT 06492

Dated: June 30, 2022 (Rev.4)

May 11, 2022 (Rev.3)

January 5, 2021 (Rev.2)

December 22, 2020 (Rev.1)

November 20, 2020

Prepared by:



HUDSON
Design Group LLC

45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com





HUDSON
Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by Verizon to conduct a structural evaluation of the 24' monopole with proposed 46' extension supporting the proposed Verizon antennas located at elevation 67' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of Verizon's proposed antennas listed below.

The following documents were used for our reference:

- Previous HDG Structural Analysis Report dated January 31, 2018.

TOWER CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole **is in conformance** with the ANSI/TIA-222-G Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at **93.0%** - (Pole section L3 from EL.0' to EL.10' Controlling).



APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
Verizon	(6) JAHH-45B-R3B Antennas	67'	BSAMNT-SBS-2-3 on Pipe Mast on Horizontal Pipe
Verizon	(3) MT6407-77A Antennas	67'	Pipe Mast on Horizontal Pipe
Verizon	(3) B2/B66A RRH-BR049 RRH's	60'	Pipe Mast on UGLM-DCP
Verizon	(3) B5/B13 RRH-BR04C RRH's	60'	Pipe Mast on UGLM-DCP
Verizon	(3) CBC78T-DS-43-2X Diplexers	60'	Pipe Mast on UGLM-DCP
Verizon	(1) OVP Box	60'	Pipe Mast on UGLM-DCP
	Billboards	35'	Top of Monopole

**Proposed Verizon Appurtenances shown in Bold.*

VERIZON EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
VERIZON	(1) Hybrid Cable	0' - 67'	Inside Monopole

**Proposed Verizon Coax Cables shown in Bold.*

TOWER ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	85.6%	24 – 70	PASS	
Pole Section-L2	79.3%	10 – 24	PASS	
Pole Section-L3	93.0%	0 – 10	PASS	Controlling

TOWER FOUNDATION COMPARISON SUMMARY:

	Proposed Reactions	*Previous Reactions	% Change	Pass/Fail
Shear	50218 lbs	49755 lbs	+0.93%	ACCEPTABLE
Axial	93560 lbs	150000 lbs**	-37.63%	PASS
Moment	1898212 lb-ft	1865196 lb-ft	+1.77%	ACCEPTABLE

** Reactions taken from previous HDG Tower Structural Analysis dated January 31, 2018.*

*** Reaction taken from previous HDG Foundation Evaluation dated January 31, 2018.*



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DESIGN CRITERIA:

1. EIA/TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

County: New Haven
Wind Load: 105 mph (3 second gust)
Structural Class: II
Exposure Category: B
Topographic Category: 1
Crest Height: 0 ft.
Nominal Ice Thickness: 0.75 inch

2. Approximate height above grade to proposed antennas: 67'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. The monopole geometry and member sizes are as indicated in the record drawings prepared by Effective Engineering Solutions, LTD., dated October 15, 2012.
2. The monopole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. The support mounts and billboard supporting frames are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
4. All prior structural modifications, if any, are assumed to be as per the data supplied (if available) and installed properly.
5. Foundation and geotechnical information were gathered from the previous HDG Tower Structural Analysis dated January 31, 2018.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas, RRH's, and OVP be mounted on the proposed mounts supported by the proposed monopole extension.



HUDSON
Design Group LLC

FIELD PHOTO:



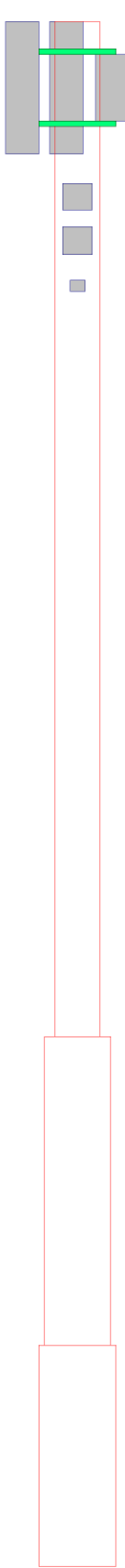
Photo 1: Photo illustrating the monopole with appurtenances shown.



HUDSON
Design Group LLC

CALCULATIONS

Section	1	P24x1/2	46.00	A53-B-42	5778.0	70.0 ft
	2	P36x1/2	14.00		2656.5	24.0 ft
	3	P42x7/16	10.00		1943.9	10.0 ft
					10378.4	0.0 ft
		Length (ft)				
		Grade				
		Weight (lb)				



DESIGNED APPURTENANCE LOADING

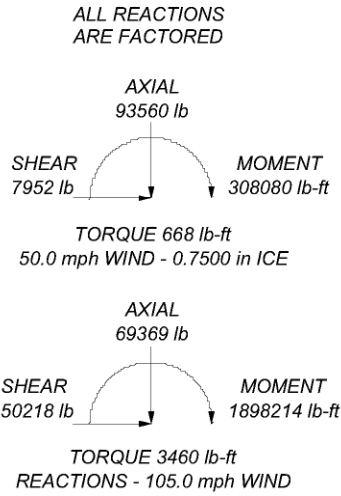
TYPE	ELEVATION	TYPE	ELEVATION
3'-6" Horizontal Face Pipe (Verizon)	67	MT6407-77A Antenna w/ Mounting Pipe (Verizon)	67
3'-6" Horizontal Face Pipe (Verizon)	67	MT6407-77A Antenna w/ Mounting Pipe (Verizon)	67
3'-6" Horizontal Face Pipe (Verizon)	67	MT6407-77A Antenna w/ Mounting Pipe (Verizon)	67
3'-6" Horizontal Face Pipe (Verizon)	67	MT6407-77A Antenna w/ Mounting Pipe (Verizon)	67
3'-6" Horizontal Face Pipe (Verizon)	67	B2/B66A RRH-BR049 RRH (Verizon)	60
3'-6" Horizontal Face Pipe (Verizon)	67	B2/B66A RRH-BR049 RRH (Verizon)	60
3'-6" Horizontal Face Pipe (Verizon)	67	B2/B66A RRH-BR049 RRH (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	B5/B13 RRH-BR04C RRH (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	B5/B13 RRH-BR04C RRH (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	B5/B13 RRH-BR04C RRH (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	CBC78T-DS-43-2X Diplexer (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	CBC78T-DS-43-2X Diplexer (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	CBC78T-DS-43-2X Diplexer (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	OVP (Verizon)	60
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67	Billboards (East Haven 5 CT)	35
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	67		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 105.0 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50.0 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.0 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 93%



Hudson Design Group LLC
 45 Beechwood Drive
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job: EAST HAVEN 5 CT		
Project: 70 ft Monopole		
Client: VERIZON	Drawn by: CL	App'd:
Code: TIA-222-G	Date: 06/30/22	Scale: NTS
Path:		Dwg No. E-1

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	1 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 105.0 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56.0 pcf.

A wind speed of 50.0 mph is used in combination with ice.

Temperature drop of 50.0 °F.

Deflections calculated using a wind speed of 60.0 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

Pole Section Geometry

Section	Elevation <i>ft</i>	Section Length <i>ft</i>	Pole Size	Pole Grade	Socket Length <i>ft</i>
L1	70.00-24.00	46.00	P24x1/2	A53-B-42 (42 ksi)	
L2	24.00-10.00	14.00	P36x1/2	A53-B-42 (42 ksi)	
L3	10.00-0.00	10.00	P42x7/16	A53-B-42 (42 ksi)	

Tower Elevation <i>ft</i>	Gusset Area (per face) <i>ft²</i>	Gusset Thickness <i>in</i>	Gusset Grade	Adjust. Factor <i>A_f</i>	Adjust. Factor <i>A_r</i>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals <i>in</i>	Double Angle Stitch Bolt Spacing Horizontals <i>in</i>	Double Angle Stitch Bolt Spacing Redundants <i>in</i>
L1 70.00-24.00				1	1	1			
L2 24.00-10.00				1	1	1			
L3 10.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	2 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf
12X24 Hybrid Cable (Verizon)	D	No	Yes	Inside Pole	67.00 - 0.00	1	No Ice	0.00	3.20
							1/2" Ice	0.00	3.20
							1" Ice	0.00	3.20

1 5/8	D	No	Yes	Inside Pole	35.00 - 0.00	10	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
L1	70.00-24.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	0.000	0.000	252.00
L2	24.00-10.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	0.000	0.000	190.40
L3	10.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
		D	0.000	0.000	0.000	0.000	136.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
L1	70.00-24.00	A	1.557	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	0.000	0.000	252.00
L2	24.00-10.00	A	1.404	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	0.000	0.000	190.40
L3	10.00-0.00	A	1.242	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
		D		0.000	0.000	0.000	0.000	136.00

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	3 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

Discrete Tower Loads

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight lb</i>
3'-6" Horizontal Face Pipe (Verizon)	A	From Face	1.50 0.00 1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	A	From Face	1.50 0.00 -1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	B	From Face	1.50 0.00 1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	B	From Face	1.50 0.00 -1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	C	From Face	1.50 0.00 1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	C	From Face	1.50 0.00 -1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	D	From Face	1.50 0.00 1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97
3'-6" Horizontal Face Pipe (Verizon)	D	From Face	1.50 0.00 -1.59	0.0000	67.00	No Ice 1/2" Ice 1" Ice	1.01 1.26 1.52	0.07 0.10 0.15	20.30 29.99 42.97

JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	A	From Face	3.00 -2.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	11.40 11.89 12.38	7.01 7.82 8.66	126.74 211.06 304.34
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	A	From Face	3.00 -0.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	11.40 11.89 12.38	7.01 7.82 8.66	126.74 211.06 304.34
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	B	From Face	3.00 -2.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	11.40 11.89 12.38	7.01 7.82 8.66	126.74 211.06 304.34
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	B	From Face	3.00 -0.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	11.40 11.89 12.38	7.01 7.82 8.66	126.74 211.06 304.34
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	C	From Face	3.00 -2.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	11.40 11.89 12.38	7.01 7.82 8.66	126.74 211.06 304.34
JAHH-45B-R3B Antenna w/ Mounting Pipe (Verizon)	C	From Face	3.00 -0.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	11.40 11.89 12.38	7.01 7.82 8.66	126.74 211.06 304.34
MT6407-77A Antenna w/ Mounting Pipe (Verizon)	A	From Face	3.00 1.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	5.43 5.97 6.46	3.27 3.99 4.59	109.00 154.17 204.90
MT6407-77A Antenna w/ Mounting Pipe (Verizon)	B	From Face	3.00 1.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	5.43 5.97 6.46	3.27 3.99 4.59	109.00 154.17 204.90

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	Page
	EAST HAVEN 5 CT	4 of 12
	Project	Date
	70 ft Monopole	16:20:54 06/30/22
	Client	Designed by
	VERIZON	CL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
MT6407-77A Antenna w/ Mounting Pipe (Verizon)	C	From Face	3.00 1.50 0.00	0.0000	67.00	No Ice 1/2" Ice 1" Ice	5.43 5.97 6.46	3.27 3.99 4.59	109.00 154.17 204.90
B2/B66A RRH-BR049 RRH (Verizon)	A	From Face	2.00 0.00 2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	98.00 116.34 137.47
B2/B66A RRH-BR049 RRH (Verizon)	B	From Face	2.00 0.00 2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	98.00 116.34 137.47
B2/B66A RRH-BR049 RRH (Verizon)	C	From Face	2.00 0.00 2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	98.00 116.34 137.47
B5/B13 RRH-BR04C RRH (Verizon)	A	From Face	2.00 0.00 0.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	82.00 98.43 117.53
B5/B13 RRH-BR04C RRH (Verizon)	B	From Face	2.00 0.00 0.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	82.00 98.43 117.53
B5/B13 RRH-BR04C RRH (Verizon)	C	From Face	2.00 0.00 0.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	82.00 98.43 117.53
CBC78T-DS-43-2X Diplexer (Verizon)	A	From Face	2.00 0.00 -2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.54	0.52 0.61 0.71	9.50 15.95 24.08
CBC78T-DS-43-2X Diplexer (Verizon)	B	From Face	2.00 0.00 -2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.54	0.52 0.61 0.71	9.50 15.95 24.08
CBC78T-DS-43-2X Diplexer (Verizon)	C	From Face	2.00 0.00 -2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.54	0.52 0.61 0.71	9.50 15.95 24.08
OVP (Verizon)	A	From Face	2.00 0.00 -2.00	0.0000	60.00	No Ice 1/2" Ice 1" Ice	3.78 4.03 4.29	2.51 2.72 2.94	32.00 63.40 98.56
***** Billboards (East Haven 5 CT)	C	None		0.0000	35.00	No Ice 1/2" Ice 1" Ice	1238.40 1243.04 1247.68	78.12 79.76 81.40	45000.00 50654.87 56365.93

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice

<i>tnxTower</i> Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	5 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

<i>Comb. No.</i>	<i>Description</i>
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Reactions

<i>Location</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Vertical lb</i>	<i>Horizontal, X lb</i>	<i>Horizontal, Z lb</i>
Pole	Max. Vert	26	93560.22	0.00	0.00
	Max. H _x	20	69368.59	50217.77	0.00
	Max. H _z	2	69368.59	0.00	49657.33
	Max. M _x	2	1862704.43	0.00	49657.33

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	Page
	EAST HAVEN 5 CT	6 of 12
	Project	Date
	70 ft Monopole	16:20:54 06/30/22
	Client	Designed by
	VERIZON	CL

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. M _z	8	1897436.41	-50217.77	0.00
	Max. Torsion	7	3454.55	-43489.86	24828.66
	Min. Vert	13	52026.44	-25108.88	-43004.50
	Min. H _x	8	69368.59	-50217.77	0.00
	Min. H _z	14	69368.59	0.00	-49657.33
	Min. M _x	14	-1857697.79	0.00	-49657.33
	Min. M _z	20	-1898212.02	50217.77	0.00
	Min. Torsion	19	-3460.21	43489.86	-24828.66

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	57807.16	-0.00	-0.00	-2030.89	314.65	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	69368.59	-0.00	-49657.33	-1862704.43	386.43	-1379.89
0.9 Dead+1.6 Wind 0 deg - No Ice	52026.44	-0.00	-49657.32	-1854415.72	287.36	-1380.64
1.2 Dead+1.6 Wind 30 deg - No Ice	69368.59	25108.88	-43004.51	-1613480.57	-948531.58	-2787.33
0.9 Dead+1.6 Wind 30 deg - No Ice	52026.44	25108.88	-43004.50	-1606216.74	-944696.31	-2790.47
1.2 Dead+1.6 Wind 60 deg - No Ice	69368.59	43489.86	-24828.66	-932596.28	-1643180.55	-3449.88
0.9 Dead+1.6 Wind 60 deg - No Ice	52026.44	43489.86	-24828.66	-928131.79	-1636465.57	-3454.55
1.2 Dead+1.6 Wind 90 deg - No Ice	69368.59	50217.77	-0.00	-2500.71	-1897436.41	-3190.17
0.9 Dead+1.6 Wind 90 deg - No Ice	52026.44	50217.77	-0.00	-1859.58	-1889667.71	-3195.11
1.2 Dead+1.6 Wind 120 deg - No Ice	69368.59	43489.86	24828.66	927593.55	-1643178.56	-2075.77
0.9 Dead+1.6 Wind 120 deg - No Ice	52026.44	43489.86	24828.66	924411.66	-1636464.09	-2079.65
1.2 Dead+1.6 Wind 150 deg - No Ice	69368.59	25108.88	43004.51	1608475.23	-948529.59	-403.02
0.9 Dead+1.6 Wind 150 deg - No Ice	52026.44	25108.88	43004.50	1602494.66	-944694.83	-404.83
1.2 Dead+1.6 Wind 180 deg - No Ice	69368.59	-0.00	49657.33	1857697.79	386.45	1379.93
0.9 Dead+1.6 Wind 180 deg - No Ice	52026.44	-0.00	49657.32	1850692.67	287.37	1380.67
1.2 Dead+1.6 Wind 210 deg - No Ice	69368.59	-25108.88	43004.51	1608476.49	949303.17	2793.07
0.9 Dead+1.6 Wind 210 deg - No Ice	52026.44	-25108.88	43004.50	1602495.59	945270.08	2796.16
1.2 Dead+1.6 Wind 240 deg - No Ice	69368.59	-43489.86	24828.66	927594.82	1643953.50	3455.58
0.9 Dead+1.6 Wind 240 deg - No Ice	52026.44	-43489.86	24828.66	924412.60	1637040.35	3460.21
1.2 Dead+1.6 Wind 270 deg - No Ice	69368.59	-50217.77	-0.00	-2500.70	1898212.02	3190.15

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	Page
	EAST HAVEN 5 CT	7 of 12
	Project	Date
	70 ft Monopole	16:20:54 06/30/22
	Client	Designed by
	VERIZON	CL

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
0.9 Dead+1.6 Wind 270 deg - No Ice	52026.44	-50217.77	-0.00	-1859.57	1890244.48	3195.09
1.2 Dead+1.6 Wind 300 deg - No Ice	69368.59	-43489.86	-24828.66	-932597.53	1643955.47	2070.06
0.9 Dead+1.6 Wind 300 deg - No Ice	52026.44	-43489.86	-24828.66	-928132.72	1637041.83	2073.99
1.2 Dead+1.6 Wind 330 deg - No Ice	69368.59	-25108.88	-43004.51	-1613481.82	949305.13	397.34
0.9 Dead+1.6 Wind 330 deg - No Ice	52026.44	-25108.88	-43004.50	-1606217.67	945271.55	399.18
1.2 Dead+1.0 Ice+1.0 Temp	93560.22	-0.00	-0.00	-6264.14	1437.02	0.01
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	93560.22	-0.00	-7886.92	-306668.86	1458.12	-219.98
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	93560.22	3976.22	-6830.27	-266434.56	-150906.86	-512.86
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	93560.22	6887.02	-3943.46	-156512.50	-262445.70	-668.35
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	93560.22	7952.45	-0.00	-6356.26	-303271.70	-644.79
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	93560.22	6887.02	3943.46	143799.94	-262445.62	-448.45
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	93560.22	3976.22	6830.27	253721.90	-150906.77	-131.92
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	93560.22	-0.00	7886.92	293956.16	1458.13	220.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	93560.22	-3976.22	6830.27	253721.95	153823.06	512.97
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	93560.22	-6887.02	3943.46	143799.99	265361.94	668.46
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	93560.22	-7952.45	-0.00	-6356.24	306188.03	644.80
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	93560.22	-6887.02	-3943.46	-156512.52	265362.01	448.37
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	93560.22	-3976.22	-6830.27	-266434.59	153823.12	131.84
Dead+Wind 0 deg - Service	57807.16	-0.00	-9067.40	-340846.98	321.64	-252.29
Dead+Wind 30 deg - Service	57807.16	4584.87	-7852.59	-295460.25	-172487.11	-510.25
Dead+Wind 60 deg - Service	57807.16	7941.22	-4533.70	-171461.52	-298991.82	-631.55
Dead+Wind 90 deg - Service	57807.16	9169.73	-0.00	-2076.19	-345295.72	-583.70
Dead+Wind 120 deg - Service	57807.16	7941.22	4533.70	167309.11	-298991.76	-379.45
Dead+Wind 150 deg - Service	57807.16	4584.87	7852.59	291307.77	-172487.05	-73.45
Dead+Wind 180 deg - Service	57807.16	-0.00	9067.40	336694.46	321.64	252.29
Dead+Wind 210 deg - Service	57807.16	-4584.87	7852.59	291307.81	173130.35	510.43
Dead+Wind 240 deg - Service	57807.16	-7941.22	4533.70	167309.14	299635.11	631.74
Dead+Wind 270 deg - Service	57807.16	-9169.73	-0.00	-2076.18	345939.07	583.70
Dead+Wind 300 deg - Service	57807.16	-7941.22	-4533.70	-171461.55	299635.16	379.26
Dead+Wind 330 deg - Service	57807.16	-4584.87	-7852.59	-295460.29	173130.41	73.27

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-57807.16	0.00	0.00	57807.16	0.00	0.000%

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	Page
	EAST HAVEN 5 CT	8 of 12
	Project	Date
	70 ft Monopole	16:20:54 06/30/22
	Client	Designed by
	VERIZON	CL

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
2	0.00	-69368.59	-49657.32	0.00	69368.59	49657.33	0.000%
3	0.00	-52026.44	-49657.32	0.00	52026.44	49657.32	0.000%
4	25108.88	-69368.59	-43004.50	-25108.88	69368.59	43004.51	0.000%
5	25108.88	-52026.44	-43004.50	-25108.88	52026.44	43004.50	0.000%
6	43489.86	-69368.59	-24828.66	-43489.86	69368.59	24828.66	0.000%
7	43489.86	-52026.44	-24828.66	-43489.86	52026.44	24828.66	0.000%
8	50217.76	-69368.59	0.00	-50217.77	69368.59	0.00	0.000%
9	50217.76	-52026.44	0.00	-50217.77	52026.44	0.00	0.000%
10	43489.86	-69368.59	24828.66	-43489.86	69368.59	-24828.66	0.000%
11	43489.86	-52026.44	24828.66	-43489.86	52026.44	-24828.66	0.000%
12	25108.88	-69368.59	43004.50	-25108.88	69368.59	-43004.51	0.000%
13	25108.88	-52026.44	43004.50	-25108.88	52026.44	-43004.50	0.000%
14	0.00	-69368.59	49657.32	0.00	69368.59	-49657.33	0.000%
15	0.00	-52026.44	49657.32	0.00	52026.44	-49657.32	0.000%
16	-25108.88	-69368.59	43004.50	25108.88	69368.59	-43004.51	0.000%
17	-25108.88	-52026.44	43004.50	25108.88	52026.44	-43004.50	0.000%
18	-43489.86	-69368.59	24828.66	43489.86	69368.59	-24828.66	0.000%
19	-43489.86	-52026.44	24828.66	43489.86	52026.44	-24828.66	0.000%
20	-50217.76	-69368.59	0.00	50217.77	69368.59	0.00	0.000%
21	-50217.76	-52026.44	0.00	50217.77	52026.44	0.00	0.000%
22	-43489.86	-69368.59	-24828.66	43489.86	69368.59	24828.66	0.000%
23	-43489.86	-52026.44	-24828.66	43489.86	52026.44	24828.66	0.000%
24	-25108.88	-69368.59	-43004.50	25108.88	69368.59	43004.51	0.000%
25	-25108.88	-52026.44	-43004.50	25108.88	52026.44	43004.50	0.000%
26	0.00	-93560.22	0.00	0.00	93560.22	0.00	0.000%
27	0.00	-93560.22	-7886.90	0.00	93560.22	7886.92	0.000%
28	3976.21	-93560.22	-6830.26	-3976.22	93560.22	6830.27	0.000%
29	6887.01	-93560.22	-3943.45	-6887.02	93560.22	3943.46	0.000%
30	7952.43	-93560.22	0.00	-7952.45	93560.22	0.00	0.000%
31	6887.01	-93560.22	3943.45	-6887.02	93560.22	-3943.46	0.000%
32	3976.21	-93560.22	6830.26	-3976.22	93560.22	-6830.27	0.000%
33	0.00	-93560.22	7886.90	0.00	93560.22	-7886.92	0.000%
34	-3976.21	-93560.22	6830.26	3976.22	93560.22	-6830.27	0.000%
35	-6887.01	-93560.22	3943.45	6887.02	93560.22	-3943.46	0.000%
36	-7952.43	-93560.22	0.00	7952.45	93560.22	0.00	0.000%
37	-6887.01	-93560.22	-3943.45	6887.02	93560.22	3943.46	0.000%
38	-3976.21	-93560.22	-6830.26	3976.22	93560.22	6830.27	0.000%
39	0.00	-57807.16	-9067.40	0.00	57807.16	9067.40	0.000%
40	4584.87	-57807.16	-7852.59	-4584.87	57807.16	7852.59	0.000%
41	7941.22	-57807.16	-4533.70	-7941.22	57807.16	4533.70	0.000%
42	9169.73	-57807.16	0.00	-9169.73	57807.16	0.00	0.000%
43	7941.22	-57807.16	4533.70	-7941.22	57807.16	-4533.70	0.000%
44	4584.87	-57807.16	7852.59	-4584.87	57807.16	-7852.59	0.000%
45	0.00	-57807.16	9067.40	0.00	57807.16	-9067.40	0.000%
46	-4584.87	-57807.16	7852.59	4584.87	57807.16	-7852.59	0.000%
47	-7941.22	-57807.16	4533.70	7941.22	57807.16	-4533.70	0.000%
48	-9169.73	-57807.16	0.00	9169.73	57807.16	0.00	0.000%
49	-7941.22	-57807.16	-4533.70	7941.22	57807.16	4533.70	0.000%
50	-4584.87	-57807.16	-7852.59	4584.87	57807.16	7852.59	0.000%

<i>tnxTower</i> Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page 9 of 12
	Project	70 ft Monopole	Date 16:20:54 06/30/22
	Client	VERIZON	Designed by CL

Non-Linear Convergence Results

<i>Load Combination</i>	<i>Converged?</i>	<i>Number of Cycles</i>	<i>Displacement Tolerance</i>	<i>Force Tolerance</i>
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00003982
3	Yes	4	0.00000001	0.00002220
4	Yes	4	0.00000001	0.00009245
5	Yes	4	0.00000001	0.00005628
6	Yes	4	0.00000001	0.00013190
7	Yes	4	0.00000001	0.00008374
8	Yes	4	0.00000001	0.00006361
9	Yes	4	0.00000001	0.00003952
10	Yes	4	0.00000001	0.00008974
11	Yes	4	0.00000001	0.00005437
12	Yes	4	0.00000001	0.00009845
13	Yes	4	0.00000001	0.00006058
14	Yes	4	0.00000001	0.00003958
15	Yes	4	0.00000001	0.00002210
16	Yes	4	0.00000001	0.00011987
17	Yes	4	0.00000001	0.00007570
18	Yes	4	0.00000001	0.00009229
19	Yes	4	0.00000001	0.00005636
20	Yes	4	0.00000001	0.00006367
21	Yes	4	0.00000001	0.00003954
22	Yes	4	0.00000001	0.00011631
23	Yes	4	0.00000001	0.00007283
24	Yes	4	0.00000001	0.00009517
25	Yes	4	0.00000001	0.00005796
26	Yes	4	0.00000001	0.00000346
27	Yes	4	0.00000001	0.00011057
28	Yes	4	0.00000001	0.00011029
29	Yes	4	0.00000001	0.00010916
30	Yes	4	0.00000001	0.00010639
31	Yes	4	0.00000001	0.00010352
32	Yes	4	0.00000001	0.00010070
33	Yes	4	0.00000001	0.00009958
34	Yes	4	0.00000001	0.00010211
35	Yes	4	0.00000001	0.00010580
36	Yes	4	0.00000001	0.00010890
37	Yes	4	0.00000001	0.00011127
38	Yes	4	0.00000001	0.00011152
39	Yes	4	0.00000001	0.00000534
40	Yes	4	0.00000001	0.00000578
41	Yes	4	0.00000001	0.00000610
42	Yes	4	0.00000001	0.00000568
43	Yes	4	0.00000001	0.00000565
44	Yes	4	0.00000001	0.00000548
45	Yes	4	0.00000001	0.00000519
46	Yes	4	0.00000001	0.00000577
47	Yes	4	0.00000001	0.00000586
48	Yes	4	0.00000001	0.00000571
49	Yes	4	0.00000001	0.00000587
50	Yes	4	0.00000001	0.00000562

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	10 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	70 - 24	2.9983	49	0.2995	0.0044
L2	24 - 10	0.4201	48	0.1558	0.0006
L3	10 - 0	0.0762	48	0.0692	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
67.00	3'-6" Horizontal Face Pipe	49	2.7986	0.2935	0.0041	80159
60.00	B2/B66A RRH-BR049 RRH	49	2.3371	0.2789	0.0033	40079
35.00	Billboards (East Haven 5 CT)	48	0.8811	0.2066	0.0012	11451

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	70 - 24	16.4162	20	1.6301	0.0236
L2	24 - 10	2.3057	20	0.8550	0.0031
L3	10 - 0	0.4180	20	0.3799	0.0010

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
67.00	3'-6" Horizontal Face Pipe	20	15.3243	1.5984	0.0225	14752
60.00	B2/B66A RRH-BR049 RRH	20	12.8013	1.5217	0.0185	7376
35.00	Billboards (East Haven 5 CT)	20	4.8332	1.1333	0.0064	2106

Compression Checks

Pole Design Data

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	11 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	70 - 24 (1)	P24x1/2	46.00	0.00	0.0	36.9137	-62649.20	1395340.00	0.045
L2	24 - 10 (2)	P36x1/2	14.00	0.00	0.0	55.7633	-66523.40	2107850.00	0.032
L3	10 - 0 (3)	P42x7/16	10.00	0.00	0.0	57.1254	-69349.60	2028190.00	0.034

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} lb-ft	φM _{ux} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} lb-ft	φM _{uy} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	70 - 24 (1)	P24x1/2	699469.17	869925.00	0.804	0.00	869925.00	0.000
L2	24 - 10 (2)	P36x1/2	1397150.00	1842816.67	0.758	0.00	1842816.67	0.000
L3	10 - 0 (3)	P42x7/16	1898216.67	2125975.00	0.893	0.00	2125975.00	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u lb	φV _n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u lb-ft	φT _n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	70 - 24 (1)	P24x1/2	49725.90	697669.00	0.071	3190.82	1338408.33	0.002
L2	24 - 10 (2)	P36x1/2	49992.40	1053930.00	0.047	3190.32	3075166.67	0.001
L3	10 - 0 (3)	P42x7/16	50244.00	1014090.00	0.050	3190.14	3476150.00	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	70 - 24 (1)	0.045	0.804	0.000	0.071	0.002	0.854	1.000	4.8.2 ✓
L2	24 - 10 (2)	0.032	0.758	0.000	0.047	0.001	0.792	1.000	4.8.2 ✓
L3	10 - 0 (3)	0.034	0.893	0.000	0.050	0.001	0.930	1.000	4.8.2 ✓

<i>tnxTower</i> Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	EAST HAVEN 5 CT	Page	12 of 12
	Project	70 ft Monopole	Date	16:20:54 06/30/22
	Client	VERIZON	Designed by	CL

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	70 - 24	Pole	P24x1/2	1	-62649.20	1395340.00	85.4	Pass
L2	24 - 10	Pole	P36x1/2	2	-66523.40	2107850.00	79.2	Pass
L3	10 - 0	Pole	P42x7/16	3	-69349.60	2028190.00	93.0	Pass
							Summary	
							Pole (L3)	93.0 Pass
							RATING =	93.0 Pass

June 30, 2022



Verizon Wireless
20 Alexander Drive, 2nd Floor
Wallingford, CT 06492

RE: Site Name: EAST HAVEN 5 CT
 Site Address: 115 Peat Meadow Road
 New Haven, CT 06513

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Verizon Wireless to perform a mount analysis on the proposed Verizon Wireless antenna/RRH mounts to determine their capability of supporting the following additional loading:

- **(6) JAHH-45B-R3B Antennas (72.0"x18.0"x7.0" – Wt. = 92 lbs. /each)**
- **(3) MT6407-77A Antennas w/ RRH's (Not to Exceed: 35.12"x16.06"x5.51" – Wt. = 87.1 lbs. /each)**
- **(3) B2/B66A RRH-BR049 RRH's (15.0"x15.0"x10.0" – Wt. = 98 lbs. /each) (separate mount)**
- **(3) B5/B13 RRH-BR04C RRH's (15.0"x15.0"x8.1" – Wt. = 82 lbs. /each) (separate mount)**
- **(3) CBC78T-DS-43-2X Diplexers (9.7"x6.9"x6.4" – Wt. = 21 lbs. /each) (separate mount)**
- **(1) OVP Box (28.9"x15.7"x10.3" – Wt. = 32 lbs. /each) (separate mount)**

**Proposed equipment shown in bold*

Mount fabrication drawings prepared by SitePro1, P/N WMM01 dated May 10, 2010; P/N UGLM-DCP dated February 27, 2013; P/N UGLM4 dated June 12, 2017; and mount fabrication drawings prepared by CommScope, P/N BSAMNT-SBS-2-3 dated March 2, 2017, were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, and the International Building Code 2015 with 2018 Connecticut State Building Code.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-G Annex B, the max basic wind speed for this site is equal to 105 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 0.75 in. An escalated ice thickness of 1.61 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_s , of 0.186 and a spectral response acceleration parameter at a period of 1 second, S_1 , of 0.062.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 2.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The proposed mounts are to be secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the Proposed SitePro1 P/N UGLM-DC4 collar mounts, Proposed CommScope P/N BSAMNT-SBS-2-3 dual mounts, and Proposed SitePro1 P/N UGLM-DCP collar mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed Antenna Mount	1	LC7	29%	PASS
Proposed RRH Mount	11	LC7	3%	PASS

Reference Documents:

- Fabrication drawings prepared by SitePro1, P/N WMM01 dated May 10, 2010.
- Fabrication drawings prepared by SitePro1, P/N UGLM-DCP dated February 27, 2013.
- Fabrication drawings prepared by SitePro1, P/N UGLM4 dated June 12, 2017.
- Fabrication drawings prepared by CommScope, P/N BSAMNT-SBS-2-3 dated March 2, 2017.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to Verizon's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC



Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal



HUDSON
Design Group LLC

Wind & Ice Calculations

Date: 6/30/2022
 Project Name: EAST HAVEN 5 CT
 Designed By: CL Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

$K_z = 0.881$

$z = 67$ (ft)
 $z_g = 1200$ (ft)
 $\alpha = 7.0$

$$K_{zmin} \leq K_z \leq 2.01$$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.4 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$$K_{zt} = [1 + (K_e K_t / K_h)]^2$$

$K_{zt} = 1$

(If Category 1 then $K_{zt} = 1.0$)

Category = 1

$$K_h = e^{(f \cdot z/H)}$$

$K_h = 1$
 $K_e = 0.9$ (from Table 2-4)
 $K_t = 0$ (from Table 2-5)
 $f = 0$ (from Table 2-5)
 $z = 67$
 $H = 0$ (Ht. of the crest above surrounding terrain)
 $K_{zt} = 1.00$
 $K_{iz} = 1.07$ (from Sec. 2.6.8)

2.6.8 Design Ice Thickness

Max Ice Thickness =

$t_i = 0.75$ in

Importance Factor, $I_{ice} =$

$I_{ice} = 1.00$ (from Table 2-3)

$$t_{iz} = 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot (K_{zt})^{0.35}$$

$t_{iz} = 1.61$ in

2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

Gh = 0.85 + 0.15 [h/150 - 3.0] h = ht. of structure

h = 70

Gh = 0.85

2.6.7.2 Guyed Masts

Gh = 0.85

2.6.7.3 Pole Structures

Gh = 1.1

2.6.9 Appurtenances

Gh = 1.0

2.6.7.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh = 1.35

Gh = 1.00

2.6.9.2 Design Wind Force on Appurtenances

Ultimate Design Wind Speed per 2018 CTSBC:

V_{ult} = 125 mph

Nomial Design Wind Speed, V_{asd} = V_{ult} V(0.6)

V_{asd} = 97 mph

V_{asd} per Appendix N of the Connecticut State Building Code, Latest Edition.

Per TIA-222-G,

V_{min} = 95 mph

V_{max} = 115 mph

$$F = q_z * Gh * (EPA)_A$$

$$q_z = 0.00256 * K_z * K_{zt} * K_d * V_{max}^2 * I$$

q_z = 23.63

q_{z (ice)} = 5.36

q_{z (30)} = 1.93

K_z = 0.881

K_{zt} = 1.0

K_d = 0.95 (from Table 2-2)

V_{basic} = 105 mph

V_{max (ice)} = 50 mph

V₃₀ = 30 mph

I = 1.0 (from Table 2-3)

I_{wice} = 1.0 (from Table 2-3)

Table 2-2

Structure Type	Wind Direction Probability Factor, K _d
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95

Date: 6/30/2022
 Project Name: EAST HAVEN 5 CT
 Designed By: CL Checked By: MSC



Determine Ca:

Table 2-8

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Round	C < 32 (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance,
 Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = 1.61 in Angle = 0 (deg) Equivalent Angle = 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	4.00	1.27	269	75	22
MT6407-77A Antenna	35.1	16.1	5.5	3.92	2.19	1.20	111	33	9
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.00	1.20	44	15	4
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	1.00	1.20	44	15	4
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	1.41	1.20	13	6	1
OVP Box	28.9	15.7	10.3	3.15	1.84	1.20	89	27	7
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	7		
HSS 4x4	4.0	12.0		0.33	0.33	2.00	16		

Date: 6/30/2022

Project Name: EAST HAVEN 5 CT

Designed By: CL Checked By: MSC


HUDSON
Design Group LLC

WIND LOADS
Angle = 30 (deg)
Ice Thickness = 1.61 in.
Equivalent Angle = 210 (deg)
WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	269	125	233
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	111	44	94
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	44	30	41
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	44	24	39
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	13	12	13
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	89	59	82

WIND LOADS WITH ICE:

JAHH-45B-R3B Antenna	75.2	21.2	10.2	11.08	5.34	3.54	7.36	1.25	1.41	74	40	66
MT6407-77A Antenna	38.3	19.3	8.7	5.13	2.32	1.99	4.39	1.20	1.28	33	16	29
B2/B66A RRH-BR049 RRH	18.2	18.2	13.2	2.31	1.67	1.00	1.38	1.20	1.20	15	11	14
B5/B13 RRH-BR04C RRH	18.2	18.2	11.3	2.31	1.43	1.00	1.61	1.20	1.20	15	9	13
CBC78T-DS-43-2X Diplexer	12.9	10.1	9.6	0.91	0.86	1.28	1.34	1.20	1.20	6	6	6
OVP Box	32.1	18.9	13.5	4.22	3.02	1.70	2.38	1.20	1.20	27	19	25

WIND LOADS AT 30 MPH:

JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	22	10	19
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	9	4	8
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	4	2	3
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	4	2	3
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	1	1	1
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	7	5	7

WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.61 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	269	125	161
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	111	44	60
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	44	30	33
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	44	24	29
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	13	12	12
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	89	59	67

WIND LOADS WITH ICE:

JAHH-45B-R3B Antenna	75.2	21.2	10.2	11.08	5.34	3.54	7.36	1.25	1.41	74	40	49
MT6407-77A Antenna	38.3	19.3	8.7	5.13	2.32	1.99	4.39	1.20	1.28	33	16	20
B2/B66A RRH-BR049 RRH	18.2	18.2	13.2	2.31	1.67	1.00	1.38	1.20	1.20	15	11	12
B5/B13 RRH-BR04C RRH	18.2	18.2	11.3	2.31	1.43	1.00	1.61	1.20	1.20	15	9	11
CBC78T-DS-43-2X Diplexer	12.9	10.1	9.6	0.91	0.86	1.28	1.34	1.20	1.20	6	6	6
OVP Box	32.1	18.9	13.5	4.22	3.02	1.70	2.38	1.20	1.20	27	19	21

WIND LOADS AT 30 MPH:

JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	22	10	13
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	9	4	5
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	4	2	3
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	4	2	2
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	1	1	1
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	7	5	5

WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.61 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	269	125	125
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	111	44	44
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	44	30	30
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	44	24	24
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	13	12	12
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	89	59	59

WIND LOADS WITH ICE:

JAHH-45B-R3B Antenna	75.2	21.2	10.2	11.08	5.34	3.54	7.36	1.25	1.41	74	40	40
MT6407-77A Antenna	38.3	19.3	8.7	5.13	2.32	1.99	4.39	1.20	1.28	33	16	16
B2/B66A RRH-BR049 RRH	18.2	18.2	13.2	2.31	1.67	1.00	1.38	1.20	1.20	15	11	11
B5/B13 RRH-BR04C RRH	18.2	18.2	11.3	2.31	1.43	1.00	1.61	1.20	1.20	15	9	9
CBC78T-DS-43-2X Diplexer	12.9	10.1	9.6	0.91	0.86	1.28	1.34	1.20	1.20	6	6	6
OVP Box	32.1	18.9	13.5	4.22	3.02	1.70	2.38	1.20	1.20	27	19	19

WIND LOADS AT 30 MPH:

JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	22	10	10
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	9	4	4
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	4	2	2
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	4	2	2
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	1	1	1
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	7	5	5

Date: 6/30/2022
 Project Name: EAST HAVEN 5 CT
 Designed By: CL Checked By: MSC



WIND LOADS

Angle = 120 (deg) Ice Thickness = 1.61 in. Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	269	125	161
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	111	44	60
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	44	30	33
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	44	24	29
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	13	12	12
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	89	59	67

WIND LOADS WITH ICE:

JAHH-45B-R3B Antenna	75.2	21.2	10.2	11.08	5.34	3.54	7.36	1.25	1.41	74	40	49
MT6407-77A Antenna	38.3	19.3	8.7	5.13	2.32	1.99	4.39	1.20	1.28	33	16	20
B2/B66A RRH-BR049 RRH	18.2	18.2	13.2	2.31	1.67	1.00	1.38	1.20	1.20	15	11	12
B5/B13 RRH-BR04C RRH	18.2	18.2	11.3	2.31	1.43	1.00	1.61	1.20	1.20	15	9	11
CBC78T-DS-43-2X Diplexer	12.9	10.1	9.6	0.91	0.86	1.28	1.34	1.20	1.20	6	6	6
OVP Box	32.1	18.9	13.5	4.22	3.02	1.70	2.38	1.20	1.20	27	19	21

WIND LOADS AT 30 MPH:

JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	22	10	13
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	9	4	5
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	4	2	3
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	4	2	2
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	1	1	1
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	7	5	5

Date: 6/30/2022
 Project Name: EAST HAVEN 5 CT
 Designed By: CL Checked By: MSC

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.61 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	269	125	233
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	111	44	94
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	44	30	41
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	44	24	39
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	13	12	13
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	89	59	82

WIND LOADS WITH ICE:

JAHH-45B-R3B Antenna	75.2	21.2	10.2	11.08	5.34	3.54	7.36	1.25	1.41	74	40	66
MT6407-77A Antenna	38.3	19.3	8.7	5.13	2.32	1.99	4.39	1.20	1.28	33	16	29
B2/B66A RRH-BR049 RRH	18.2	18.2	13.2	2.31	1.67	1.00	1.38	1.20	1.20	15	11	14
B5/B13 RRH-BR04C RRH	18.2	18.2	11.3	2.31	1.43	1.00	1.61	1.20	1.20	15	9	13
CBC78T-DS-43-2X Diplexer	12.9	10.1	9.6	0.91	0.86	1.28	1.34	1.20	1.20	6	6	6
OVP Box	32.1	18.9	13.5	4.22	3.02	1.70	2.38	1.20	1.20	27	19	25

WIND LOADS AT 30 MPH:

JAHH-45B-R3B Antenna	72.0	18.0	7.0	9.00	3.50	4.00	10.29	1.27	1.51	22	10	19
MT6407-77A Antenna	35.1	16.1	5.5	3.92	1.34	2.19	6.37	1.20	1.37	9	4	8
B2/B66A RRH-BR049 RRH	15.0	15.0	10.0	1.56	1.04	1.00	1.50	1.20	1.20	4	2	3
B5/B13 RRH-BR04C RRH	15.0	15.0	8.1	1.56	0.84	1.00	1.85	1.20	1.20	4	2	3
CBC78T-DS-43-2X Diplexer	9.7	6.9	6.4	0.46	0.43	1.41	1.52	1.20	1.20	1	1	1
OVP Box	28.9	15.7	10.3	3.15	2.07	1.84	2.81	1.20	1.21	7	5	7

Date: 6/30/2022

Project Name: EAST HAVEN 5 CT

Designed By: CL Checked By: MSC



HUDSON
Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.61 in.

Density of ice: 56 pcf

JAHH-45B-R3B Antenna

Weight of ice based on total radial SF area:

Height (in): 72.0

Width (in): 18.0

Depth (in): 7.0

Total weight of ice on object: 247 lbs

Weight of object: 92.0 lbs

Combined weight of ice and object: 339 lbs

MT6407-77A Antenna

Weight of ice based on total radial SF area:

Height (in): 35.1

Width (in): 16.1

Depth (in): 5.5

Total weight of ice on object: 107 lbs

Weight of object: 87.1 lbs

Combined weight of ice and object: 194 lbs

B2/B66A RRH-BR049 RRH

Weight of ice based on total radial SF area:

Height (in): 15.0

Width (in): 15.0

Depth (in): 10.0

Total weight of ice on object: 48 lbs

Weight of object: 98.0 lbs

Combined weight of ice and object: 146 lbs

B5/B13 RRH-BR04C RRH

Weight of ice based on total radial SF area:

Height (in): 15.0

Width (in): 15.0

Depth (in): 8.1

Total weight of ice on object: 46 lbs

Weight of object: 82.0 lbs

Combined weight of ice and object: 128 lbs

CBC78T-DS-43-2X Diplexer

Weight of ice based on total radial SF area:

Height (in): 9.7

Width (in): 6.9

Depth (in): 6.4

Total weight of ice on object: 18 lbs

Weight of object: 21.0 lbs

Combined weight of ice and object: 39 lbs

OVP Box

Weight of ice based on total radial SF area:

Height (in): 28.9

Width (in): 15.7

Depth (in): 10.3

Total weight of ice on object: 97 lbs

Weight of object: 32.0 lbs

Combined weight of ice and object: 129 lbs

2-1/2" Pipe

Per foot weight of ice:

diameter (in): 2.88

Per foot weight of ice on object: 9 plf

HSS 4x4

Weight of ice based on total radial SF area:

Height (in): 4

Width (in): 4

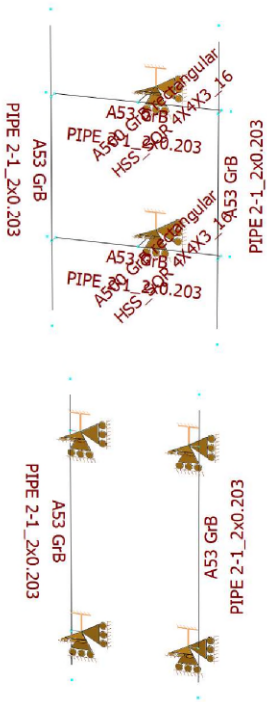
Per foot weight of ice on object: 14 plf



HUDSON
Design Group LLC

Mount Calculations (Proposed Conditions)

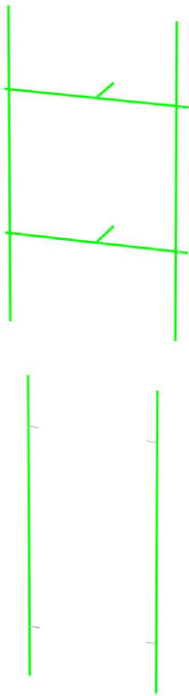


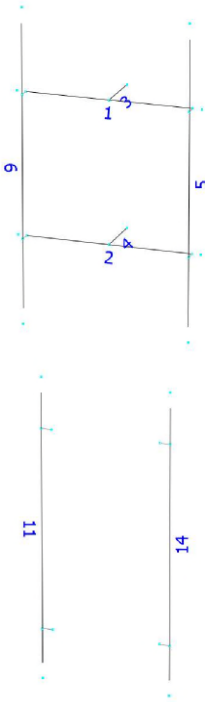




Design status

- Not designed
- Error on design
- Design O.K.
- With warnings





Current Date: 6/30/2022 4:42 PM
Units system: English

Load data

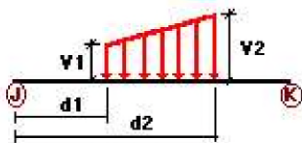
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load on Left End	No	LL
LL2	250 lb Live Load on Center	No	LL
LL3	250 lb Live Load on Right End	No	LL
LLa1	250 lb Live Load on Antenna 1	No	LL
LLa2	250 lb Live Load on Antenna 2	No	LL

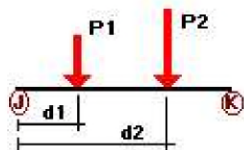
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.007	-0.007	0.00	No	100.00	Yes
	2	z	-0.007	-0.007	0.00	No	100.00	Yes
	11	z	-0.007	-0.007	0.00	No	100.00	Yes
	14	z	-0.007	-0.007	0.00	No	100.00	Yes
W30	1	z	-0.007	-0.007	0.00	No	100.00	Yes

W60	2	z	-0.007	-0.007	0.00	No	100.00	Yes
	11	z	-0.007	-0.007	0.00	No	100.00	Yes
	14	z	-0.007	-0.007	0.00	No	100.00	Yes
	3	x	-0.016	-0.016	0.00	No	100.00	Yes
	4	x	-0.016	-0.016	0.00	No	100.00	Yes
	5	x	-0.007	-0.007	0.00	No	100.00	Yes
W90	6	x	-0.007	-0.007	0.00	No	100.00	Yes
	11	x	-0.007	-0.007	0.00	No	100.00	Yes
	14	x	-0.007	-0.007	0.00	No	100.00	Yes
	3	x	-0.016	-0.016	0.00	No	100.00	Yes
	4	x	-0.016	-0.016	0.00	No	100.00	Yes
	5	x	-0.007	-0.007	0.00	No	100.00	Yes
W120	6	x	-0.007	-0.007	0.00	No	100.00	Yes
	11	x	-0.007	-0.007	0.00	No	100.00	Yes
	14	x	-0.007	-0.007	0.00	No	100.00	Yes
	3	x	-0.016	-0.016	0.00	No	100.00	Yes
	4	x	-0.016	-0.016	0.00	No	100.00	Yes
	5	x	-0.007	-0.007	0.00	No	100.00	Yes
W150	6	x	-0.007	-0.007	0.00	No	100.00	Yes
	11	x	-0.007	-0.007	0.00	No	100.00	Yes
	14	x	-0.007	-0.007	0.00	No	100.00	Yes
	1	z	0.007	0.007	0.00	No	100.00	Yes
	2	z	0.007	0.007	0.00	No	100.00	Yes
	5	z	0.007	0.007	0.00	No	100.00	Yes
Di	6	z	0.007	0.007	0.00	No	100.00	Yes
	11	z	0.007	0.007	0.00	No	100.00	Yes
	14	z	0.007	0.007	0.00	No	100.00	Yes
	1	y	-0.009	-0.009	0.00	No	100.00	Yes
	2	y	-0.009	-0.009	0.00	No	100.00	Yes
	3	y	-0.014	-0.014	0.00	No	100.00	Yes
	4	y	-0.014	-0.014	0.00	No	100.00	Yes
	5	y	-0.009	-0.009	0.00	No	100.00	Yes
	6	y	-0.009	-0.009	0.00	No	100.00	Yes
	11	y	-0.009	-0.009	0.00	No	100.00	Yes
	14	y	-0.009	-0.009	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	5	y	-0.044	1.00	No
		y	-0.044	4.00	No
	6	y	-0.092	0.50	No
		y	-0.092	5.50	No
		y	-0.11	0.50	No
		y	-0.11	5.50	No
	11	y	-0.098	0.50	No
		y	-0.082	3.00	No
		y	-0.032	5.50	No
	14	y	-0.098	0.50	No

Wo	5	y	-0.082	3.00	No
		y	-0.021	5.50	No
		z	-0.056	1.00	No
		z	-0.056	4.00	No
	6	z	-0.269	0.50	No
		z	-0.269	5.50	No
		z	-0.044	0.50	No
	11	z	-0.044	3.00	No
		z	-0.089	5.50	No
		z	-0.044	0.50	No
W30	14	z	-0.044	3.00	No
		z	-0.013	5.50	No
		3	-0.047	1.00	No
		3	-0.047	4.00	No
	6	3	-0.233	0.50	No
		3	-0.233	5.50	No
		3	-0.041	0.50	No
	11	3	-0.039	3.00	No
		3	-0.082	5.50	No
		3	-0.041	0.50	No
W60	14	3	-0.039	3.00	No
		3	-0.013	5.50	No
		3	-0.03	1.00	No
		3	-0.03	4.00	No
	5	3	-0.161	0.50	No
		3	-0.161	5.50	No
		3	-0.033	0.50	No
	11	3	-0.029	3.00	No
		3	-0.067	5.50	No
		3	-0.033	0.50	No
W90	14	3	-0.029	3.00	No
		3	-0.012	5.50	No
		x	-0.022	1.00	No
		x	-0.022	4.00	No
	6	x	-0.063	0.50	No
		x	-0.063	5.50	No
		x	-0.03	0.50	No
	11	x	-0.024	3.00	No
		x	-0.059	5.50	No
		x	-0.03	0.50	No
W120	14	x	-0.024	3.00	No
		x	-0.012	5.50	No
		2	-0.03	1.00	No
		2	-0.03	4.00	No
	5	2	-0.161	0.50	No
		2	-0.161	5.50	No
		2	-0.033	0.50	No
	11	2	-0.029	3.00	No
		2	-0.067	5.50	No
		2	-0.033	0.50	No
W150	14	2	-0.029	3.00	No
		2	-0.012	5.50	No
		2	-0.047	1.00	No
		2	-0.047	4.00	No
	5	2	-0.233	0.50	No
		2	-0.233	5.50	No
		2	-0.041	0.50	No
	11	2	-0.039	3.00	No
		2	-0.082	5.50	No
		2	-0.041	0.50	No

		2	-0.039	3.00	No
		2	-0.013	5.50	No
Di	5	y	-0.054	1.00	No
		y	-0.054	4.00	No
	6	y	-0.247	0.50	No
		y	-0.247	5.50	No
	11	y	-0.048	0.50	No
		y	-0.046	3.00	No
		y	-0.097	5.50	No
	14	y	-0.048	0.50	No
		y	-0.046	3.00	No
		y	-0.018	5.50	No
WI0	5	z	-0.017	1.00	No
		z	-0.017	4.00	No
	6	z	-0.075	0.50	No
		z	-0.075	5.50	No
	11	z	-0.015	0.50	No
		z	-0.015	3.00	No
		z	-0.027	5.50	No
	14	z	-0.015	0.50	No
		z	-0.015	3.00	No
		z	-0.006	5.50	No
WI30	5	3	-0.015	1.00	No
		3	-0.015	4.00	No
	6	3	-0.066	0.50	No
		3	-0.066	5.50	No
	11	3	-0.014	0.50	No
		3	-0.013	3.00	No
		3	-0.025	5.50	No
	14	3	-0.014	0.50	No
		3	-0.013	3.00	No
		3	-0.006	5.50	No
WI60	5	3	-0.01	1.00	No
		3	-0.01	4.00	No
	6	3	-0.049	0.50	No
		3	-0.049	5.50	No
	11	3	-0.012	0.50	No
		3	-0.011	3.00	No
		3	-0.021	5.50	No
	14	3	-0.012	0.50	No
		3	-0.011	3.00	No
		3	-0.006	5.50	No
WI90	5	x	-0.008	1.00	No
		x	-0.008	4.00	No
	6	x	-0.02	0.50	No
		x	-0.02	5.50	No
	11	x	-0.011	0.50	No
		x	-0.009	3.00	No
		x	-0.019	5.50	No
	14	x	-0.011	0.50	No
		x	-0.009	3.00	No
		x	-0.006	5.50	No
WI120	5	2	-0.01	1.00	No
		2	-0.01	4.00	No
	6	2	-0.049	0.50	No
		2	-0.049	5.50	No
	11	2	-0.012	0.50	No
		2	-0.011	3.00	No
		2	-0.021	5.50	No
	14	2	-0.012	0.50	No

		2	-0.011	3.00	No
		2	-0.006	5.50	No
W1150	5	2	-0.015	1.00	No
		2	-0.015	4.00	No
	6	2	-0.066	0.50	No
		2	-0.066	5.50	No
	11	2	-0.014	0.50	No
		2	-0.013	3.00	No
		2	-0.025	5.50	No
WL0	14	2	-0.014	0.50	No
		2	-0.013	3.00	No
		2	-0.006	5.50	No
	5	z	-0.005	1.00	No
		z	-0.005	4.00	No
		z	-0.022	0.50	No
	6	z	-0.022	5.50	No
		z	-0.004	0.50	No
		z	-0.004	3.00	No
	11	z	-0.007	5.50	No
		z	-0.004	0.50	No
		z	-0.004	3.00	No
WL30	14	z	-0.001	5.50	No
		3	-0.004	1.00	No
		3	-0.004	4.00	No
	6	3	-0.019	0.50	No
		3	-0.019	5.50	No
		3	-0.003	0.50	No
	11	3	-0.003	3.00	No
		3	-0.007	5.50	No
		3	-0.003	0.50	No
	14	3	-0.003	3.00	No
		3	-0.001	5.50	No
		3	-0.003	1.00	No
WL60	5	3	-0.003	4.00	No
		3	-0.013	0.50	No
		3	-0.013	5.50	No
	6	3	-0.003	0.50	No
		3	-0.002	3.00	No
		3	-0.005	5.50	No
	11	3	-0.003	0.50	No
		3	-0.003	0.50	No
		3	-0.002	3.00	No
	14	3	-0.005	5.50	No
		3	-0.002	0.50	No
		3	-0.002	3.00	No
WL90	5	x	-0.001	5.50	No
		x	-0.002	1.00	No
		x	-0.002	4.00	No
	6	x	-0.005	0.50	No
		x	-0.005	5.50	No
		x	-0.002	0.50	No
	11	x	-0.002	3.00	No
		x	-0.005	5.50	No
		x	-0.002	0.50	No
	14	x	-0.002	3.00	No
		x	-0.001	5.50	No
		x	-0.003	1.00	No
WL120	5	2	-0.003	4.00	No
		2	-0.013	0.50	No
	6	2	-0.013	5.50	No
		2	-0.003	0.50	No
	11	2	-0.002	3.00	No
		2	-0.005	5.50	No
	14	2	-0.003	0.50	No
		2	-0.003	0.50	No
		2	-0.003	0.50	No
		2	-0.003	0.50	No

		2	-0.002	3.00	No
		2	-0.001	5.50	No
WL150	5	2	-0.004	1.00	No
		2	-0.004	4.00	No
	6	2	-0.019	0.50	No
		2	-0.019	5.50	No
	11	2	-0.003	0.50	No
		2	-0.003	3.00	No
		2	-0.007	5.50	No
	14	2	-0.003	0.50	No
		2	-0.003	3.00	No
		2	-0.001	5.50	No
LL1	1	y	-0.25	100.00	Yes
LL2	1	y	-0.25	50.00	Yes
LL3	1	y	-0.25	0.00	Yes
LLa1	5	y	-0.25	50.00	Yes
LLa2	6	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load on Left End	No	0.00	0.00	0.00
LL2	250 lb Live Load on Center	No	0.00	0.00	0.00
LL3	250 lb Live Load on Right End	No	0.00	0.00	0.00
LLa1	250 lb Live Load on Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load on Antenna 2	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
Wi60	0.00	0.00	0.00
Wi90	0.00	0.00	0.00
Wi120	0.00	0.00	0.00
Wi150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00

Current Date: 6/30/2022 4:42 PM
Units system: English

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+1.6Wo
LC2=1.2D+1.6W30
LC3=1.2D+1.6W60
LC4=1.2D+1.6W90
LC5=1.2D+1.6W120
LC6=1.2D+1.6W150
LC7=1.2D-1.6Wo
LC8=1.2D-1.6W30
LC9=1.2D-1.6W60
LC10=1.2D-1.6W90
LC11=1.2D-1.6W120
LC12=1.2D-1.6W150
LC13=0.9D+1.6Wo
LC14=0.9D+1.6W30
LC15=0.9D+1.6W60
LC16=0.9D+1.6W90
LC17=0.9D+1.6W120
LC18=0.9D+1.6W150
LC19=0.9D-1.6Wo
LC20=0.9D-1.6W30
LC21=0.9D-1.6W60
LC22=0.9D-1.6W90
LC23=0.9D-1.6W120
LC24=0.9D-1.6W150
LC25=1.2D+Di+Wi0
LC26=1.2D+Di+Wi30
LC27=1.2D+Di+Wi60
LC28=1.2D+Di+Wi90
LC29=1.2D+Di+Wi120
LC30=1.2D+Di+Wi150
LC31=1.2D+Di-Wi0
LC32=1.2D+Di-Wi30
LC33=1.2D+Di-Wi60
LC34=1.2D+Di-Wi90
LC35=1.2D+Di-Wi120
LC36=1.2D+Di-Wi150
LC37=0.9D
LC38=1.2D+1.6LL1
LC39=1.2D+1.6LL2
LC40=1.2D+1.6LL3
LC41=1.2D+WL0+LLa1
LC42=1.2D+WL30+LLa1
LC43=1.2D+WL60+LLa1
LC44=1.2D+WL90+LLa1
LC45=1.2D+WL120+LLa1
LC46=1.2D+WL150+LLa1
LC47=1.2D-WL0+LLa1
LC48=1.2D-WL30+LLa1
LC49=1.2D-WL60+LLa1
LC50=1.2D-WL90+LLa1
LC51=1.2D-WL120+LLa1
LC52=1.2D-WL150+LLa1
LC53=1.2D+WL0+LLa2
LC54=1.2D+WL30+LLa2

LC55=1.2D+WL60+LLa2
 LC56=1.2D+WL90+LLa2
 LC57=1.2D+WL120+LLa2
 LC58=1.2D+WL150+LLa2
 LC59=1.2D-WL0+LLa2
 LC60=1.2D-WL30+LLa2
 LC61=1.2D-WL60+LLa2
 LC62=1.2D-WL90+LLa2
 LC63=1.2D-WL120+LLa2
 LC64=1.2D-WL150+LLa2

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X3_16	3	LC1 at 100.00%	0.08	OK	
		4	LC7 at 100.00%	0.08	OK	
	PIPE 2-1_2x0.203	1	LC7 at 50.00%	0.29	OK	
		2	LC1 at 50.00%	0.29	OK	
		5	LC31 at 27.08%	0.15	OK	
		6	LC7 at 27.08%	0.23	OK	
		11	LC7 at 83.33%	0.03	OK	
		14	LC10 at 16.67%	0.03	OK	



Current Date: 6/30/2022 4:42 PM

Units system: English

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	1.375	0.00	0
2	0.00	1.375	1.00	0
3	-1.75	1.375	1.00	0
4	1.75	1.375	1.00	0
5	-1.585	1.375	1.00	0
6	1.585	1.375	1.00	0
7	0.00	-1.375	0.00	0
8	0.00	-1.375	1.00	0
9	-1.75	-1.375	1.00	0
10	1.75	-1.375	1.00	0
11	-1.585	-1.375	1.00	0
12	1.585	-1.375	1.00	0
13	-1.585	1.375	1.20	0
14	-1.585	-1.375	1.20	0
15	1.585	1.375	1.20	0
16	1.585	-1.375	1.20	0
17	-1.585	3.00	1.20	0
18	-1.585	-3.00	1.20	0
19	1.585	3.00	1.20	0
20	1.585	-3.00	1.20	0
26	-1.25	-4.00	1.20	0
27	-1.25	-10.00	1.20	0
34	1.25	-4.00	1.20	0

35	1.25	-10.00	1.20	0
36	-1.25	-5.00	1.20	0
37	1.25	-5.00	1.20	0
38	-1.25	-9.00	1.20	0
39	1.25	-9.00	1.20	0
40	-1.05	-5.00	1.20	0
41	-1.05	-9.00	1.20	0
42	1.05	-5.00	1.20	0
43	1.05	-9.00	1.20	0

Restraints

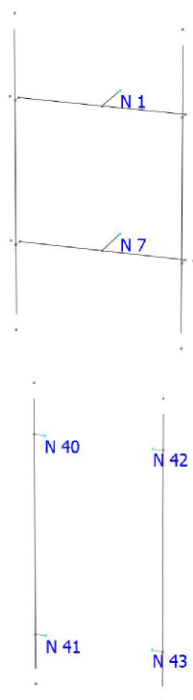
Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	0	1	0
7	1	1	1	0	1	0
40	1	1	1	0	1	0
41	1	1	1	0	1	0
42	1	1	1	0	1	0
43	1	1	1	0	1	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	4	3		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
2	10	9		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
3	1	2		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
4	7	8		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
5	19	20		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
6	17	18		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
11	26	27		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
14	34	35		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
5	315.00	0	0.00	0.00	0.00
6	315.00	0	0.00	0.00	0.00
11	315.00	0	0.00	0.00	0.00
14	315.00	0	0.00	0.00	0.00



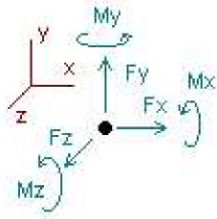


Current Date: 6/30/2022 4:43 PM

Units system: English

Analysis result

Reactions



Direction of positive forces and moments

Node	Forces [Kip]			Moments [Kip*ft]		
	FX	FY	FZ	MX	MY	MZ
Condition LC1=1.2D+1.6Wo						
1	0.21853	0.49331	0.27703	0.00000	0.70978	0.00000
7	-0.21853	0.24639	0.84137	0.00000	0.37137	0.00000
40	0.01473	0.15248	0.13020	0.00000	0.02743	0.00000
41	-0.01473	0.14352	0.22020	0.00000	0.04265	0.00000
42	-0.01407	0.14663	0.14540	0.00000	-0.02812	0.00000
43	0.01407	0.13617	0.08340	0.00000	-0.01764	0.00000
SUM	0.00000	1.31850	1.69760	0.00000	1.10547	0.00000
Condition LC2=1.2D+1.6W30						
1	0.55446	0.42874	0.06081	0.00000	0.91262	0.00000
7	0.07911	0.31096	0.65115	0.00000	0.51421	0.00000
40	0.07738	0.10689	0.09625	0.00000	0.02015	0.00000
41	0.10590	0.18911	0.15423	0.00000	0.02995	0.00000
42	0.05834	0.12232	0.10601	0.00000	-0.02059	0.00000
43	0.04688	0.16048	0.06641	0.00000	-0.01389	0.00000
SUM	0.92207	1.31850	1.13487	0.00000	1.44244	0.00000
Condition LC3=1.2D+1.6W60						
1	0.53962	0.41063	-0.08584	0.00000	0.78580	0.00000
7	0.07816	0.32908	0.51803	0.00000	0.38928	0.00000
40	0.09726	0.14336	0.04893	0.00000	0.01053	0.00000
41	0.11589	0.15264	0.09701	0.00000	0.01866	0.00000
42	0.07624	0.10003	0.05671	0.00000	-0.01088	0.00000
43	0.07468	0.18277	0.02701	0.00000	-0.00586	0.00000
SUM	0.98185	1.31850	0.66185	0.00000	1.18752	0.00000
Condition LC4=1.2D+1.6W90						
1	0.46008	0.36423	-0.31398	0.00000	0.46590	0.00000
7	-0.00248	0.37547	0.31398	0.00000	0.04751	0.00000
40	0.10973	0.12717	0.00000	0.00000	0.00000	0.00000
41	0.13827	0.16883	0.00000	0.00000	0.00000	0.00000
42	0.09033	0.10461	0.00000	0.00000	0.00000	0.00000
43	0.08247	0.17819	0.00000	0.00000	0.00000	0.00000
SUM	0.87840	1.31850	0.00000	0.00000	0.51341	0.00000

Condition **LC5=1.2D+1.6W120**

1	0.53965	0.30705	-0.54212	0.00000	0.33716	0.00000
7	0.07814	0.43265	0.10993	0.00000	-0.10095	0.00000
40	0.09726	0.14336	-0.04893	0.00000	-0.01053	0.00000
41	0.11589	0.15264	-0.09701	0.00000	-0.01866	0.00000
42	0.07624	0.10003	-0.05671	0.00000	0.01088	0.00000
43	0.07468	0.18277	-0.02701	0.00000	0.00586	0.00000
SUM	0.98185	1.31850	-0.66185	0.00000	0.22377	0.00000

Condition **LC6=1.2D+1.6W150**

1	0.55449	0.27470	-0.75583	0.00000	0.27893	0.00000
7	0.07907	0.46501	-0.09054	0.00000	-0.18468	0.00000
40	0.07738	0.10689	-0.09625	0.00000	-0.02015	0.00000
41	0.10590	0.18911	-0.15423	0.00000	-0.02995	0.00000
42	0.05834	0.12232	-0.10601	0.00000	0.02059	0.00000
43	0.04688	0.16048	-0.06641	0.00000	0.01389	0.00000
SUM	0.92207	1.31850	-1.26927	0.00000	0.07864	0.00000

Condition **LC7=1.2D-1.6W_o**

1	0.21859	0.24801	-0.90491	0.00000	-0.31564	0.00000
7	-0.21859	0.49169	-0.21349	0.00000	-0.76390	0.00000
40	0.01473	0.15248	-0.13020	0.00000	-0.02743	0.00000
41	-0.01473	0.14352	-0.22020	0.00000	-0.04265	0.00000
42	-0.01407	0.14663	-0.14540	0.00000	0.02812	0.00000
43	0.01407	0.13617	-0.08340	0.00000	0.01764	0.00000
SUM	0.00000	1.31850	-1.69760	0.00000	-1.10386	0.00000

Condition **LC8=1.2D-1.6W30**

1	-0.11735	0.31262	-0.68873	0.00000	-0.51984	0.00000
7	-0.51622	0.42708	-0.02324	0.00000	-0.90810	0.00000
40	-0.04792	0.19806	-0.09625	0.00000	-0.02015	0.00000
41	-0.13536	0.09794	-0.15423	0.00000	-0.02995	0.00000
42	-0.08648	0.17094	-0.10601	0.00000	0.02059	0.00000
43	-0.01874	0.11186	-0.06641	0.00000	0.01389	0.00000
SUM	-0.92207	1.31850	-1.13487	0.00000	-1.44355	0.00000

Condition **LC9=1.2D-1.6W60**

1	-0.10251	0.33064	-0.54208	0.00000	-0.39273	0.00000
7	-0.51528	0.40906	0.10990	0.00000	-0.78287	0.00000
40	-0.06780	0.16160	-0.04893	0.00000	-0.01053	0.00000
41	-0.14534	0.13440	-0.09701	0.00000	-0.01866	0.00000
42	-0.10438	0.19322	-0.05671	0.00000	0.01088	0.00000
43	-0.04654	0.08958	-0.02701	0.00000	0.00586	0.00000
SUM	-0.98185	1.31850	-0.66185	0.00000	-1.18805	0.00000

Condition **LC10=1.2D-1.6W90**

1	-0.02296	0.37696	-0.31396	0.00000	-0.07246	0.00000
7	-0.43464	0.36274	0.31396	0.00000	-0.44071	0.00000
40	-0.08027	0.17779	0.00000	0.00000	0.00000	0.00000
41	-0.16773	0.11821	0.00000	0.00000	0.00000	0.00000
42	-0.11847	0.18865	0.00000	0.00000	0.00000	0.00000
43	-0.05433	0.09415	0.00000	0.00000	0.00000	0.00000
SUM	-0.87840	1.31850	0.00000	0.00000	-0.51317	0.00000

Condition **LC11=1.2D-1.6W120**

1	-0.10253	0.43412	-0.08581	0.00000	0.05668	0.00000
7	-0.51525	0.30558	0.51799	0.00000	-0.29184	0.00000
40	-0.06780	0.16160	0.04893	0.00000	0.01053	0.00000
41	-0.14534	0.13440	0.09701	0.00000	0.01866	0.00000
42	-0.10438	0.19322	0.05671	0.00000	-0.01088	0.00000
43	-0.04654	0.08958	0.02701	0.00000	-0.00586	0.00000
SUM	-0.98185	1.31850	0.66185	0.00000	-0.22271	0.00000

Condition **LC12=1.2D-1.6W150**

1	-0.11738	0.46644	0.12792	0.00000	0.11542	0.00000
7	-0.51618	0.27326	0.71845	0.00000	-0.20759	0.00000
40	-0.04792	0.19806	0.09625	0.00000	0.02015	0.00000
41	-0.13536	0.09794	0.15423	0.00000	0.02995	0.00000
42	-0.08648	0.17094	0.10601	0.00000	-0.02059	0.00000
43	-0.01874	0.11186	0.06641	0.00000	-0.01389	0.00000
SUM	-0.92207	1.31850	1.26927	0.00000	-0.07656	0.00000

Condition **LC13=0.9D+1.6Wo**

1	0.16390	0.40055	0.35573	0.00000	0.66058	0.00000
7	-0.16390	0.15423	0.76267	0.00000	0.42050	0.00000
40	0.01105	0.11436	0.13020	0.00000	0.02743	0.00000
41	-0.01105	0.10764	0.22020	0.00000	0.04265	0.00000
42	-0.01055	0.10997	0.14540	0.00000	-0.02812	0.00000
43	0.01055	0.10213	0.08340	0.00000	-0.01764	0.00000
SUM	0.00000	0.98888	1.69760	0.00000	1.10540	0.00000

Condition **LC14=0.9D+1.6W30**

1	0.49987	0.33596	0.13945	0.00000	0.86347	0.00000
7	0.13369	0.21881	0.57252	0.00000	0.56329	0.00000
40	0.07370	0.06878	0.09625	0.00000	0.02015	0.00000
41	0.10959	0.15322	0.15423	0.00000	0.02995	0.00000
42	0.06186	0.08566	0.10601	0.00000	-0.02059	0.00000
43	0.04336	0.12644	0.06641	0.00000	-0.01389	0.00000
SUM	0.92207	0.98888	1.13487	0.00000	1.44236	0.00000

Condition **LC15=0.9D+1.6W60**

1	0.48503	0.31785	-0.00727	0.00000	0.73663	0.00000
7	0.13276	0.23693	0.43945	0.00000	0.43837	0.00000
40	0.09358	0.10524	0.04893	0.00000	0.01053	0.00000
41	0.11957	0.11676	0.09701	0.00000	0.01866	0.00000
42	0.07976	0.06338	0.05671	0.00000	-0.01088	0.00000
43	0.07116	0.14872	0.02701	0.00000	-0.00586	0.00000
SUM	0.98185	0.98888	0.66185	0.00000	1.18745	0.00000

Condition **LC16=0.9D+1.6W90**

1	0.40546	0.27144	-0.23548	0.00000	0.41672	0.00000
7	0.05214	0.28333	0.23548	0.00000	0.09662	0.00000
40	0.10605	0.08905	0.00000	0.00000	0.00000	0.00000
41	0.14195	0.13295	0.00000	0.00000	0.00000	0.00000
42	0.09385	0.06795	0.00000	0.00000	0.00000	0.00000
43	0.07895	0.14415	0.00000	0.00000	0.00000	0.00000
SUM	0.87840	0.98888	0.00000	0.00000	0.51334	0.00000

Condition **LC17=0.9D+1.6W120**

1	0.48504	0.21425	-0.46369	0.00000	0.28800	0.00000
7	0.13274	0.34052	0.03151	0.00000	-0.05187	0.00000
40	0.09358	0.10524	-0.04893	0.00000	-0.01053	0.00000
41	0.11957	0.11676	-0.09701	0.00000	-0.01866	0.00000
42	0.07976	0.06338	-0.05671	0.00000	0.01088	0.00000
43	0.07116	0.14872	-0.02701	0.00000	0.00586	0.00000
SUM	0.98185	0.98888	-0.66185	0.00000	0.22369	0.00000

Condition **LC18=0.9D+1.6W150**

1	0.49990	0.18189	-0.67750	0.00000	0.22977	0.00000
7	0.13367	0.37288	-0.16887	0.00000	-0.13560	0.00000
40	0.07370	0.06878	-0.09625	0.00000	-0.02015	0.00000
41	0.10959	0.15322	-0.15423	0.00000	-0.02995	0.00000
42	0.06186	0.08566	-0.10601	0.00000	0.02059	0.00000
43	0.04336	0.12644	-0.06641	0.00000	0.01389	0.00000
SUM	0.92207	0.98888	-1.26927	0.00000	0.07856	0.00000

Condition **LC19=0.9D-1.6W0**

1	0.16394	0.15520	-0.82662	0.00000	-0.36484	0.00000
7	-0.16394	0.39958	-0.29178	0.00000	-0.71477	0.00000
40	0.01105	0.11436	-0.13020	0.00000	-0.02743	0.00000
41	-0.01105	0.10764	-0.22020	0.00000	-0.04265	0.00000
42	-0.01055	0.10997	-0.14540	0.00000	0.02812	0.00000
43	0.01055	0.10213	-0.08340	0.00000	0.01764	0.00000
SUM	0.00000	0.98888	-1.69760	0.00000	-1.10393	0.00000

Condition **LC20=0.9D-1.6W30**

1	-0.17204	0.21982	-0.61037	0.00000	-0.56909	0.00000
7	-0.46152	0.33496	-0.10160	0.00000	-0.85891	0.00000
40	-0.05160	0.15994	-0.09625	0.00000	-0.02015	0.00000
41	-0.13168	0.06206	-0.15423	0.00000	-0.02995	0.00000
42	-0.08296	0.13428	-0.10601	0.00000	0.02059	0.00000
43	-0.02226	0.07782	-0.06641	0.00000	0.01389	0.00000
SUM	-0.92207	0.98888	-1.13487	0.00000	-1.44362	0.00000

Condition **LC21=0.9D-1.6W60**

1	-0.15719	0.23785	-0.46367	0.00000	-0.44197	0.00000
7	-0.46059	0.31693	0.03148	0.00000	-0.73370	0.00000
40	-0.07148	0.12348	-0.04893	0.00000	-0.01053	0.00000
41	-0.14166	0.09852	-0.09701	0.00000	-0.01866	0.00000
42	-0.10086	0.15657	-0.05671	0.00000	0.01088	0.00000
43	-0.05006	0.05553	-0.02701	0.00000	0.00586	0.00000
SUM	-0.98185	0.98888	-0.66185	0.00000	-1.18812	0.00000

Condition **LC22=0.9D-1.6W90**

1	-0.07762	0.28418	-0.23547	0.00000	-0.12168	0.00000
7	-0.37998	0.27060	0.23547	0.00000	-0.39156	0.00000
40	-0.08395	0.13967	0.00000	0.00000	0.00000	0.00000
41	-0.16405	0.08233	0.00000	0.00000	0.00000	0.00000
42	-0.11495	0.15199	0.00000	0.00000	0.00000	0.00000
43	-0.05785	0.06011	0.00000	0.00000	0.00000	0.00000
SUM	-0.87840	0.98888	0.00000	0.00000	-0.51324	0.00000

Condition **LC23=0.9D-1.6W120**

1	-0.15721	0.34134	-0.00725	0.00000	0.00743	0.00000
7	-0.46058	0.21343	0.43943	0.00000	-0.24267	0.00000
40	-0.07148	0.12348	0.04893	0.00000	0.01053	0.00000
41	-0.14166	0.09852	0.09701	0.00000	0.01866	0.00000
42	-0.10086	0.15657	0.05671	0.00000	-0.01088	0.00000
43	-0.05006	0.05553	0.02701	0.00000	-0.00586	0.00000
SUM	-0.98185	0.98888	0.66185	0.00000	-0.22278	0.00000

Condition **LC24=0.9D-1.6W150**

1	-0.17207	0.37367	0.20658	0.00000	0.06616	0.00000
7	-0.46150	0.18111	0.63979	0.00000	-0.15841	0.00000
40	-0.05160	0.15994	0.09625	0.00000	0.02015	0.00000
41	-0.13168	0.06206	0.15423	0.00000	0.02995	0.00000
42	-0.08296	0.13428	0.10601	0.00000	-0.02059	0.00000
43	-0.02226	0.07782	0.06641	0.00000	-0.01389	0.00000
SUM	-0.92207	0.98888	1.26927	0.00000	-0.07663	0.00000

Condition **LC25=1.2D+Di+W10**

1	0.44104	0.74052	-0.50676	0.00000	0.48394	0.00000
7	-0.44104	0.69218	0.69076	0.00000	-0.29940	0.00000
40	0.02428	0.24518	0.02100	0.00000	0.00443	0.00000
41	-0.02428	0.24182	0.03600	0.00000	0.00697	0.00000
42	-0.01967	0.20432	0.02362	0.00000	-0.00455	0.00000
43	0.01967	0.19048	0.01238	0.00000	-0.00265	0.00000
SUM	0.00000	2.31450	0.27700	0.00000	0.18874	0.00000

Condition **LC26=1.2D+Di+W130**

1	0.50211	0.72944	-0.54373	0.00000	0.52357	0.00000
7	-0.38756	0.70326	0.65828	0.00000	-0.27115	0.00000
40	0.03780	0.23695	0.01352	0.00000	0.00286	0.00000
41	-0.00103	0.25005	0.02325	0.00000	0.00450	0.00000
42	-0.00447	0.20052	0.01520	0.00000	-0.00293	0.00000
43	0.02780	0.19428	0.00813	0.00000	-0.00174	0.00000
SUM	0.17466	2.31450	0.17466	0.00000	0.25511	0.00000

Condition **LC27=1.2D+Di+W160**

1	0.48528	0.72675	-0.56052	0.00000	0.49129	0.00000
7	-0.40184	0.70596	0.64396	0.00000	-0.30309	0.00000
40	0.03586	0.23822	0.01158	0.00000	0.00244	0.00000
41	-0.00474	0.24878	0.01953	0.00000	0.00378	0.00000
42	-0.00676	0.20179	0.01290	0.00000	-0.00250	0.00000
43	0.02727	0.19301	0.00760	0.00000	-0.00160	0.00000
SUM	0.13506	2.31450	0.13506	0.00000	0.19032	0.00000

Condition **LC28=1.2D+Di+W190**

1	0.47194	0.71786	-0.60470	0.00000	0.43365	0.00000
7	-0.41594	0.71484	0.60470	0.00000	-0.36579	0.00000
40	0.03878	0.23444	0.00000	0.00000	0.00000	0.00000
41	0.00022	0.25256	0.00000	0.00000	0.00000	0.00000
42	-0.00354	0.20343	0.00000	0.00000	0.00000	0.00000
43	0.02954	0.19137	0.00000	0.00000	0.00000	0.00000
SUM	0.12100	2.31450	0.00000	0.00000	0.06786	0.00000

Condition **LC29=1.2D+Di+W1120**

1	0.48529	0.70702	-0.64888	0.00000	0.40821	0.00000
7	-0.40185	0.72568	0.56545	0.00000	-0.39483	0.00000
40	0.03586	0.23822	-0.01158	0.00000	-0.00244	0.00000
41	-0.00474	0.24878	-0.01953	0.00000	-0.00378	0.00000
42	-0.00676	0.20179	-0.01290	0.00000	0.00250	0.00000
43	0.02727	0.19301	-0.00760	0.00000	0.00160	0.00000
SUM	0.13506	2.31450	-0.13506	0.00000	0.01126	0.00000

Condition **LC30=1.2D+Di+W1150**

1	0.50212	0.70279	-0.66569	0.00000	0.41577	0.00000
7	-0.38757	0.72991	0.55113	0.00000	-0.39194	0.00000
40	0.03780	0.23695	-0.01352	0.00000	-0.00286	0.00000
41	-0.00103	0.25005	-0.02325	0.00000	-0.00450	0.00000
42	-0.00447	0.20052	-0.01520	0.00000	0.00293	0.00000
43	0.02780	0.19428	-0.00813	0.00000	0.00174	0.00000
SUM	0.17466	2.31450	-0.17466	0.00000	0.02114	0.00000

Condition **LC31=1.2D+Di-W10**

1	0.44106	0.69771	-0.70263	0.00000	0.31049	0.00000
7	-0.44106	0.73499	0.51863	0.00000	-0.49368	0.00000
40	0.02428	0.24518	-0.02100	0.00000	-0.00443	0.00000
41	-0.02428	0.24182	-0.03600	0.00000	-0.00697	0.00000
42	-0.01967	0.20432	-0.02362	0.00000	0.00455	0.00000
43	0.01967	0.19048	-0.01238	0.00000	0.00265	0.00000
SUM	0.00000	2.31450	-0.27700	0.00000	-0.18739	0.00000

Condition **LC32=1.2D+Di-W130**

1	0.37999	0.70879	-0.66567	0.00000	0.27082	0.00000
7	-0.49454	0.72391	0.55112	0.00000	-0.52197	0.00000
40	0.01075	0.25341	-0.01352	0.00000	-0.00286	0.00000
41	-0.04752	0.23359	-0.02325	0.00000	-0.00450	0.00000
42	-0.03487	0.20812	-0.01520	0.00000	0.00293	0.00000
43	0.01154	0.18668	-0.00813	0.00000	0.00174	0.00000
SUM	-0.17466	2.31450	-0.17466	0.00000	-0.25384	0.00000

Condition **LC33=1.2D+Di-W160**

1	0.39681	0.71149	-0.64887	0.00000	0.30311	0.00000
7	-0.48025	0.72122	0.56543	0.00000	-0.49002	0.00000
40	0.01270	0.25215	-0.01158	0.00000	-0.00244	0.00000
41	-0.04381	0.23485	-0.01953	0.00000	-0.00378	0.00000
42	-0.03257	0.20685	-0.01290	0.00000	0.00250	0.00000
43	0.01207	0.18795	-0.00760	0.00000	0.00160	0.00000
SUM	-0.13506	2.31450	-0.13506	0.00000	-0.18903	0.00000

Condition **LC34=1.2D+Di-W190**

1	0.41016	0.72037	-0.60469	0.00000	0.36076	0.00000
7	-0.46616	0.71233	0.60469	0.00000	-0.42731	0.00000
40	0.00978	0.25593	0.00000	0.00000	0.00000	0.00000
41	-0.04878	0.23107	0.00000	0.00000	0.00000	0.00000
42	-0.03579	0.20522	0.00000	0.00000	0.00000	0.00000
43	0.00979	0.18958	0.00000	0.00000	0.00000	0.00000
SUM	-0.12100	2.31450	0.00000	0.00000	-0.06655	0.00000

Condition **LC35=1.2D+Di-WI120**

1	0.39681	0.73121	-0.56051	0.00000	0.38621	0.00000
7	-0.48024	0.70149	0.64395	0.00000	-0.39825	0.00000
40	0.01270	0.25215	0.01158	0.00000	0.00244	0.00000
41	-0.04381	0.23485	0.01953	0.00000	0.00378	0.00000
42	-0.03257	0.20685	0.01290	0.00000	-0.00250	0.00000
43	0.01207	0.18795	0.00760	0.00000	-0.00160	0.00000
SUM	-0.13506	2.31450	0.13506	0.00000	-0.00992	0.00000

Condition **LC36=1.2D+Di-WI150**

1	0.37998	0.73543	-0.54371	0.00000	0.37866	0.00000
7	-0.49453	0.69727	0.65826	0.00000	-0.40113	0.00000
40	0.01075	0.25341	0.01352	0.00000	0.00286	0.00000
41	-0.04752	0.23359	0.02325	0.00000	0.00450	0.00000
42	-0.03487	0.20812	0.01520	0.00000	-0.00293	0.00000
43	0.01154	0.18668	0.00813	0.00000	-0.00174	0.00000
SUM	-0.17466	2.31450	0.17466	0.00000	-0.01978	0.00000

Condition **LC37=0.9D**

1	0.16392	0.27781	-0.23547	0.00000	0.14754	0.00000
7	-0.16392	0.27697	0.23547	0.00000	-0.14745	0.00000
40	0.01105	0.11436	0.00000	0.00000	0.00000	0.00000
41	-0.01105	0.10764	0.00000	0.00000	0.00000	0.00000
42	-0.01055	0.10997	0.00000	0.00000	0.00000	0.00000
43	0.01055	0.10213	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	0.98888	0.00000	0.00000	0.00009	0.00000

Condition **LC38=1.2D+1.6LL1**

1	0.47311	0.58188	-0.45949	0.00000	0.44762	0.00000
7	-0.47311	0.55782	0.45949	0.00000	-0.44713	0.00000
40	0.01473	0.15248	0.00000	0.00000	0.00000	0.00000
41	-0.01473	0.14352	0.00000	0.00000	0.00000	0.00000
42	-0.01407	0.14663	0.00000	0.00000	0.00000	0.00000
43	0.01407	0.13617	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	1.71850	0.00000	0.00000	0.00049	0.00000

Condition **LC39=1.2D+1.6LL2**

1	0.21859	0.61614	-0.45943	0.00000	0.19683	0.00000
7	-0.21859	0.52356	0.45943	0.00000	-0.19657	0.00000
40	0.01473	0.15248	0.00000	0.00000	0.00000	0.00000
41	-0.01473	0.14352	0.00000	0.00000	0.00000	0.00000
42	-0.01407	0.14663	0.00000	0.00000	0.00000	0.00000
43	0.01407	0.13617	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	1.71850	0.00000	0.00000	0.00026	0.00000

Condition **LC40=1.2D+1.6LL3**

1	-0.03597	0.58168	-0.45954	0.00000	-0.05399	0.00000
7	0.03597	0.55802	0.45954	0.00000	0.05398	0.00000
40	0.01473	0.15248	0.00000	0.00000	0.00000	0.00000
41	-0.01473	0.14352	0.00000	0.00000	0.00000	0.00000
42	-0.01407	0.14663	0.00000	0.00000	0.00000	0.00000
43	0.01407	0.13617	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	1.71850	0.00000	0.00000	-0.00001	0.00000

Condition **LC41=1.2D+WL0+LLa1**

1	0.07447	0.50243	-0.39430	0.00000	0.09247	0.00000
7	-0.07447	0.48727	0.44830	0.00000	-0.03850	0.00000
40	0.01473	0.15248	0.00563	0.00000	0.00118	0.00000
41	-0.01473	0.14352	0.00937	0.00000	0.00182	0.00000
42	-0.01407	0.14663	0.00637	0.00000	-0.00122	0.00000
43	0.01407	0.13617	0.00263	0.00000	-0.00058	0.00000

SUM	0.00000	1.56850	0.07800	0.00000	0.05517	0.00000
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Condition **LC42=1.2D+WL30+LLa1**

1	0.09176	0.49912	-0.40581	0.00000	0.10353	0.00000
7	-0.05923	0.49059	0.43834	0.00000	-0.03080	0.00000
40	0.01756	0.14995	0.00283	0.00000	0.00062	0.00000
41	-0.00836	0.14605	0.00636	0.00000	0.00122	0.00000
42	-0.01071	0.14536	0.00336	0.00000	-0.00064	0.00000
43	0.01566	0.13744	0.00159	0.00000	-0.00035	0.00000

SUM	0.04667	1.56850	0.04667	0.00000	0.07358	0.00000
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Condition **LC43=1.2D+WL60+LLa1**

1	0.08655	0.49819	-0.41100	0.00000	0.09195	0.00000
7	-0.06392	0.49151	0.43363	0.00000	-0.04230	0.00000
40	0.01738	0.14995	0.00265	0.00000	0.00056	0.00000
41	-0.01031	0.14605	0.00442	0.00000	0.00086	0.00000
42	-0.01106	0.14663	0.00301	0.00000	-0.00057	0.00000
43	0.01531	0.13617	0.00124	0.00000	-0.00027	0.00000

SUM	0.03394	1.56850	0.03394	0.00000	0.05021	0.00000
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Condition **LC44=1.2D+WL90+LLa1**

1	0.08219	0.49584	-0.42306	0.00000	0.07617	0.00000
7	-0.06819	0.49386	0.42306	0.00000	-0.05929	0.00000
40	0.01735	0.14979	0.00000	0.00000	0.00000	0.00000
41	-0.00835	0.14621	0.00000	0.00000	0.00000	0.00000
42	-0.01094	0.14573	0.00000	0.00000	0.00000	0.00000
43	0.01594	0.13707	0.00000	0.00000	0.00000	0.00000

SUM	0.02800	1.56850	0.00000	0.00000	0.01688	0.00000
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Condition **LC45=1.2D+WL120+LLa1**

1	0.08655	0.49293	-0.43512	0.00000	0.07083	0.00000
7	-0.06392	0.49677	0.41250	0.00000	-0.06602	0.00000
40	0.01738	0.14995	-0.00265	0.00000	-0.00056	0.00000
41	-0.01031	0.14605	-0.00442	0.00000	-0.00086	0.00000
42	-0.01106	0.14663	-0.00301	0.00000	0.00057	0.00000
43	0.01531	0.13617	-0.00124	0.00000	0.00027	0.00000

SUM	0.03394	1.56850	-0.03394	0.00000	0.00425	0.00000
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Condition **LC46=1.2D+WL150+LLa1**

1	0.09176	0.49146	-0.44032	0.00000	0.07164	0.00000
7	-0.05923	0.49824	0.40779	0.00000	-0.06615	0.00000
40	0.01756	0.14995	-0.00283	0.00000	-0.00062	0.00000
41	-0.00836	0.14605	-0.00636	0.00000	-0.00122	0.00000
42	-0.01071	0.14536	-0.00336	0.00000	0.00064	0.00000
43	0.01566	0.13744	-0.00159	0.00000	0.00035	0.00000

SUM	0.04667	1.56850	-0.04667	0.00000	0.00464	0.00000
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Condition **LC47=1.2D-WL0+LLa1**

1	0.07447	0.48987	-0.45182	0.00000	0.04164	0.00000
7	-0.07447	0.49983	0.39782	0.00000	-0.09545	0.00000
40	0.01473	0.15248	-0.00563	0.00000	-0.00118	0.00000
41	-0.01473	0.14352	-0.00937	0.00000	-0.00182	0.00000
42	-0.01407	0.14663	-0.00637	0.00000	0.00122	0.00000
43	0.01407	0.13617	-0.00263	0.00000	0.00058	0.00000
SUM	0.00000	1.56850	-0.07800	0.00000	-0.05501	0.00000

Condition **LC48=1.2D-WL30+LLa1**

1	0.05718	0.49319	-0.44032	0.00000	0.03058	0.00000
7	-0.08970	0.49651	0.40779	0.00000	-0.10316	0.00000
40	0.01190	0.15501	-0.00283	0.00000	-0.00062	0.00000
41	-0.02109	0.14099	-0.00636	0.00000	-0.00122	0.00000
42	-0.01743	0.14790	-0.00336	0.00000	0.00064	0.00000
43	0.01248	0.13490	-0.00159	0.00000	0.00035	0.00000
SUM	-0.04667	1.56850	-0.04667	0.00000	-0.07343	0.00000

Condition **LC49=1.2D-WL60+LLa1**

1	0.06238	0.49412	-0.43512	0.00000	0.04216	0.00000
7	-0.08501	0.49559	0.41249	0.00000	-0.09165	0.00000
40	0.01208	0.15501	-0.00265	0.00000	-0.00056	0.00000
41	-0.01915	0.14099	-0.00442	0.00000	-0.00086	0.00000
42	-0.01707	0.14663	-0.00301	0.00000	0.00057	0.00000
43	0.01283	0.13617	-0.00124	0.00000	0.00027	0.00000
SUM	-0.03394	1.56850	-0.03394	0.00000	-0.05006	0.00000

Condition **LC50=1.2D-WL90+LLa1**

1	0.06674	0.49647	-0.42306	0.00000	0.05794	0.00000
7	-0.08074	0.49324	0.42306	0.00000	-0.07466	0.00000
40	0.01210	0.15517	0.00000	0.00000	0.00000	0.00000
41	-0.02110	0.14083	0.00000	0.00000	0.00000	0.00000
42	-0.01719	0.14753	0.00000	0.00000	0.00000	0.00000
43	0.01219	0.13527	0.00000	0.00000	0.00000	0.00000
SUM	-0.02800	1.56850	0.00000	0.00000	-0.01672	0.00000

Condition **LC51=1.2D-WL120+LLa1**

1	0.06238	0.49937	-0.41100	0.00000	0.06328	0.00000
7	-0.08501	0.49033	0.43363	0.00000	-0.06794	0.00000
40	0.01208	0.15501	0.00265	0.00000	0.00056	0.00000
41	-0.01915	0.14099	0.00442	0.00000	0.00086	0.00000
42	-0.01707	0.14663	0.00301	0.00000	-0.00057	0.00000
43	0.01283	0.13617	0.00124	0.00000	-0.00027	0.00000
SUM	-0.03394	1.56850	0.03394	0.00000	-0.00409	0.00000

Condition **LC52=1.2D-WL150+LLa1**

1	0.05718	0.50085	-0.40580	0.00000	0.06247	0.00000
7	-0.08970	0.48886	0.43833	0.00000	-0.06780	0.00000
40	0.01190	0.15501	0.00283	0.00000	0.00062	0.00000
41	-0.02109	0.14099	0.00636	0.00000	0.00122	0.00000
42	-0.01743	0.14790	0.00336	0.00000	-0.00064	0.00000
43	0.01248	0.13490	0.00159	0.00000	-0.00035	0.00000
SUM	-0.04667	1.56850	0.04667	0.00000	-0.00448	0.00000

Condition **LC53=1.2D+WL0+LLa2**

1	0.36265	0.50254	-0.39431	0.00000	0.35191	0.00000
7	-0.36265	0.48716	0.44831	0.00000	-0.29764	0.00000
40	0.01473	0.15248	0.00563	0.00000	0.00118	0.00000
41	-0.01473	0.14352	0.00937	0.00000	0.00182	0.00000
42	-0.01407	0.14663	0.00637	0.00000	-0.00122	0.00000
43	0.01407	0.13617	0.00263	0.00000	-0.00058	0.00000
SUM	0.00000	1.56850	0.07800	0.00000	0.05547	0.00000

Condition **LC54=1.2D+WL30+LLa2**

1	0.37992	0.49923	-0.40581	0.00000	0.36294	0.00000
7	-0.34739	0.49048	0.43834	0.00000	-0.28991	0.00000
40	0.01756	0.14995	0.00283	0.00000	0.00062	0.00000
41	-0.00836	0.14605	0.00636	0.00000	0.00122	0.00000
42	-0.01071	0.14536	0.00336	0.00000	-0.00064	0.00000
43	0.01566	0.13744	0.00159	0.00000	-0.00035	0.00000
SUM	0.04667	1.56850	0.04667	0.00000	0.07388	0.00000

Condition **LC55=1.2D+WL60+LLa2**

1	0.37472	0.49830	-0.41100	0.00000	0.35137	0.00000
7	-0.35209	0.49140	0.43363	0.00000	-0.30143	0.00000
40	0.01738	0.14995	0.00265	0.00000	0.00056	0.00000
41	-0.01031	0.14605	0.00442	0.00000	0.00086	0.00000
42	-0.01106	0.14663	0.00301	0.00000	-0.00057	0.00000
43	0.01531	0.13617	0.00124	0.00000	-0.00027	0.00000
SUM	0.03394	1.56850	0.03394	0.00000	0.05051	0.00000

Condition **LC56=1.2D+WL90+LLa2**

1	0.37037	0.49595	-0.42306	0.00000	0.33561	0.00000
7	-0.35637	0.49375	0.42306	0.00000	-0.31843	0.00000
40	0.01735	0.14979	0.00000	0.00000	0.00000	0.00000
41	-0.00835	0.14621	0.00000	0.00000	0.00000	0.00000
42	-0.01094	0.14573	0.00000	0.00000	0.00000	0.00000
43	0.01594	0.13707	0.00000	0.00000	0.00000	0.00000
SUM	0.02800	1.56850	0.00000	0.00000	0.01718	0.00000

Condition **LC57=1.2D+WL120+LLa2**

1	0.37472	0.49305	-0.43512	0.00000	0.33027	0.00000
7	-0.35210	0.49666	0.41250	0.00000	-0.32515	0.00000
40	0.01738	0.14995	-0.00265	0.00000	-0.00056	0.00000
41	-0.01031	0.14605	-0.00442	0.00000	-0.00086	0.00000
42	-0.01106	0.14663	-0.00301	0.00000	0.00057	0.00000
43	0.01531	0.13617	-0.00124	0.00000	0.00027	0.00000
SUM	0.03394	1.56850	-0.03394	0.00000	0.00455	0.00000

Condition **LC58=1.2D+WL150+LLa2**

1	0.37992	0.49157	-0.44032	0.00000	0.33107	0.00000
7	-0.34740	0.49813	0.40779	0.00000	-0.32528	0.00000
40	0.01756	0.14995	-0.00283	0.00000	-0.00062	0.00000
41	-0.00836	0.14605	-0.00636	0.00000	-0.00122	0.00000
42	-0.01071	0.14536	-0.00336	0.00000	0.00064	0.00000
43	0.01566	0.13744	-0.00159	0.00000	0.00035	0.00000
SUM	0.04667	1.56850	-0.04667	0.00000	0.00494	0.00000

Condition **LC59=1.2D-WL0+LLa2**

1	0.36266	0.48998	-0.45182	0.00000	0.30110	0.00000
7	-0.36266	0.49972	0.39782	0.00000	-0.35461	0.00000
40	0.01473	0.15248	-0.00563	0.00000	-0.00118	0.00000
41	-0.01473	0.14352	-0.00937	0.00000	-0.00182	0.00000
42	-0.01407	0.14663	-0.00637	0.00000	0.00122	0.00000
43	0.01407	0.13617	-0.00263	0.00000	0.00058	0.00000
SUM	0.00000	1.56850	-0.07800	0.00000	-0.05471	0.00000

Condition **LC60=1.2D-WL30+LLa2**

1	0.34539	0.49330	-0.44032	0.00000	0.29006	0.00000
7	-0.37791	0.49640	0.40779	0.00000	-0.36234	0.00000
40	0.01190	0.15501	-0.00283	0.00000	-0.00062	0.00000
41	-0.02109	0.14099	-0.00636	0.00000	-0.00122	0.00000
42	-0.01743	0.14790	-0.00336	0.00000	0.00064	0.00000
43	0.01248	0.13490	-0.00159	0.00000	0.00035	0.00000
SUM	-0.04667	1.56850	-0.04667	0.00000	-0.07313	0.00000

Condition **LC61=1.2D-WL60+LLa2**

1	0.35059	0.49423	-0.43512	0.00000	0.30163	0.00000
7	-0.37321	0.49548	0.41249	0.00000	-0.35082	0.00000
40	0.01208	0.15501	-0.00265	0.00000	-0.00056	0.00000
41	-0.01915	0.14099	-0.00442	0.00000	-0.00086	0.00000
42	-0.01707	0.14663	-0.00301	0.00000	0.00057	0.00000
43	0.01283	0.13617	-0.00124	0.00000	0.00027	0.00000
SUM	-0.03394	1.56850	-0.03394	0.00000	-0.04976	0.00000

Condition **LC62=1.2D-WL90+LLa2**

1	0.35493	0.49658	-0.42306	0.00000	0.31739	0.00000
7	-0.36893	0.49313	0.42306	0.00000	-0.33382	0.00000
40	0.01210	0.15517	0.00000	0.00000	0.00000	0.00000
41	-0.02110	0.14083	0.00000	0.00000	0.00000	0.00000
42	-0.01719	0.14753	0.00000	0.00000	0.00000	0.00000
43	0.01219	0.13527	0.00000	0.00000	0.00000	0.00000
SUM	-0.02800	1.56850	0.00000	0.00000	-0.01642	0.00000

Condition **LC63=1.2D-WL120+LLa2**

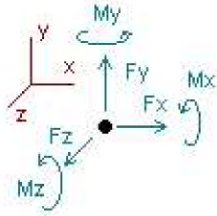
1	0.35058	0.49948	-0.41100	0.00000	0.32274	0.00000
7	-0.37321	0.49022	0.43363	0.00000	-0.32710	0.00000
40	0.01208	0.15501	0.00265	0.00000	0.00056	0.00000
41	-0.01915	0.14099	0.00442	0.00000	0.00086	0.00000
42	-0.01707	0.14663	0.00301	0.00000	-0.00057	0.00000
43	0.01283	0.13617	0.00124	0.00000	-0.00027	0.00000
SUM	-0.03394	1.56850	0.03394	0.00000	-0.00380	0.00000

Condition **LC64=1.2D-WL150+LLa2**

1	0.34538	0.50096	-0.40581	0.00000	0.32194	0.00000
7	-0.37791	0.48875	0.43833	0.00000	-0.32697	0.00000
40	0.01190	0.15501	0.00283	0.00000	0.00062	0.00000
41	-0.02109	0.14099	0.00636	0.00000	0.00122	0.00000
42	-0.01743	0.14790	0.00336	0.00000	-0.00064	0.00000
43	0.01248	0.13490	0.00159	0.00000	-0.00035	0.00000
SUM	-0.04667	1.56850	0.04667	0.00000	-0.00418	0.00000

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2D+1.6Wo
LC2=1.2D+1.6W30
LC3=1.2D+1.6W60
LC4=1.2D+1.6W90
LC5=1.2D+1.6W120
LC6=1.2D+1.6W150
LC7=1.2D-1.6Wo
LC8=1.2D-1.6W30
LC9=1.2D-1.6W60
LC10=1.2D-1.6W90
LC11=1.2D-1.6W120
LC12=1.2D-1.6W150
LC13=0.9D+1.6Wo
LC14=0.9D+1.6W30
LC15=0.9D+1.6W60
LC16=0.9D+1.6W90
LC17=0.9D+1.6W120
LC18=0.9D+1.6W150
LC19=0.9D-1.6Wo
LC20=0.9D-1.6W30
LC21=0.9D-1.6W60
LC22=0.9D-1.6W90
LC23=0.9D-1.6W120
LC24=0.9D-1.6W150
LC25=1.2D+Di+Wi0
LC26=1.2D+Di+Wi30
LC27=1.2D+Di+Wi60
LC28=1.2D+Di+Wi90
LC29=1.2D+Di+Wi120
LC30=1.2D+Di+Wi150
LC31=1.2D+Di-Wi0
LC32=1.2D+Di-Wi30
LC33=1.2D+Di-Wi60
LC34=1.2D+Di-Wi90
LC35=1.2D+Di-Wi120
LC36=1.2D+Di-Wi150
LC37=0.9D
LC38=1.2D+1.6LL1
LC39=1.2D+1.6LL2
LC40=1.2D+1.6LL3
LC41=1.2D+WLi0+LLa1
LC42=1.2D+WLi30+LLa1
LC43=1.2D+WLi60+LLa1

LC44=1.2D+WL90+LLa1
 LC45=1.2D+WL120+LLa1
 LC46=1.2D+WL150+LLa1
 LC47=1.2D-WL0+LLa1
 LC48=1.2D-WL30+LLa1
 LC49=1.2D-WL60+LLa1
 LC50=1.2D-WL90+LLa1
 LC51=1.2D-WL120+LLa1
 LC52=1.2D-WL150+LLa1
 LC53=1.2D+WL0+LLa2
 LC54=1.2D+WL30+LLa2
 LC55=1.2D+WL60+LLa2
 LC56=1.2D+WL90+LLa2
 LC57=1.2D+WL120+LLa2
 LC58=1.2D+WL150+LLa2
 LC59=1.2D-WL0+LLa2
 LC60=1.2D-WL30+LLa2
 LC61=1.2D-WL60+LLa2
 LC62=1.2D-WL90+LLa2
 LC63=1.2D-WL120+LLa2
 LC64=1.2D-WL150+LLa2

Node		Forces						Moments					
		Fx [Kip]	lc	Fy [Kip]	lc	Fz [Kip]	lc	Mx [Kip*ft]	lc	My [Kip*ft]	lc	Mz [Kip*ft]	lc
1	Max	0.554	LC6	0.741	LC25	0.356	LC13	0.00000	LC1	0.91262	LC2	0.00000	LC1
	Min	-0.172	LC24	0.155	LC19	-0.905	LC7	0.00000	LC1	-0.56909	LC20	0.00000	LC1
7	Max	0.134	LC14	0.735	LC31	0.841	LC1	0.00000	LC1	0.56329	LC14	0.00000	LC1
	Min	-0.516	LC8	0.154	LC13	-0.292	LC19	0.00000	LC1	-0.90810	LC8	0.00000	LC1
40	Max	0.110	LC4	0.256	LC34	0.130	LC1	0.00000	LC1	0.02743	LC1	0.00000	LC1
	Min	-0.084	LC22	0.069	LC14	-0.130	LC7	0.00000	LC1	-0.02743	LC7	0.00000	LC1
41	Max	0.142	LC16	0.253	LC28	0.220	LC13	0.00000	LC1	0.04265	LC13	0.00000	LC1
	Min	-0.168	LC10	0.062	LC24	-0.220	LC19	0.00000	LC1	-0.04265	LC19	0.00000	LC1
42	Max	0.094	LC16	0.208	LC36	0.145	LC13	0.00000	LC1	0.02812	LC19	0.00000	LC1
	Min	-0.118	LC10	0.063	LC15	-0.145	LC19	0.00000	LC1	-0.02812	LC13	0.00000	LC1
43	Max	0.082	LC4	0.194	LC30	0.083	LC1	0.00000	LC1	0.01764	LC7	0.00000	LC1
	Min	-0.058	LC22	0.056	LC21	-0.083	LC7	0.00000	LC1	-0.01764	LC1	0.00000	LC1



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Connection Check

Date: 6/30/2022
Project Name: EAST HAVEN 5 CT
Designed By: CL Checked By: MSC



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CHECK THRU BOLT CONNECTION CAPACITY → PROPOSED ANCHORS AT ANTENNA MOUNT

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A325 5/8" Threaded Rod

Allowable Tensile Load =

$F_{Tall} = 13806$ lbs.

Allowable Shear Load =

$F_{Vall} = 8283$ lbs.

CONNECTION PLATE CONFIGURATION (4-BOLTS)

$N_{BOLT\ ROWS}$	=	2	rows
N_{BOLTS}	=	2	bolts/row
S_Y	=	6	in (Min.)
S_X	=	6	in (Min.)

TENSILE FORCES

Moment in X axis: 0 lb-ft. (See Bentley Output)

Couple Reaction from M_X : 0 lbs.

Moment in Y axis: 913 lb-ft. (See Bentley Output)

Couple Reaction from M_Y : 3652 lbs.

Reaction in Z direction: 905 lbs. (See Bentley Output)

Resultant: 2052 lbs.

SHEAR FORCES

Moment in Z axis: 0 lb-ft. (See Bentley Output)

Couple Reaction from M_Z : 0 lbs.

Reaction in X direction: 554 lbs. (See Bentley Output)

Reaction in Y direction: 741 lbs. (See Bentley Output)

Resultant: 231 lbs.

Date: 6/30/2022
Project Name: EAST HAVEN 5 CT
Designed By: CL Checked By: MSC



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(CONT.)

Tension Design Load / Bolts =

$$f_t = 2052.25 \text{ lbs.} < 13806 \text{ lbs.} \text{ Therefore, OK !}$$

Shear Design Load / Bolts=

$$f_v = 231.30 \text{ lbs.} < 8283.5 \text{ lbs.} \text{ Therefore, OK !}$$

CHECK COMBINED TENSION AND SHEAR

$$\begin{array}{rclclcl} f_t / F_T & + & f_v / F_v & \leq & 1.0 \\ 0.149 & + & 0.028 & = & 0.177 < 1.0 \text{ Therefore, OK !} \end{array}$$

Date: 6/30/2022

Project Name: EAST HAVEN 5 CT

Designed By: CL Checked By: MSC



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Design Group LLC

CHECK THREADED ROD CONNECTION CAPACITY → PROPOSED ANCHORS AT RRH MOUNT

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 5/8" Threaded Rod

Allowable Tensile Load =

$F_{Tall} = 6673$ lbs.

Allowable Shear Load =

$F_{Vall} = 4004$ lbs.

CONNECTION PLATE CONFIGURATION (2-BOLTS)

$N_{BOLT\ ROWS}$	=	2 rows
N_{BOLTS}	=	1 bolts/row
S_y	=	6 in (Min.)

TENSILE FORCES

Moment in Y axis: 43 lb-ft. (See Bentley Output)

Couple Reaction from M_y : 172 lbs.

Reaction in Z direction: 220 lbs. (See Bentley Output)

Resultant: 282 lbs.

SHEAR FORCES

Reaction in X direction: 168 lbs. (See Bentley Output)

Reaction in Y direction: 253 lbs. (See Bentley Output)

Resultant: 152 lbs.

Date: 6/30/2022

Project Name: EAST HAVEN 5 CT

Designed By: CL Checked By: MSC



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Design Group LLC

(CONT.)

Tension Design Load /Bolts =

$$f_t = 282.00 \text{ lbs.} < 6672.8 \text{ lbs.} \quad \text{Therefore, OK !}$$

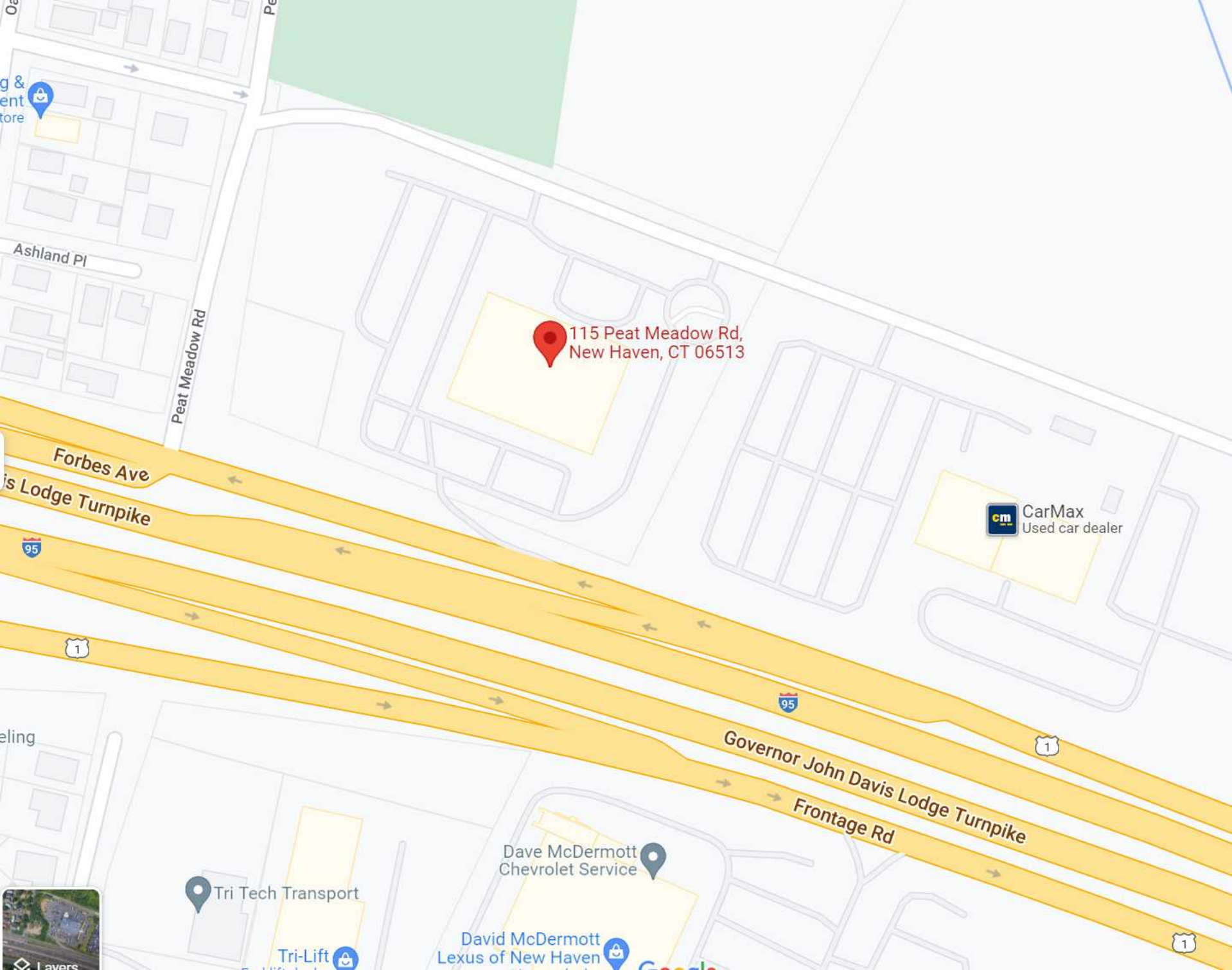
Shear Design Load / Bolts=

$$f_v = 151.85 \text{ lbs.} < 4003.7 \text{ lbs.} \quad \text{Therefore, OK !}$$

CHECK COMBINED TENSION AND SHEAR

$$\begin{array}{rclclcl} f_t / F_T & + & f_v / F_v & \leq & 1.0 \\ 0.042 & + & 0.038 & = & 0.080 < 1.0 \quad \text{Therefore, OK !} \end{array}$$

ATTACHMENT 5



115 Peat Meadow Rd,
New Haven, CT 06513



CarMax
Used car dealer



Tri Tech Transport



Tri-Lift



Dave McDermott
Chevrolet Service



David McDermott
Lexus of New Haven



[Search](#) [Street Listing](#) [Sales Search](#) [Map](#) [Feedback](#) [Back](#) [Home](#)

115 PEAT MEADOW RD

[Q Sales](#)[Print](#)[Map It](#)

Location 115 PEAT MEADOW RD

Mblu 072/ 0982/ 00300/ /

Acct# 072 0982 00300

Owner 115 PEAT MEADOWS LLC

Assessment \$5,252,100

Appraisal \$7,503,000

PID 3242

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$3,886,700	\$3,616,300	\$7,503,000
Assessment			
Valuation Year	Improvements	Land	Total
2021	\$2,720,690	\$2,531,410	\$5,252,100

Owner of Record

Owner 115 PEAT MEADOWS LLC

Co-Owner

Address 515 WEST MAIN ST
BRANFORD, CT 06405

Sale Price \$6,140,000

Certificate

Book & Page 9467/0342




Sale Date 09/01/2016

Instrument 00

ATTACHMENT 6



EAST HAVEN 5
Certificate of Mailing — Firm

Name and Address of Sender Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here <i>Postmark with Date of Receipt.</i> neopost 07/26/2022 US POSTAGE \$003.09  ZIP 06103 041L12203937			
	Postmaster, per (name of receiving employee) 					
USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)		Postage	Fee	Special Handling	Parcel Airlift
1.	Justin Elicker, Mayor City of New Haven 165 Church Street New Haven, CT 06510					
2.	Laura Brown, Executive Director of City Plan City of New Haven 165 Church Street New Haven, CT 06510					
3.	115 Peat Meadows LLC 515 West Main Street Branford, CT 06405					
4.						
5.						
6.						