

**From:** Glenn Shepherd <GShepherd@sbsite.com>

**Sent:** Monday, August 17, 2020 1:25 PM

**To:** CSC-DL Siting Council <Siting.Council@ct.gov>

**Subject:** RE: Correction to: Notice of intent to make exempt modifications: 411 West Putnam Ave, Greenwich CT.

To Whom It May Concern,

Please make note of a minor correction to the CSC filing sent electronically 8/12/20 for the above referenced site. Aforementioned correction is simply a cover letter to the original filing of 8/12/20, regarding an issue with obtaining the original zoning documents. No other changes have been made to the original filing.

I have attached the full and complete filing in hopes that this will mitigate any confusion.

I apologize for any inconvenience or confusion this may have caused.



August 12, 2020

Melanie A. Bachman  
Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RE: Notice of Exempt Modification  
411 West Putnam Ave Latitude:  
N.41.021397  
Longitude: W,73.641289  
T-Mobile Site CT11090A Anchor

Dear Ms. Bachman:

Please note that we were unable to locate the original zoning documents that showed approval of the initial construction of the telecommunications facility on this rooftop located at 411 Putnam Ave, Greenwich, CT. However, the Town of Greenwich was able to provide us with zoning approval documents showing the Town's approval of modifications to the telecommunications facility dating back to 2001.

I have included these documents within the enclosed filing and hope you will find these documents satisfactory in order to complete the review and approval of this filing.

Thank you in advance for your cooperation,

G. Scott Shepherd  
Site Development Specialist I I  
SBA COMMUNICATIONS CORPORATION  
134 Flanders Rd., Suite 125  
Westborough, MA 01581  
Tel. 508.251.0720 - Fax.508.366.2610  
Cell.508.868.6000  
gshepherd@sbsite.com



Filed by:

G. Scott Shepherd, Site Development Specialist II - SBA Communications  
134 Flanders Rd., Suite 125, Westborough, MA 01581  
508.251.0720 x 3807 - gshepherd@sbsite.com

August 12, 2020

Melanie A. Bachman  
Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

**RE: Notice of Exempt Modification**  
**411 West Putnam Ave**  
**Latitude: N.41.021397**  
**Longitude: W.73.641289**  
**T-Mobile Site #: CT11090A\_Anchor**

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 56.9-foot level on the rooftop of an existing 47.9-foot building located at 411 West Putnam Ave, Greenwich CT. The building is owned by West Putnam Owner, LLC. T-Mobile proposes to install three (3) additional 600/700 MHz antennas, and remove and replace (6) 1900/2100-2500 MHz antennas, while three (3) 1900/2100 MHz antennas will remain for a total of twelve (12) antennas.

**Please note:** Per the Connecticut Siting Council Website: CSC COVID 19 Guidelines. *In order to prevent the spread of Coronavirus and protect the health and safety of our members and staff, as of March 18, 2020, the Connecticut Siting Council shall convert to full remote operations until March 30, 2020. Please be advised that during this time period, all hard copy filing requirements will be waived in lieu of an electronic filing. Please also be advised that the March 26, 2020 regular meeting shall be held via teleconference. The Council's website is not equipped with an on-line filing fee receipt service. Therefore, filing fees and/or direct cost charges associated with matters received electronically during the above-mentioned time period will be directly invoiced at a later date.*

Planned Modifications:

TOWER

Remove:

- Ericsson RRUS11+B12 RRU

Remove and Replace:

- (3) 1-5/8" Coax (remove) – (3) 1-5/8" Fiber (replace)
- (3) Andrew LNX-6515DS-A1M (remove) - (3) Ericsson AIR32 KRD901146-1 (replace)



- (3) EMS RR90-17-00DPL2 antenna (remove) – (3) Ericsson AIR6449 B41 antenna (replace)

Install New:

- (3) RFS APXVAARR24\_43-U-NA20 (antenna)
- (1) 2-1/2" SCH 40 pipe
- (2) 6160 Ericsson 6160 Equipment Cabinet
- (2) B160 Ericsson Battery Cabinet

Existing Equipment to Remain:

- (18) 1-5/8" coax
- (1) 1/2" coax
- (3) 1-5/8" fiber
- (3) RFS APX16DWV-16DWV-S-E-A20 (antenna)
- (3) Ericsson KRY 112 89/4 (PCS TMAs)
- (3) Commscope ETW200VS12UB (AWS TMAs)
- (1) Ericsson RBS6102 Equipment Cabinet
- (1) GPS antenna

Entitlements:

- N/A

GROUND:

- N/A (building rooftop site)

This facility was approved by the Town of Greenwich Planning and Zoning Commission on October 29, 2001 for installation of wireless communications equipment installed on the rooftop of 411 West Putnam Ave. Subsequent building permits were also approved by the Town of Greenwich for changes to the wireless communications equipment. In the event the equipment causes interference with Town Emergency Communication Equipment, immediate steps necessary to correct and eliminate the interference must be taken. All primary and secondary equipment must be removed upon termination of the approvals. All signage required by the FCC and OSHA regarding safety and human exposure to RF emissions should be complied with. The equipment approval in this application is subject to Section 6-140.1 of the Building Zone Regulations, particularly the Section on Monitoring and Maintenance. There were no further post construction stipulations set.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §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 the City of Waterbury's Mayor, Neil M. O'Leary, and City Planner, James Sequin, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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 structure.
2. The proposed modification 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 operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

G. Scott Shepherd  
Site Development Specialist II  
SBA COMMUNICATIONS CORPORATION  
134 Flanders Rd., Suite 125  
Westborough, MA 01581  
508.251.0720 x3807 + T  
508.366.2610 + F  
508.868.6000 + C  
gshepherd@sbsite.com

#### Attachments

- cc: Director Planning & Zoning, Katie DeLuca / with attachments  
*Town of Greenwich, Planning & Zoning Dept. 101 Field Point Rd, Greenwich, CT 06830*  
Assessor, Lauren Elliott / with attachments  
*Town of Greenwich, Assessor's Office, 101 Field Point Rd, Greenwich, CT 06830*  
First Selectman, Fred Camillo /with attachments  
*Town of Greenwich, 101 Field Point Rd, Greenwich, CT 06830*  
West Putnam Owner, LLC / with attachments  
*216 E 45<sup>th</sup> St STE 1200, New York, NY 10017*

Exhibit List

Exhibit 1	Check Copy	x
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Greenwich P&Z 10/29/2001
Exhibit 6	Construction Drawings	Chappell Engineering Assoc. 7/29/20
Exhibit 7	Structural Analysis	Chappell Engineering 6/29/20
Exhibit 8	EME Report	EBI Consulting 8/4/20

## EXHIBIT 1

Normally, Exhibit 1 would contain a copy of the check, which due to COVID 19, will be invoiced by the CSC at a later date.

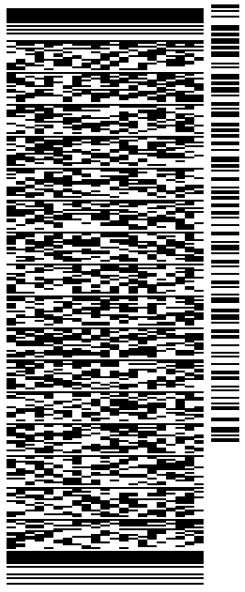
# EXHIBIT 2

ORIGIN ID:BFBA (508) 614-0389  
RICK WOODS  
SBA COMMUNICATIONS CORPORATION  
134 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 12AUG20  
ACTWGT: 1.00 LB  
CAD: 105843304/NET4280  
BILL SENDER

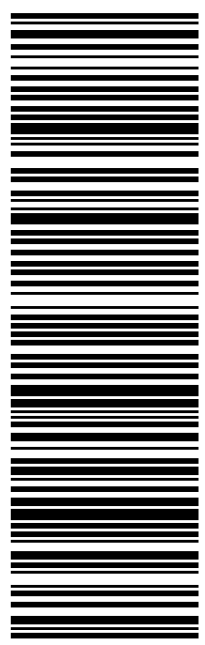
TO KATIE DELUCA  
DIRECTOR OF PLANNING & ZONING  
TOWN OF GREENWICH  
101 FIELD RD  
GREENWICH CT 06830  
(508) 251-0720 REF: 1056-92009-6089  
INV: DEPT:  
PO:

56B.I2/7709/B766



TRK# 7712 4414 9147  
THU - 13 AUG 10:30A  
PRIORITY OVERNIGHT

EHCTXA  
CT-US SWF  
06830



**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

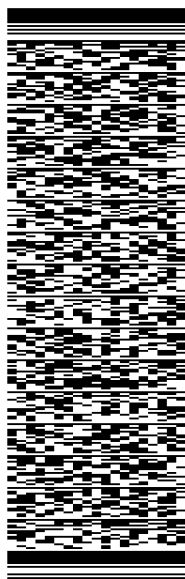
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:BFBA (508) 614-0389  
RICK WOODS  
SBA COMMUNICATIONS CORPORATION  
134 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 12AUG20  
ACTWGT: 1.00 LB  
CAD: 105843304/NET4280  
BILL SENDER

TO LAUREN ELLIOT  
ASSESSOR  
TOWN OF GREENWICH

GREENWICH CT 06830  
(508) 251-0720 REF: 1056920096089  
INV# PO: DEPT:

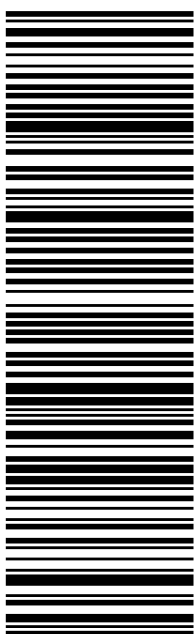


J2020071401uv

TRK# 7712 4424 3439 THU - 13 AUG 10:30A  
0201 PRIORITY OVERNIGHT

EH CTXA

06830  
CT-US SWF



56B.I2/7709/B766

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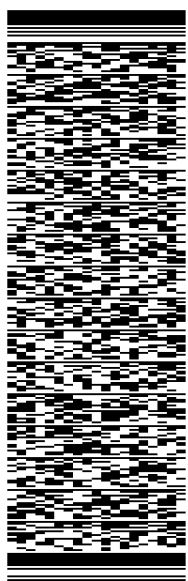
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

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RICK WOODS  
SBA COMMUNICATIONS CORPORATION  
134 FLANDERS RD  
SUITE 125  
WESTBOROUGH, MA 01581  
UNITED STATES US

SHIP DATE: 12AUG20  
ACTWGT: 1.00 LB  
CAD: 105843304#NET4280  
BILL SENDER

TO **FRED CAMILLO**  
**FIRST SELECTMAN**  
**TOWN OF GREENWICH**

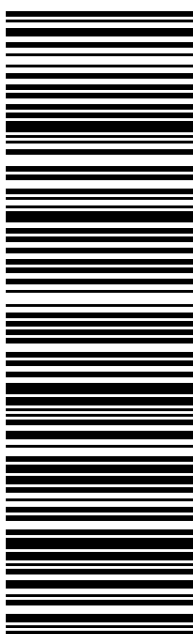
**GREENWICH CT 06830**  
(508) 251-0720 REF: 1056920096089  
INV/ DEPT:  
PO:



TRK# 7712 4427 3177  
0201  
THU - 13 AUG 10:30A  
PRIORITY OVERNIGHT

**EH CTXA**

06830  
CT-US SWF



56B.I2/7709/B766

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 RICK WOODS  
 SBA COMMUNICATIONS CORPORATION  
 134 FLANDERS RD  
 SUITE 125  
 WESTBOROUGH, MA 01581  
 UNITED STATES US

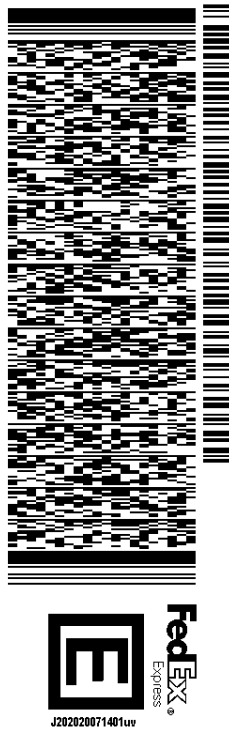
SHIP DATE: 12AUG20  
 ACTWGT: 1.00 LB  
 CAD: 105843304/NET4280

BILL SENDER

TO WEST PUTNAM OWNER, LLC

216 E. 45TH STREET  
 SUITE 1200  
 NEW YORK CITY NY 10017  
 (508) 251-0720 REF: 10-56-92009-6089  
 INV/ PO: DEPT:

56B.I2/7709/B766



TRK# 7712 4432 9791  
 THU - 13 AUG 10:30A  
 PRIORITY OVERNIGHT

E3 OGSA  
 NY-US EWR 10017

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# EXHIBIT 3

ADMINISTRATIVE INFORMATION

OWNERSHIP

Tax ID 214/252

Printed 12/18/2019 Card No. 1 of 1

PARCEL NUMBER 03-1664/S
Parent Parcel Number
Property Address WEST PUTNAM AVENUE 0411
Neighborhood 2200 WEST PUTNAM
Property Class 212 General Office
TAXING DISTRICT INFORMATION
Jurisdiction 57 Greenwich, CT
Area 001
Corporation 057
District 03
Section & Plat 103
Routing Number 9073N0043

WEST PUTNAM OWNER LLC
216 E 45TH ST STE 1200
NEW YORK, NY 10017
LOT NO 32 & 33 WEST PUTNAM AVE N-43

TRANSFER OF OWNERSHIP

Table with columns: Date, Description, Value. Rows include transfers from 06/24/2016 to 07/16/1991.

COMMERCIAL

VALUATION RECORD

Table with columns: Assessment Year, Reason for Change, VALUATION, Market, 70% Assessed. Rows show valuation data from 2015 to 2019.

LAND DATA AND CALCULATIONS

Table with columns: Rating, Measured, Table, Prod. Factor, Soil ID, Acreage, Effective, Depth, Base Rate, Adjusted Rate, Extended Value, Influence Factor, Value. Includes zoning and legal acres info.

APS: 03-1654/S
BA16: Sustain
BP15: 15-0978; Tenant: Contrian Capital, \$188,000 elec & int alt
BP18: BP16-3911, Tenant Fitout \$719,000
CTST: 2016 GL, 2017 GL & 2018 GL
DBA: Wexford Plaza
GEN: Supported by parking deck and garage on 03-1654/s.
P: 110 spaces
SALE: 3/15/02 vol 3810 pg 325 sale includes 03-1654/s. Recorded sp of \$23,494,750 reflects reduction for specific liability. Effective sp = \$23,607,000. Verified arm's length. 4/05 sale w/ 03-1654/s cmfrmd arm's length w/ tot sp = \$32,257,000. Indicated sp is allocated value (88%).

Supplemental Cards
TRUE TAX VALUE 3347000

Permit Number FilingDate Est. Cost Field Visit
Type Est. SqFt

Supplemental Cards
TOTAL LAND VALUE 3347000

**IMPROVEMENT DATA**

**PHYSICAL CHARACTERISTICS**

ROOFING

Built-up

WALLS

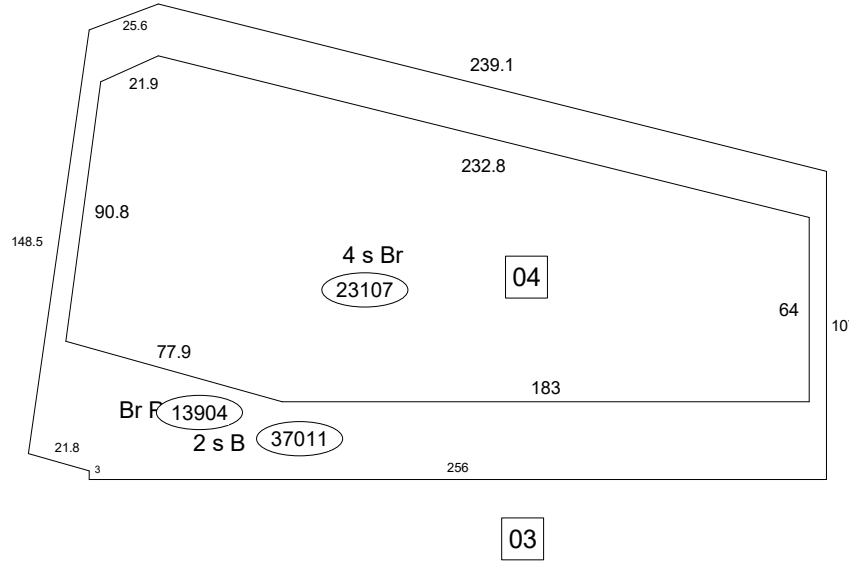
	B	1	2	U
Frame		Yes	Yes	Yes
Brick	Yes			
Metal				
Guard				

FRAMING

	B	1	2	U
R Conc	3701	0	0	0
F Prf	70321	23107	23107	46214

HEATING AND AIR CONDITIONING

	B	1	2	U
Heat	74022	4621	4621	9242
Sprink	74022	4621	4621	9242



Item Description Units Cost Total Pct

M & S Cost Database Date: 01/2015

Base Cost	92428	216.05	19969069	
Exterior Walls	92428	57.64	5327552	
Heating & Cooling	18484	34.04	629196	
Sprinklers	18484	7.60	140480	
Basic Structure Cost	92428	282.02	26066297	
Unfinished Basement	74022	59.44	4399868	
Heating & Cooling	74022	20.17	1493285	
Sprinklers	74022	4.67	345534	
Building Cost New	92428	349.52	32304984	
Physical	0	0.00	777656	2.41
Depreciated Cost	92428	341.10	31527328	
Rounded Total	0	0.00	31527300	

Total Exterior Features Value				
Depreciated Ext Features				
Total Before Adjustments			31527300	
Neighborhood Adjustment			15763700	50.00
<b>TOTAL VALUE</b>			<b>47291000</b>	

(LCM: 150.00)

**SPECIAL FEATURES**

**SUMMARY OF IMPROVEMENTS**

Description	Value	ID	Use	Stry Hgt	Const Type	Grade	Year Const	Eff Year	Cond	Base Rate	Feat-ures	Adj Rate	Size or Area	Computed Value	Phys Depr	Obsol Depr	Market Adj	% Comp	Value
C : Remod 2009		C	GENOFF	0.00		Exe	1973	2005	VG	0.00	N	0.00	23107	0	0	0	150	100	47291000
		03	PENTMECH	0.00	1	Avg	1971	1995	GD	70.00	N	105.00	2940	308700	0	0	100	100	308700
		04	ELEVCOM	6.00	2E	Avg+	1973	2000	VG	169000	N	304200	2@ 0	608400	0	0	100	100	608400
		05	BRP	0.00		Exe	2009	2009	AV	0.00	N	0.00	0	806360	3	0	100	100	782200

Data Collector/Date

Appraiser/Date

Neighborhood

Supplemental Cards

TD 06/13/2017

TOG 10/01/2015

Neigh 2200 AV

**TOTAL IMPROVEMENT VALUE**

48990300

# EXHIBIT 4



Property Maps were not available through the  
Town of Greenwich, CT





# EXHIBIT 5

DIANE W. FOX, AICP  
TOWN PLANNER/  
ZONING ENFORCEMENT COORDINATOR



LAURENCE I. BRADLEY, AICP, Assistant Town Planner  
JOSEPH R. POTENZA, AICP, Senior Planner  
KATIE BLANKLEY, Planner II  
MATTHEW N. STEINBERG, Planner I  
CHARLES B. MULLIGAN, JR., Applications Coordinator

2-3704

PLANNING AND ZONING - LAND USE DEPARTMENT

MEMORANDUM

**TO:** Bill Marr, Building Official  
Jim Maloney, Zoning Enforcement Officer  
Bruce Dixon, Zoning Inspector

**FROM:** Diane Fox, Town Planner/Zoning Enforcement Coordinator  
Katie Blankley, Planner II

**DATE:** March 15, 2004

**RE:** Nextel Communications  
Roof top antenna installation  
411 West Putnam Avenue  
Zone: GB  
SES #02-02

Administrative Site Plan #02-02 was approved by the Planning and Zoning Department on July 1, 2002 for the installation of four panel antennas on three sleds for a total of twelve (12) panel antennas. The accompanying electrical equipment is housed within a new 10 x 20 unmanned equipment shelter. The total roof area coverage proposed is 21.6%

Nextel has certified that the FCC has licensed them to receive within the 806 – 821 MHz band and transmit within the 851 – 866 MHz band of the frequency spectrum and that this will not cause any interference with the Town of Greenwich emergency communication system.

All conditions outlined in the building permit sign off letter dated July 1, 2002 have been met subject to the following conditions:

**THE FOLLOWING CONDITIONS SHOULD BE PLACED ON THE C.O.**

- 1) In the event that Nextel's equipment causes interference with the Town Emergency Communication Equipment, Nextel must immediately take all steps necessary to correct and eliminate the interference.

- 2) Nextel must remove all primary and secondary equipment upon termination of the approvals set forth in this memorandum in the equipment room and on the monopole.
- 3) All signage required by the FCC and OSHA regarding standards for safety and human exposure to RF emissions should be complied with.
- 4) It should be noted that the equipment approved in this application is continuously subject to Section 6-140.1 of the Building Zone Regulations, particularly the Section on Monitoring and Maintenance.

**SUPPORT DOCUMENTATION:**

2/17/04 RF Emission Measurement Analysis

3/18/04 E-mail from Jud VanIngen, Town Communications Officer



# Certificate of Occupancy/Compliance

## Town of Greenwich - DPW-Division of Buildings

101 Field Point Road , P.O. Box 2540 , Greenwich, CT 06830

Telephone: (203)622-7750 Fax (203)622-7040

www.greenwichct.org

This certificate is issued pursuant to the requirements of the building codes certifying that at the time of issuance to the best of our knowledge and belief, this structure was in compliance with the various ordinances of the Town of Greenwich.

Permit No: **2-3704**

Issue Date: **3/24/2004**

Rachel Rangelov Construction  
633 North Branford Rd.  
Branford, CT 06405

To perform the following work:  
Alteration/Office Building

Location: 411 West Putnam Ave  
Lessee: Nextel Communications  
Greenwich, CT 06830

Section: Greenwich

Zone: GB  
Construction type: 2C  
No. of Stories: 0  
Valuation of Work: \$95,000

Tax No.: 03-1664/S  
Units: 0  
Use Group No.: B

Building Fees: \$1,020.00

Description of Work: 1096 Boca-Install Communication Equipment & Antennas on Rooftop

Owner:  
Florida Sherwood Forest Ltd  
411 West Putnam Ave.  
Greenwich, CT 06830

Zoning Enforcement Officer

Building Official





DIVISION OF BUILDING INSPECTION

JUL 17 2001

**TOWN OF GREENWICH  
CONNECTICUT**

**ZONING ENFORCEMENT**



Project No. SES/Adm. #01-3  
Final

Preliminary

Reviewed for Planning and Zoning Commission.

TITLE OF PLAN REVIEWED: <sup>Wexford</sup> Voicestream Wireless at ~~Greenwich~~ Plaza

LOCATION: ~~Greenwich Plaza~~ 411 West Putnam Ave

PLAN DATE:

ZONE:

revised by Katie  
Blanchley per discussion  
with [unclear]  
*[Signature]*

The subject site plan/subdivision meets the requirements of the Building Zone Regulations excluding Section 6-15 and 6-17, except for the following:

Reviewed by: *[Signature]*

Date: July 17, 2001

**4. Neighboring Sites (Existing and Proposed):**

I have been in charge for the design for Voicestream since the beginning of their Network and have personally been involved in the selection of various locations in Greenwich besides the three proposed sites. Other Voicestream locations in Greenwich are as follows:

**Operational Sites**

- Roof top at 411 West Putnam Ave (will be proposing to upgrade our current installation)
- SNET Mobility monopole at 363 Riversville P.d (Boys Scouts of America)
- CT State Police tower at 150 Butternut Hollow Rd
- Bell Atlantic / Verizon monopole at 1081 North Street

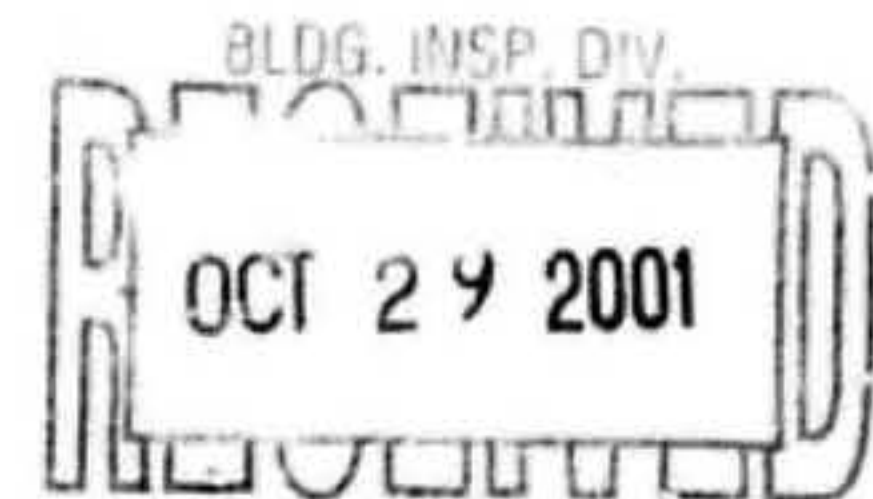
MAR 30 2001

**Sites under construction / Zoning process**

- CL&P pole at Station drive (under construction)
- CL&P pole at Old Greenwich Station
- Roof top at 1111 East Putnam Ave
- Proposed flagpole at 239 Glenville Rd

**Sites in leasing / Open search areas**

- 247 Stanwich Rd (St Agnes Church)
- 35 Parsonage Rd (Greenwich Country Club)
- Open search area off of Byfield Lane and Route 15
- Round Hill Rd and Route 15
- Open search area on Lake Ave and Rockwood Lane



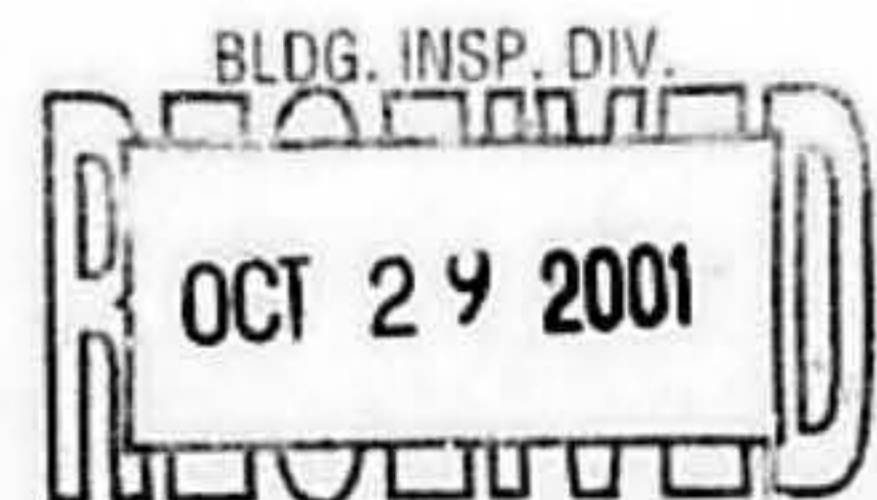


**P&Z APPROVES THE FOLLOWING PLANS SUBJECT TO THE FOLLOWING CONDITIONS:**

- 1) **Prior to Building Permit issuance approval must be obtained in writing from the Town of Greenwich Police Department.**
- 2) An application must be filed with the Planning and Zoning Office if there is any change to the location or materials of any equipment either on the roof or inside the building.
- 3) The applicant must remove all primary and secondary equipment upon termination of the approvals set forth in this memorandum.

**APPROVED P&Z PLANS PREPARED BY TECTONIC ENGINEERING CONSULTANTS ARE AS FOLLOWS:**

Roof Plan, dated 7/26/01, Sheet A-2  
Equipment Location Plan & Detail, dated 7/26/01, Sheet A-3  
Elevations, dated 7/26/01, Sheet A-4



**SUPPORT DOCUMENTATION:**

July 17, 2001 memorandum from Zoning Enforcement to Planning and Zoning

Cc: Haden Gerrish

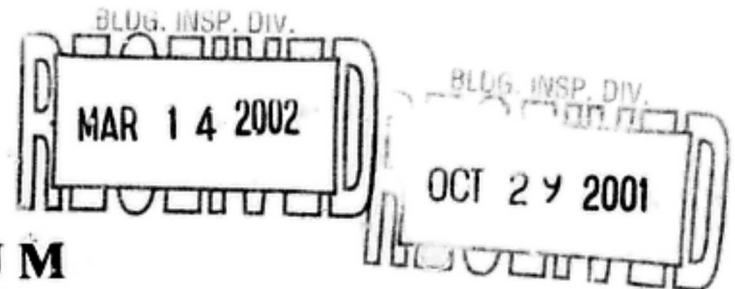


# TOWN OF GREENWICH

Planning and Zoning Commission

Diane W. Fox  
Town Planner/Zoning Enforcement Coordinator

Laurence I. Bradley  
Joseph R. Potenza  
Katie Blankley  
Matthew N. Steinberg  
Mary K. Young



## MEMORANDUM

**TO:** Bill Marr, Building Official  
Jim Maloney, Zoning Enforcement Officer  
Bruce Dixon, Zoning Inspector

**FROM:** Diane Fox, Town Planner/Zoning Enforcement Coordinator  
Katie Blankley, Planner II

**DATE:** October 15, 2001

**RE:** Voicestream Wireless Services  
Roof top antenna installation at the Wexford Plaza  
411 West Putnam Avenue  
Zone: GB

The attached plans of Tectonic Engineering Consultants, Inc dated July 26, 2001 as listed below, have been approved by the Planning and Zoning Department for the installation of (12) panel antennas to be erected on three Ballast Mounting Frames (4 antennas per mount) that will be affixed to the existing penthouse on the roof of Wexford Plaza. The accompanying electrical equipment will be moved from its existing location towards the edge of the roof and after the new equipment is installed all previous equipment will be removed as specified on the plans. The new equipment includes two new cabinets and space for a third in the future and is housed on the south side of the building.

Voicestream has certified that the FCC has licensed them to receive within the 1885-1890 MHz band and transmit within the 1965-1970 MHz band of the frequency spectrum and that this will not cause any interference with the Town of Greenwich emergency communication system.

# EXHIBIT 6



# GREENWICH/PUTNAM AVE 2

411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830  
FAIRFIELD COUNTY

SITE NO.: CT11090A

SITE TYPE: ROOFTOP

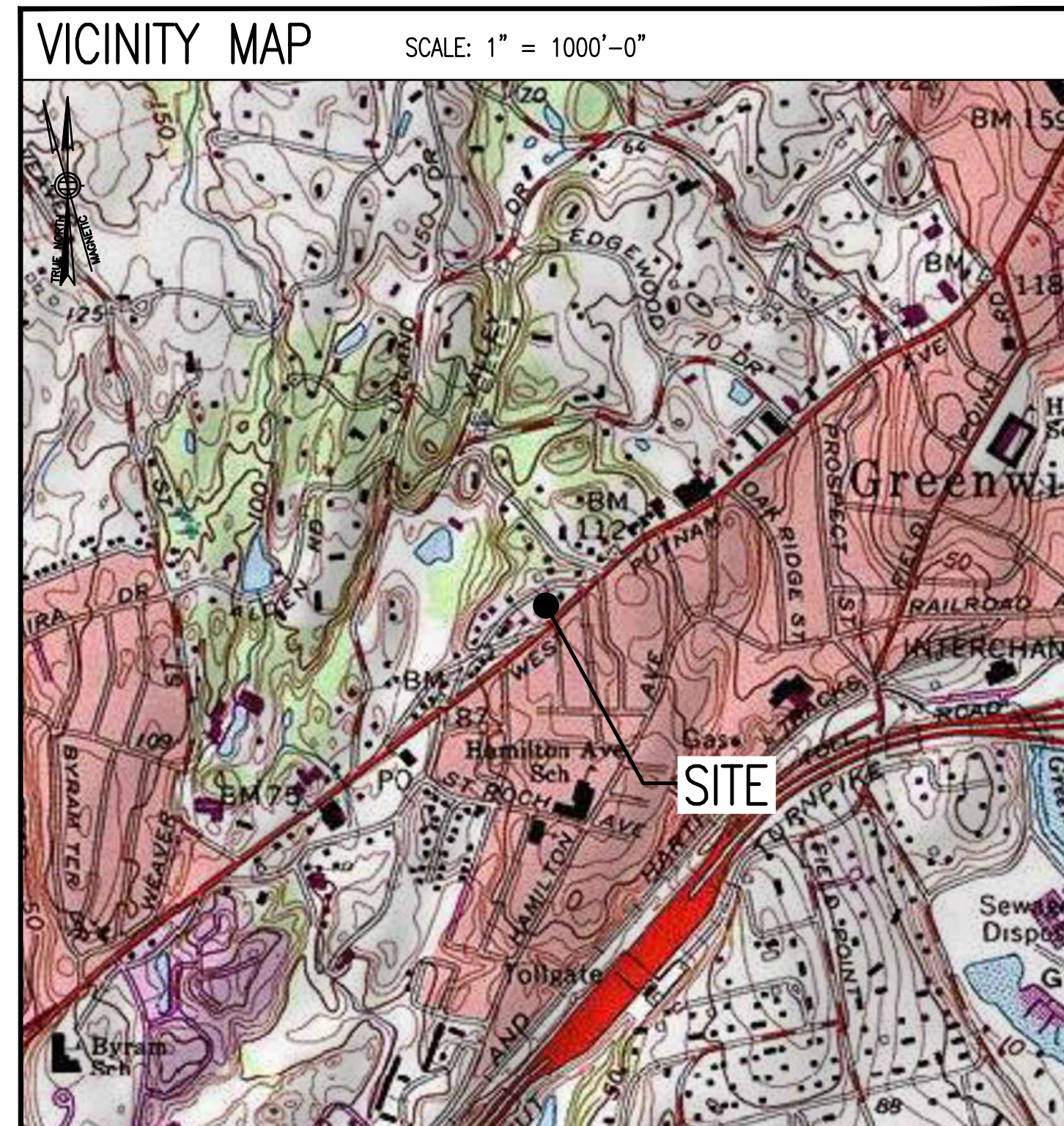
RF DESIGN GUIDELINE: 67D5A99DB HYBRID

APPROVALS			
PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
CONSTRUCTION:	DATE:	OPERATIONS:	DATE:
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

T-MOBILE TECHNICIAN SITE SAFETY NOTES	
LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
SECTOR D:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

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.	11. 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.
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 EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.	12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.	13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.	14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.	15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'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 CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
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.	16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
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.	17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY 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 IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.	

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



**DO NOT SCALE DRAWINGS**

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET INDEX		
SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	ROOF PLAN	1
A-2	EQUIPMENT PLANS	1
A-3	BUILDING ELEVATION	1
A-4	ANTENNA PLANS	1
A-5	SITE DETAILS	1
S-1	BALLAST MOUNT REINFORCING DETAILS	1
E-1	ELECTRIC & GROUNDING DETAILS	1

**SPECIAL ZONING NOTE:**  
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

- SITE NOTES**
- THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
    - ADA COMPLIANCE NOT REQUIRED.
    - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
    - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
  - CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
  - NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
    - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
    - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
    - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

**T-MOBILE  
NORTHEAST LLC**

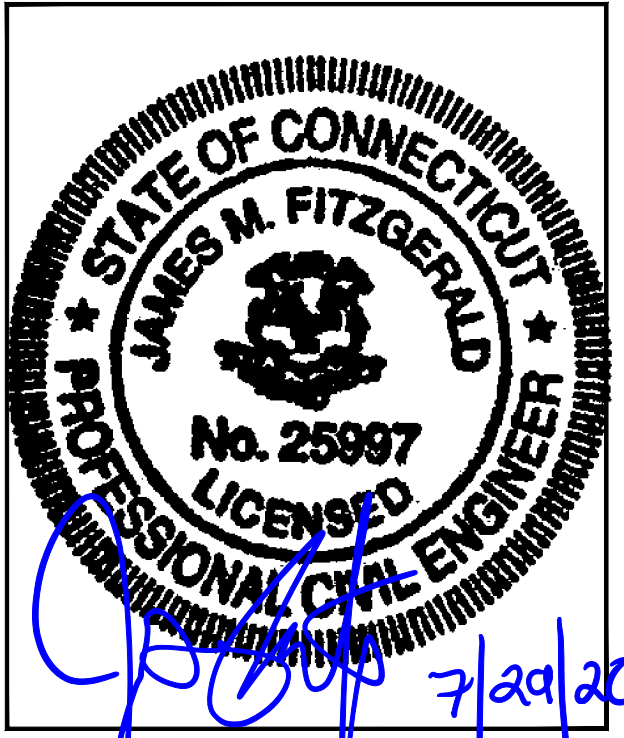
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700

**SBA**

SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720

**CHAPPELL  
ENGINEERING  
ASSOCIATES, LLC**  
*Civil Structural-Land Surveying*

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



PROJECT SUMMARY	
SITE NUMBER:	CT11090A
SBA SITE NUMBER:	CT95623-M
SBA SITE NAME:	GREENWICH (PUTNAM)
SITE ADDRESS:	411 WEST PUTNAM AVENUE GREENWICH, CT 06830
PROPERTY OWNER:	411 PUTNAM AVE, LLC 411 WEST PUTNAM AVENUE GREENWICH, CT 06830
TOWER OWNER:	MCM ACQUISITION 2017, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	FAIRFIELD COUNTY
ZONING DISTRICT:	GB (GENERAL BUSINESS)
STRUCTURE TYPE:	ROOFTOP
STRUCTURE HEIGHT:	60.5'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	ROBERT ROBESKI PHONE: 732-404-9360 x2245 EMAIL: RRobeski@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.021397° N41°01'17.03" LONGITUDE W.73.641289° W73°38'28.64"

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	07/28/20	ISSUED FOR CONSTRUCTION	CMC
0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**

SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**



**GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR – T-MOBILE  
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
OWNER – T-MOBILE  
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
- CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

**SITE WORK GENERAL NOTES:**

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.

**CONCRETE AND REINFORCING STEEL NOTES:**

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNDO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
CONCRETE CAST AGAINST EARTH.....3 IN.  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER .....2 IN.  
#5 AND SMALLER & WWF .....1½ IN.  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:  
SLAB AND WALL .....¾ IN.  
BEAMS AND COLUMNS .....½ IN.
- A CHAMFER ¼" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;  
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.  
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.  
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

**STRUCTURAL STEEL NOTES:**

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T-MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

**SOIL COMPACTION NOTES FOR SLAB ON GRADE:**

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
- AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

**COMPACTION EQUIPMENT:**

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

**CONSTRUCTION NOTES:**

- FIELD VERIFICATION:  
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:  
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- CABLE LADDER RACK:  
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

**ELECTRICAL INSTALLATION NOTES:**

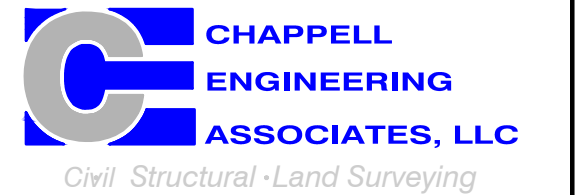
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND, DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

**T-MOBILE  
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SUBMITTALS			
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1	07/28/20	ISSUED FOR CONSTRUCTION	CMC
0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**  
  
SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
  
**GENERAL NOTES**

SHEET NUMBER  
  
**GN-1**

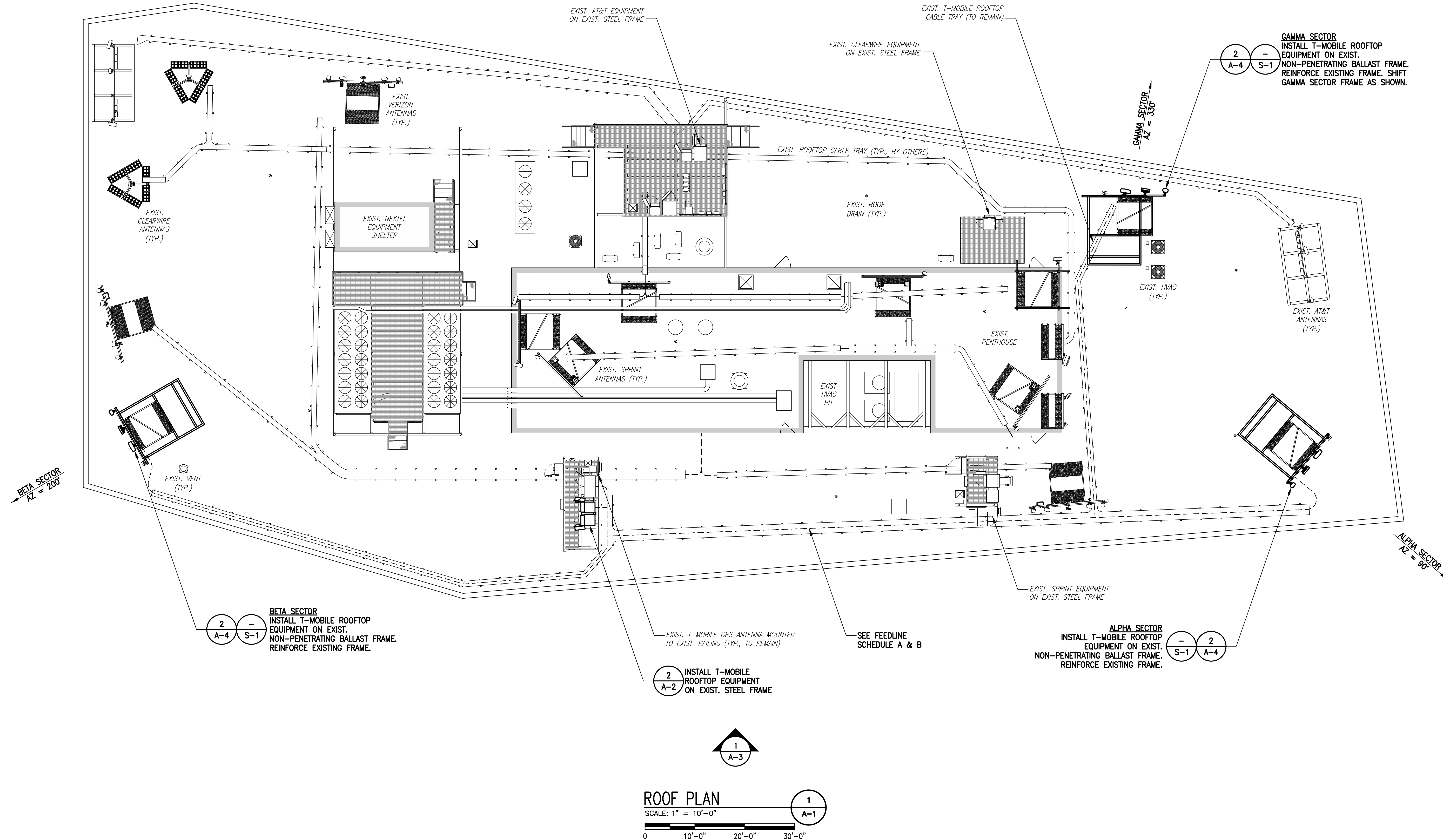
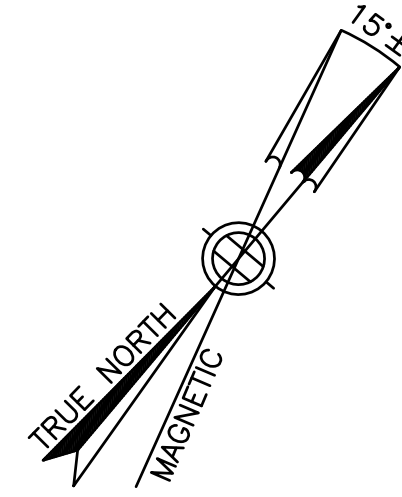


**SUPPLEMENTAL GENERAL CONDITIONS WORK NOTE (BUILDING PROTECTION AND RF EME SAFETY SIGNAGE):**

- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE AND PARAPET WALL DURING CONSTRUCTION. PROPER ROOF PROTECTING MATERIALS SHALL BE PLACED AROUND ALL WORKING AREAS AND NO TOOLS, LADDERS, MATERIALS, OR EQUIPMENT SHALL BE PLACED DIRECTLY ON THE ROOF SURFACE. ANY DAMAGES TO ROOF SURFACE AND/OR PARAPET WALL DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION.
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FEEDLINE SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (18) 1-3/8" COAX CABLES (1) 1/2" COAX CABLE FOR GPS ANTENNA (3) 1-3/8" HCS FIBER CABLES EXISTING TO BE REMOVED: (3) 1-3/8" COAX CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 1-3/8" HCS FIBER CABLES	

**NOTE:**  
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

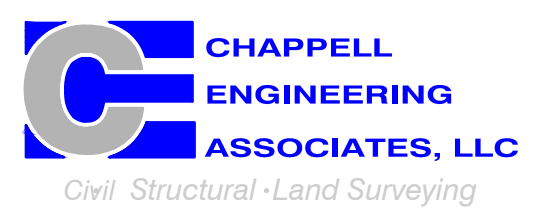


**T-MOBILE  
NORTHEAST LLC**

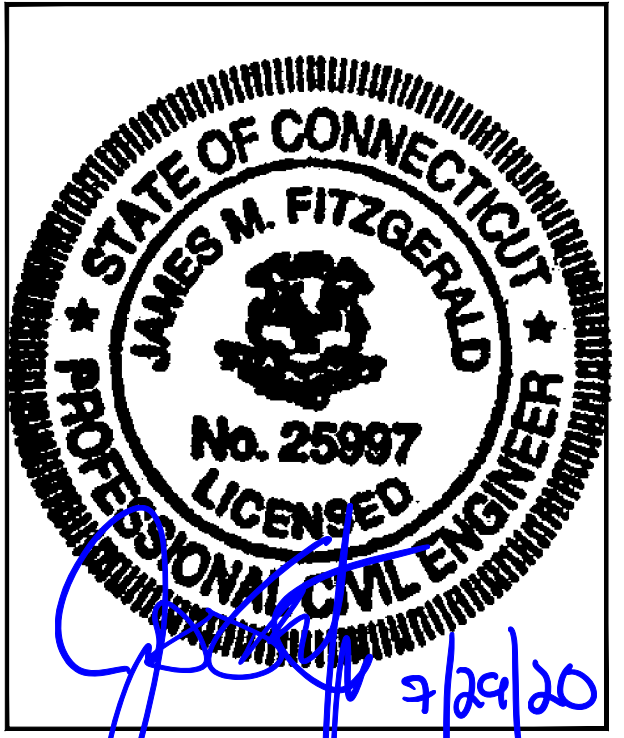
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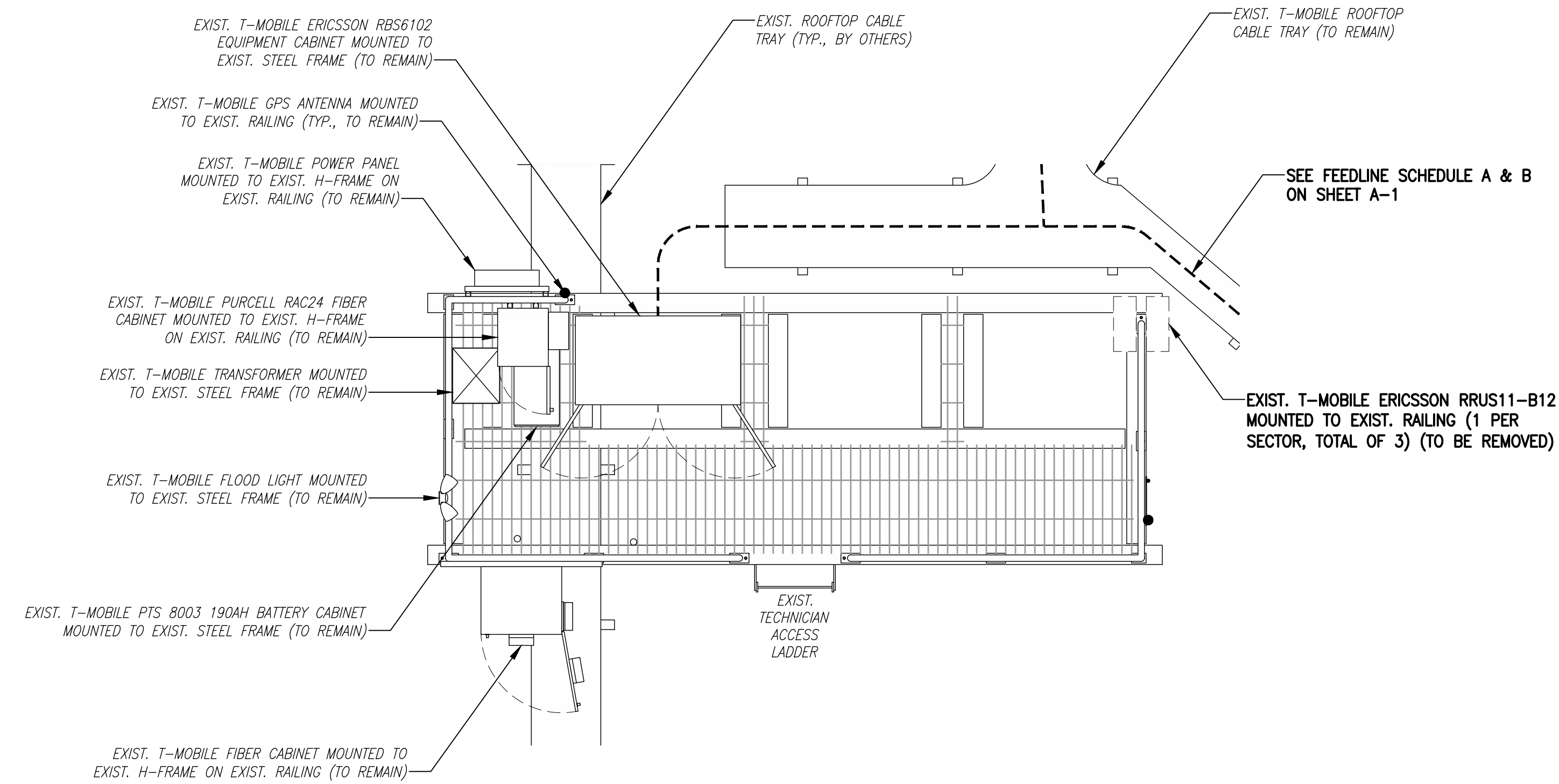
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**ROOF PLAN**

SHEET NUMBER  
**A-1**

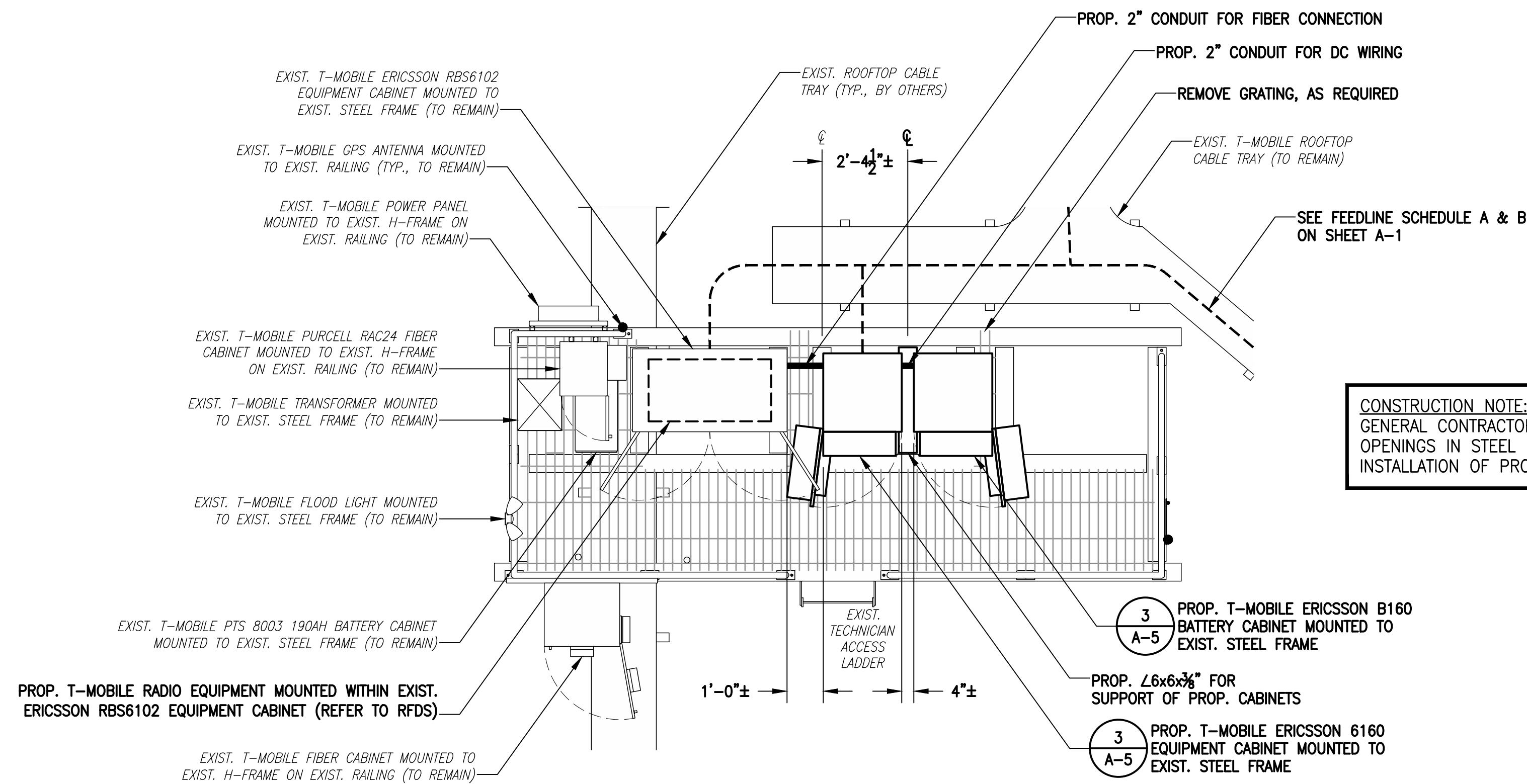


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3. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE THE INSTALLATION OF T-MOBILE RF SAFETY SIGNAGE AND OTHER RF SAFETY IMPROVEMENTS AS SHOWN ON SUPPLEMENTAL PLANS (BY OTHERS) WHICH SHALL BE SLIP-SHEETED BY SBA COMMUNICATIONS INTO THE FINAL CONSTRUCTION DRAWINGS. CHAPPELL ENGINEERING ASSOCIATES, LLC, IS NOT RESPONSIBLE FOR THE DESIGN OF ANY RF SAFETY IMPROVEMENTS.



**EXISTING EQUIPMENT PLAN**  
 SCALE: 3/8" = 1'-0"  
 0 2'-8" 5'-4" 8'-0"



**CONSTRUCTION NOTE:**  
 GENERAL CONTRACTOR SHALL COVER OPENINGS IN STEEL PLATFORM AFTER INSTALLATION OF PROPOSED CABINETS.

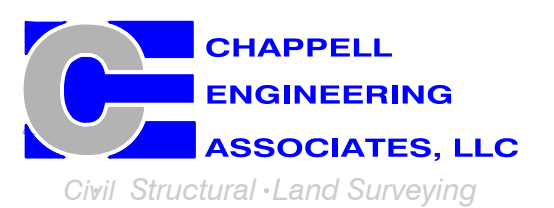
**PROPOSED EQUIPMENT PLAN**  
 SCALE: 3/8" = 1'-0"  
 0 2'-8" 5'-4" 8'-0"

**T-MOBILE  
 NORTHEAST LLC**

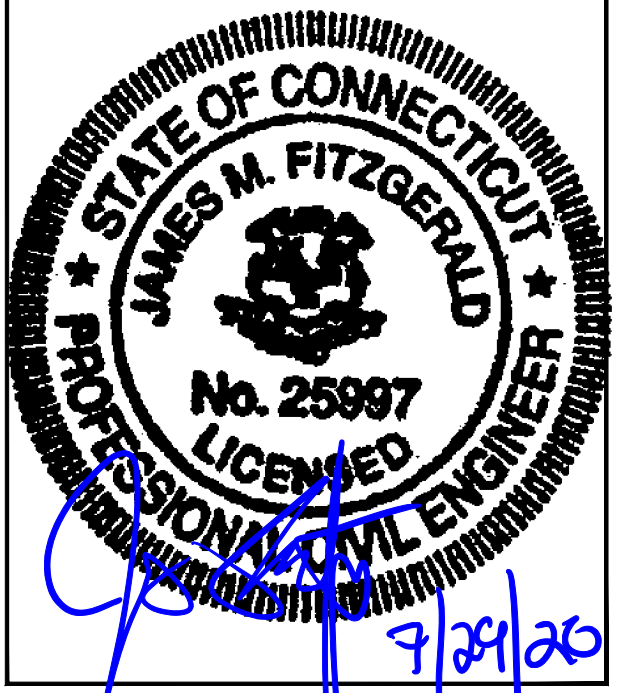
15 COMMERCE WAY, SUITE B  
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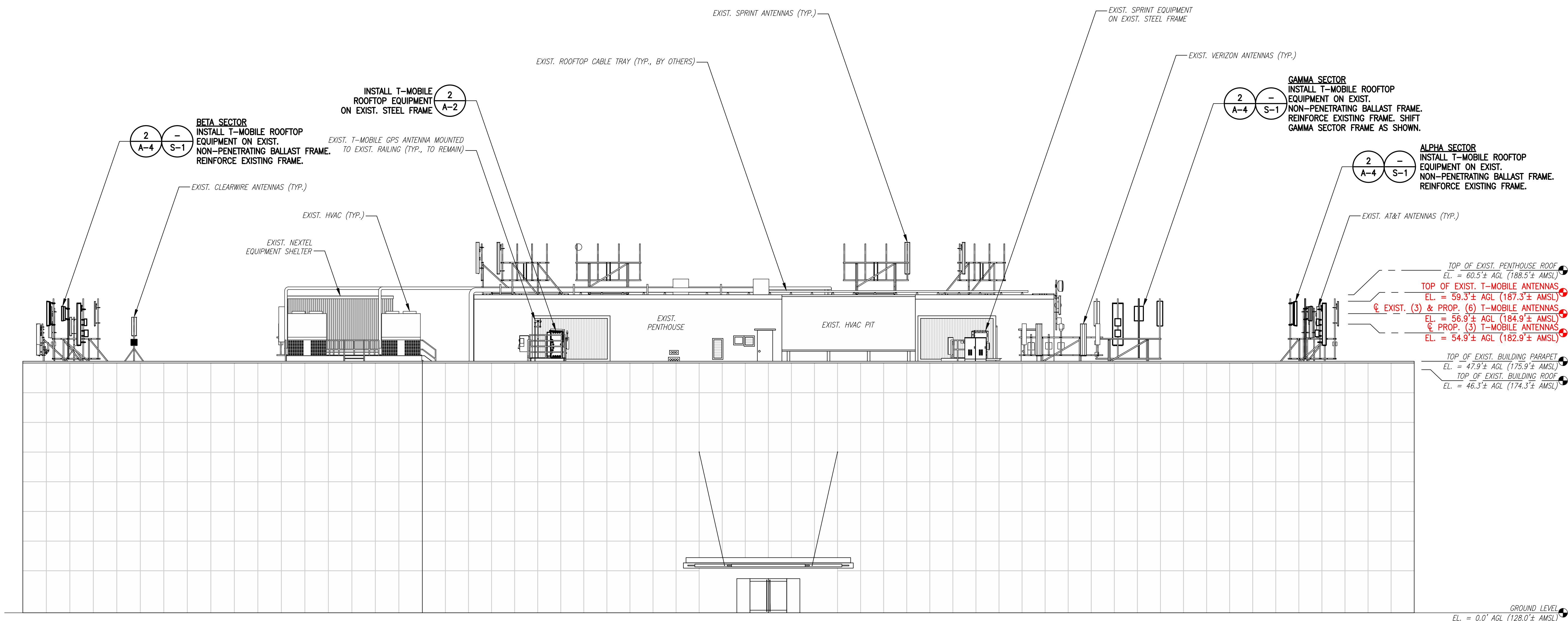
SHEET TITLE  
**EQUIPMENT PLANS**

SHEET NUMBER  
**A-2**

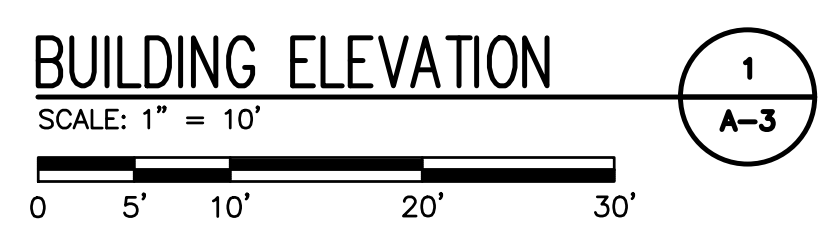
**SUPPLEMENTAL GENERAL CONDITIONS WORK NOTE (BUILDING PROTECTION AND RF EME SAFETY SIGNAGE):**  
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**RAD CENTER NOTE:**  
 T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

**GENERAL CONTRACTOR NOTE:**  
 GENERAL CONTRACTOR SHALL REFER TO MOUNT STRUCTURAL ANALYSIS AND ANY MOUNT MODIFICATION DESIGN PROVIDED BY SBA



- TOP OF EXIST. PENTHOUSE ROOF  
EL. = 60.5'± AGL (188.3'± AMSL)
- TOP OF EXIST. T-MOBILE ANTENNAS  
EL. = 59.3'± AGL (187.3'± AMSL)
- EXIST. (3) & PROP. (6) T-MOBILE ANTENNAS  
EL. = 56.9'± AGL (184.9'± AMSL)
- PROP. (3) T-MOBILE ANTENNAS  
EL. = 54.9'± AGL (182.9'± AMSL)
- TOP OF EXIST. BUILDING PARAPET  
EL. = 47.9'± AGL (175.9'± AMSL)
- TOP OF EXIST. BUILDING ROOF  
EL. = 46.3'± AGL (174.3'± AMSL)
- GROUND LEVEL  
EL. = 0.0'± AGL (128.0'± AMSL)

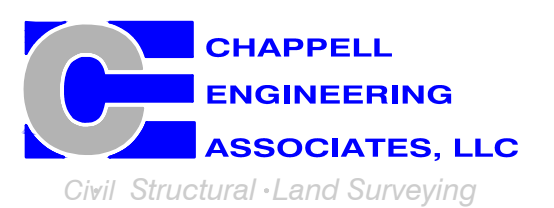


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SHEET TITLE  
**BUILDING ELEVATION**

SHEET NUMBER  
**A-3**





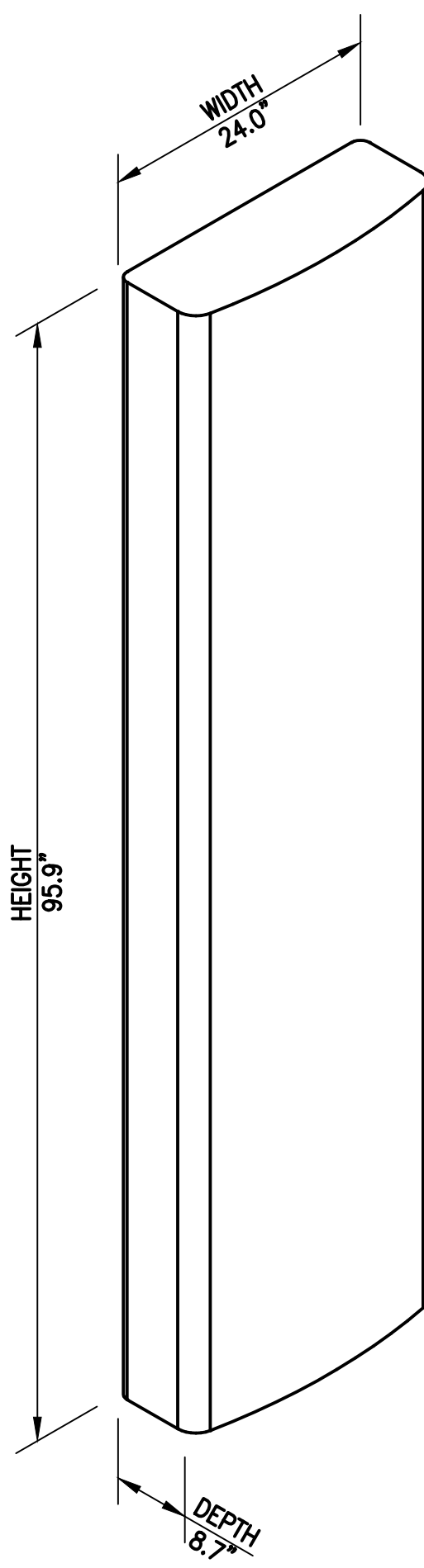


FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	RFS APX16DWW-16DWW-S-E-A20	56.9'± AGL	90°	0°	0°	G1900	GENERIC TWIN STYLE 1A PCS TMA	(18) 1-5/8" COAX CABLES (3) 1-5/8" HCS FIBER CABLES (3) 1-5/8" HCS CABLES
	RFS APXVAARR24_43-U-NA20	54.9'± AGL	90°	0°	0°	L700/L600/N600	RADIO 4449 B71+B85	
	ERICSSON M-MIMO AIR6449 B41	56.9'± AGL	90°	0°	0°	L2500/N2500	-	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	59.9'± AGL	90°	0°	0°	L2100	-	
BETA	RFS APX16DWW-16DWW-S-E-A20	56.9'± AGL	200°	0°	0°	G1900	GENERIC TWIN STYLE 1A PCS TMA	
	RFS APXVAARR24_43-U-NA20	54.9'± AGL	200°	0°	0°	L700/L600/N600	RADIO 4449 B71+B85	
	ERICSSON M-MIMO AIR6449 B41	56.9'± AGL	200°	0°	0°	L2500/N2500	-	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	59.9'± AGL	200°	0°	0°	L2100	-	
GAMMA	RFS APX16DWW-16DWW-S-E-A20	56.9'± AGL	330°	0°	0°	G1900	GENERIC TWIN STYLE 1A PCS TMA	
	RFS APXVAARR24_43-U-NA20	54.9'± AGL	330°	0°	0°	L700/L600/N600	RADIO 4449 B71+B85	
	ERICSSON M-MIMO AIR6449 B41	56.9'± AGL	330°	0°	0°	L2500/N2500	-	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	59.9'± AGL	330°	0°	0°	L2100	-	

CABLE NOTE: EXISTING (3) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B ON SHEET A-1.

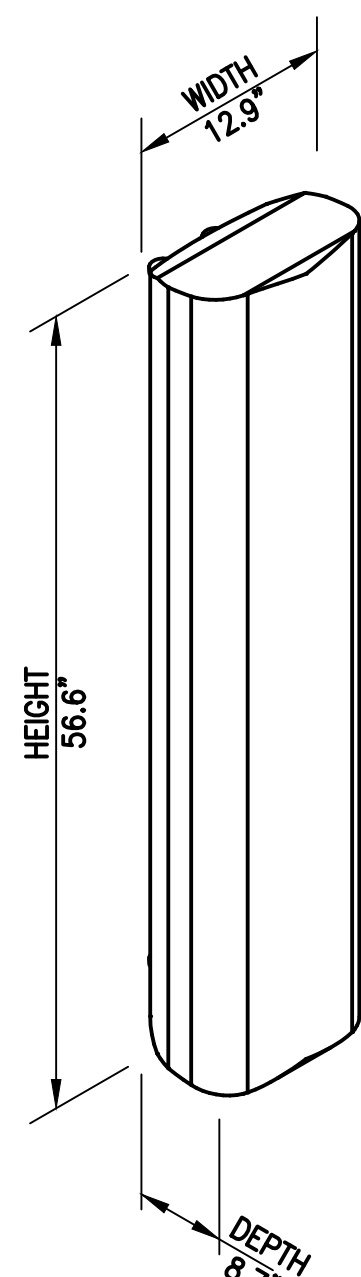
NOTE: RFDS REV5 - 05/12/20



RFS APXVAARR24\_43-NA20 PANEL ANTENNA  
DIMENSIONS: 95.9"H x 24.0"W x 8.7"D  
WEIGHT: 128.0 LBS  
1 PER SECTOR, TOTAL OF 3



ERICSSON M-MIMO AIR6449 B41 PANEL ANTENNA  
DIMENSIONS: 33.1"H x 20.5"W x 8.3"D  
WEIGHT: 103.0 LBS  
1 PER SECTOR, TOTAL OF 3



ERICSSON AIR32 KRD901146-1 B66A/B2A ANTENNA  
DIMENSIONS: 56.6"H x 12.9"W x 8.7"D  
WEIGHT: 132.2 LBS  
1 PER SECTOR, TOTAL OF 3



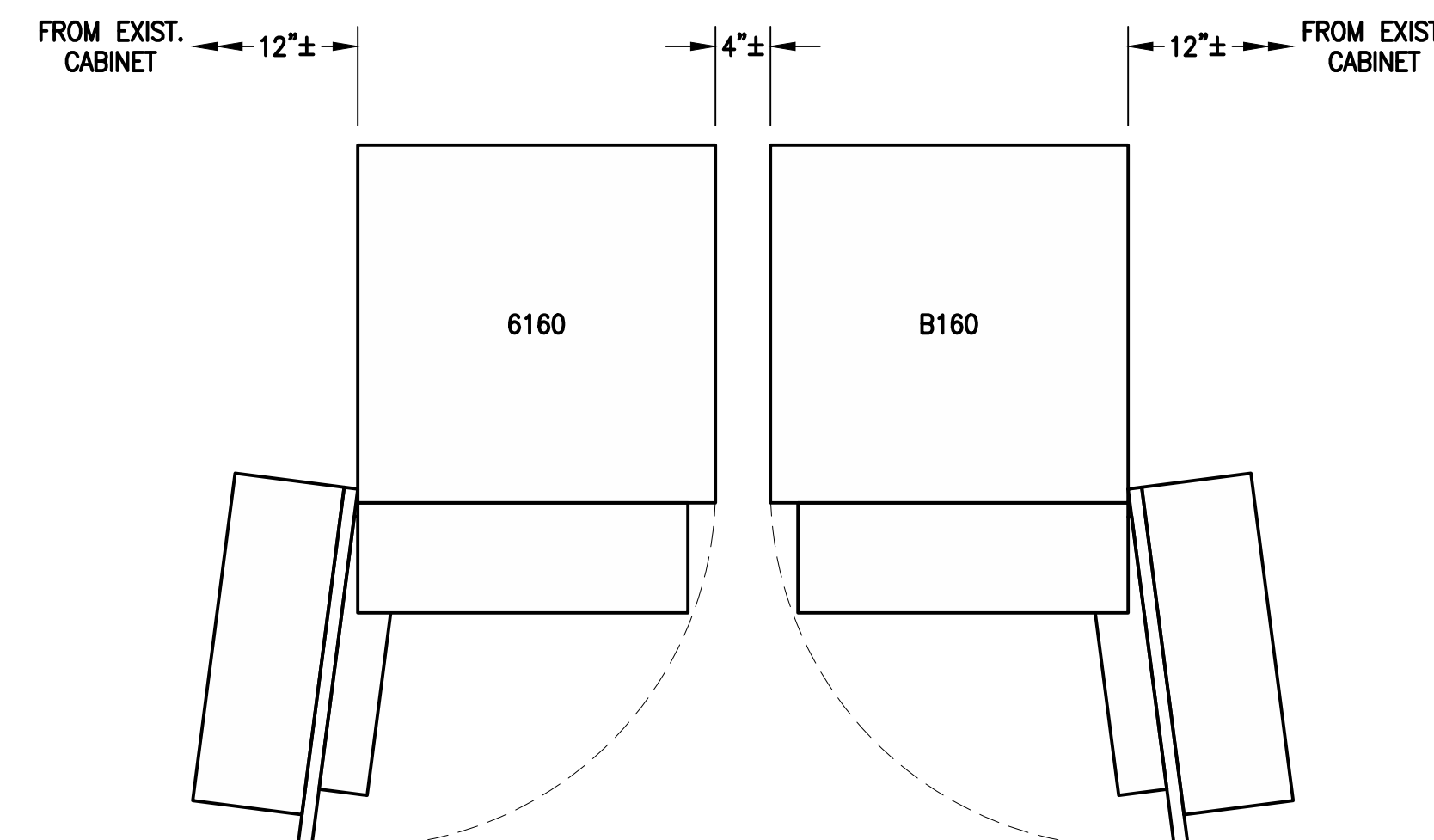
ERICSSON RADIO 4449 B71+B85  
DIMENSIONS: 14.9"H x 13.2"W x 9.3"D  
WEIGHT: 74.0 LBS  
1 PER SECTOR, TOTAL OF 3



ERICSSON RRUS 4415 B25  
DIMENSIONS: 16.5"H x 13.4"W x 5.9"D  
WEIGHT: 46 LBS  
1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS 1 A-5  
SCALE: N.T.S.

RRUS DETAIL 2 A-5  
SCALE: N.T.S.



ERICSSON 6160 SITE SUPPORT CABINET  
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D  
TOTAL OF 1

ERICSSON B160 BATTERY CABINET  
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D  
TOTAL OF 1

EQUIPMENT DETAIL 3 A-5  
SCALE: N.T.S.

PROP. 2-1/2" SCH. 40 PIPE, 138" LONG

PROP. T-MOBILE ERICSSON AIR6449 B41 M-MIMO ANTENNA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME ON PROP. PIPE (MOUNT PER MANUFACTURER'S SPECIFICATIONS.)

NOTE: PROPOSED RFS ANTENNA, AIR32 ANTENNA, AND RADIO UNITS NOT SHOWN, FOR CLARITY. INSTALL TO EXISTING PIPE MASTS PER MANUFACTURER'S SPECIFICATIONS.

INSTALL PIPE TO NON-PENETRATING BALLAST FRAME WITH 1/2" U-BOLTS (TOTAL OF 2)

STRUCTURAL ANALYSIS NOTE: REFER TO SHEET S-1 & STRUCTURAL ANALYSIS FOR REINFORCEMENT OF EXISTING BALLAST FRAME.

EXIST. T-MOBILE NON-PENETRATING BALLAST FRAME

EXIST./PROP. CONCRETE BALLAST

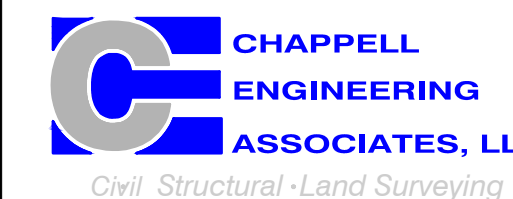
ANTENNA MOUNTING DETAIL 4 A-5  
SCALE: N.T.S.

T-MOBILE NORTHEAST LLC

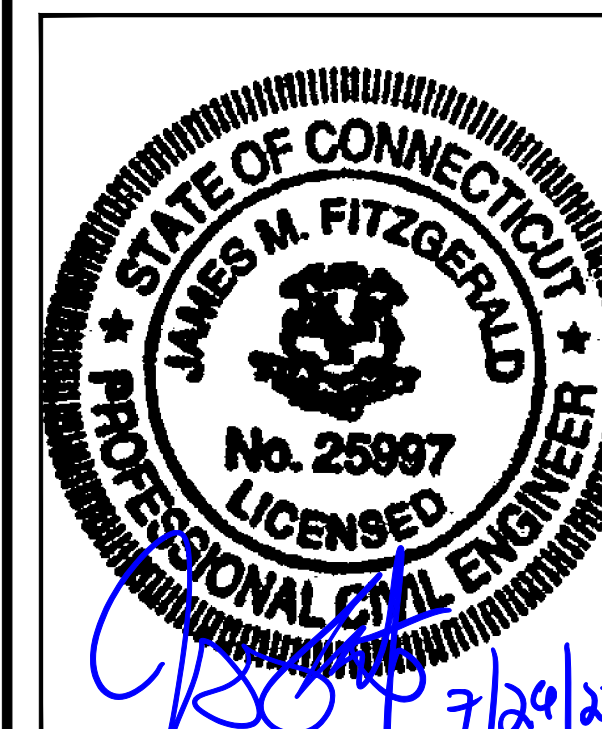
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700



SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	07/28/20	ISSUED FOR CONSTRUCTION	CMC
0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
CT11090A

SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
SITE DETAILS

SHEET NUMBER  
A-5



T-MOBILE  
NORTHEAST LLC

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CHECKED BY: JMT

APPROVED BY: JMT

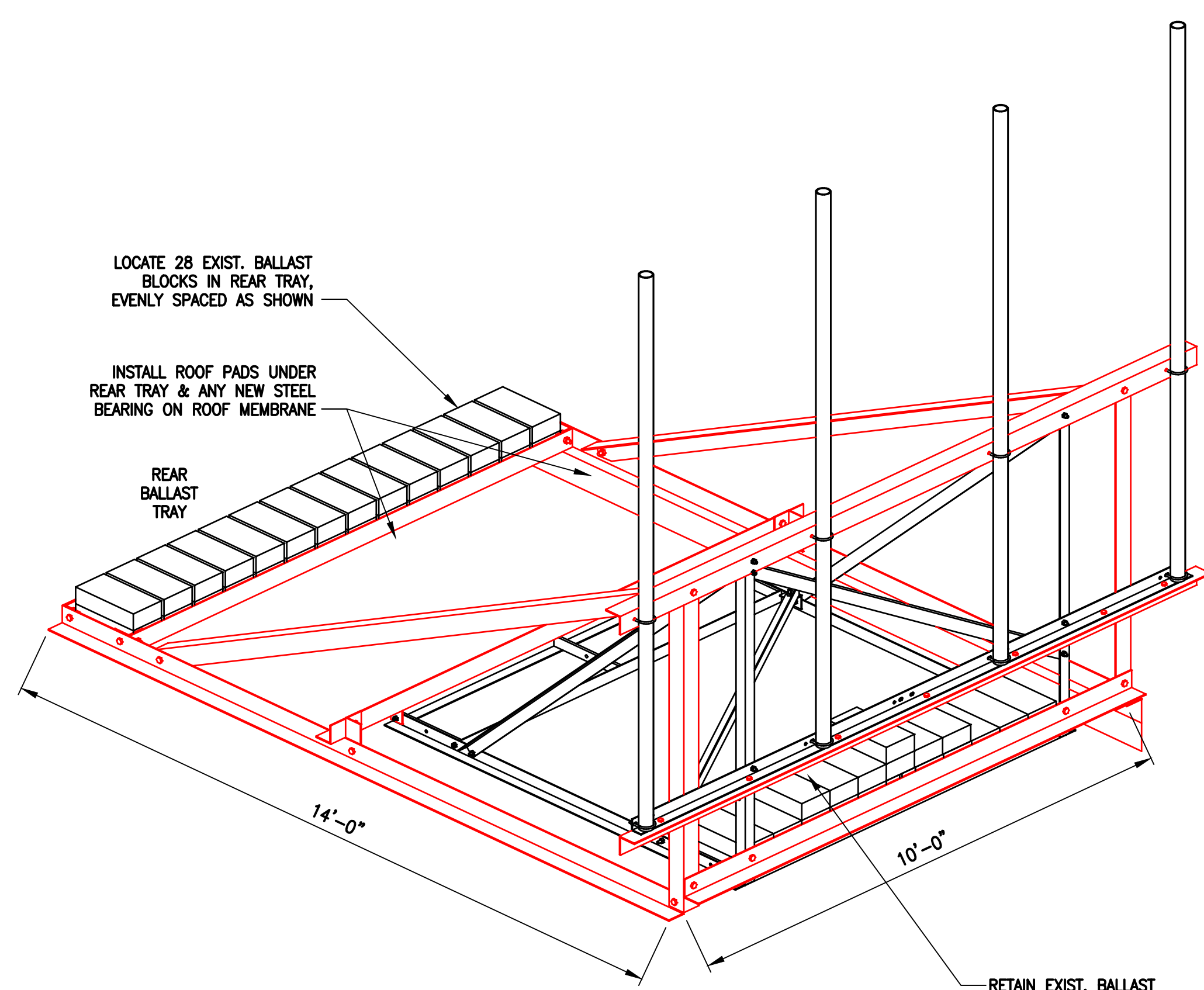
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REV.	DATE	DESCRIPTION	BY
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0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**

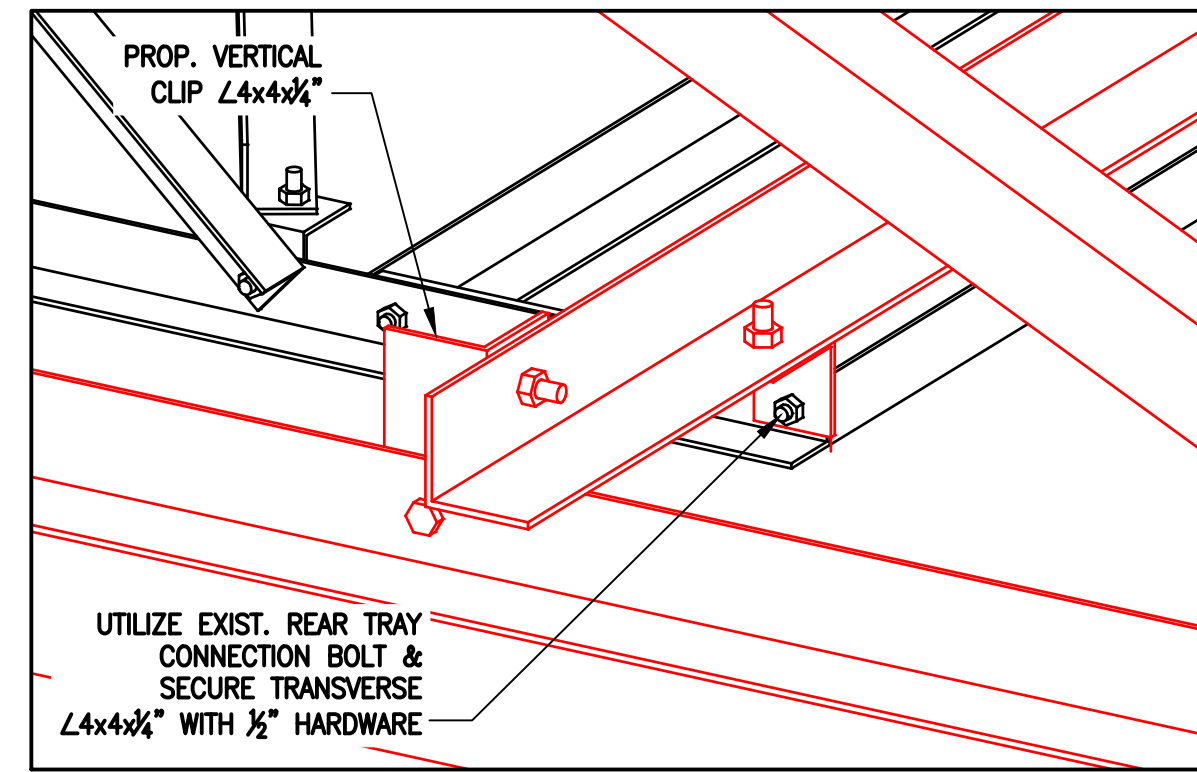
SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
**BALLAST MOUNT  
REINFORCING DETAILS  
(TYP 3 SECTORS)**

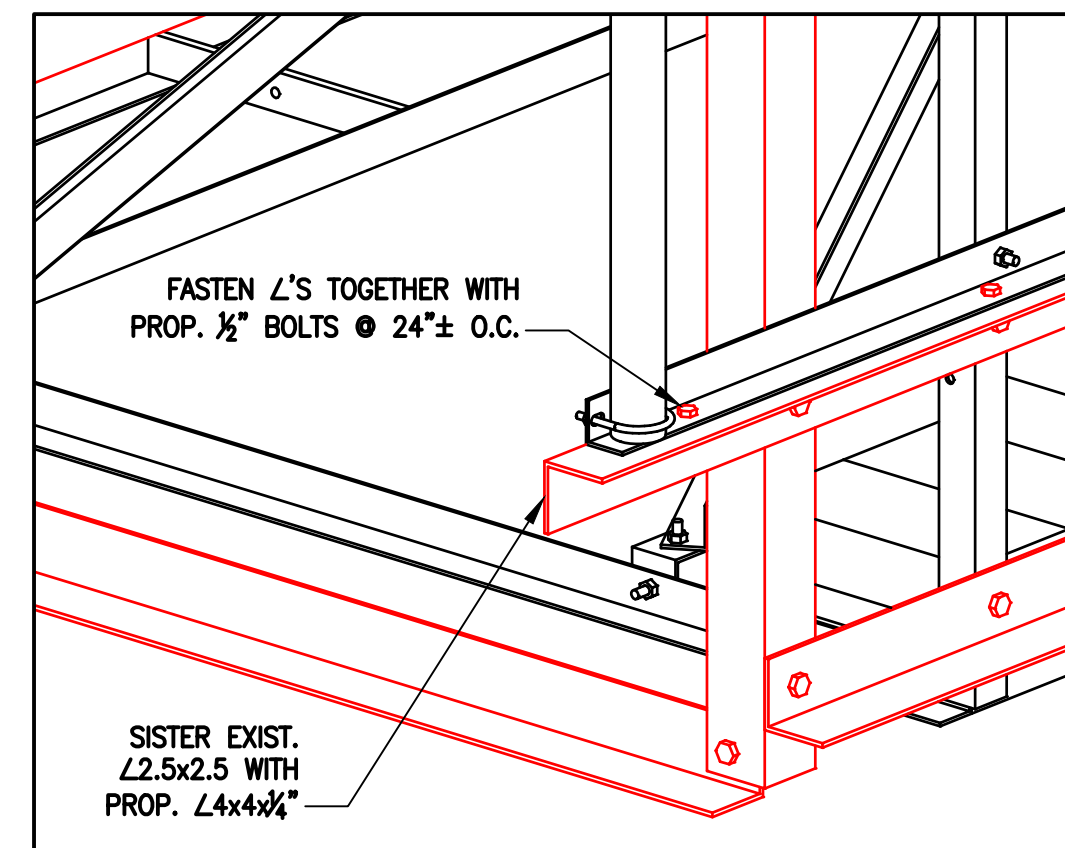
SHEET NUMBER  
**S-1**



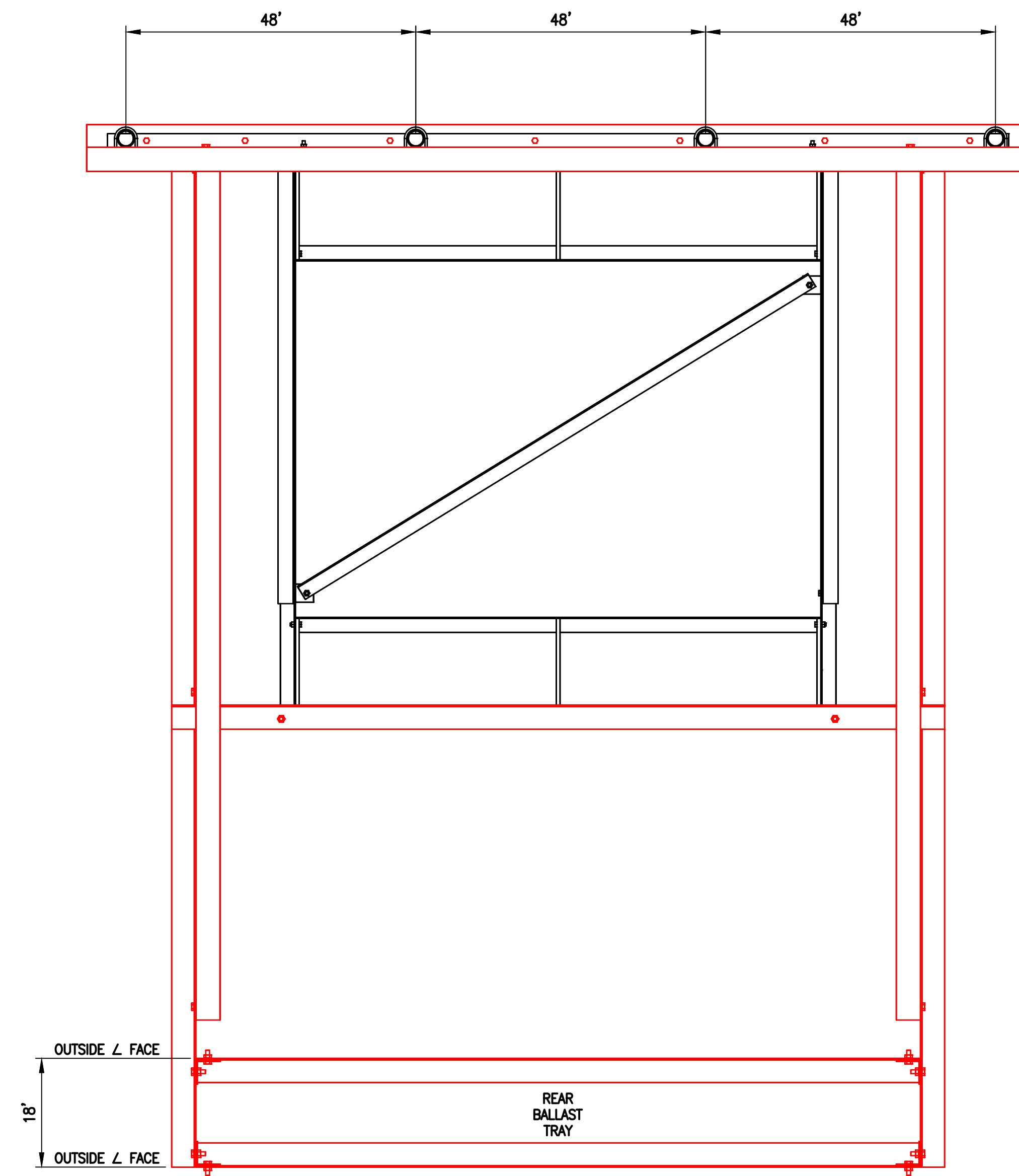
REINFORCED BALLAST FRAME - ISOMETRIC VIEW



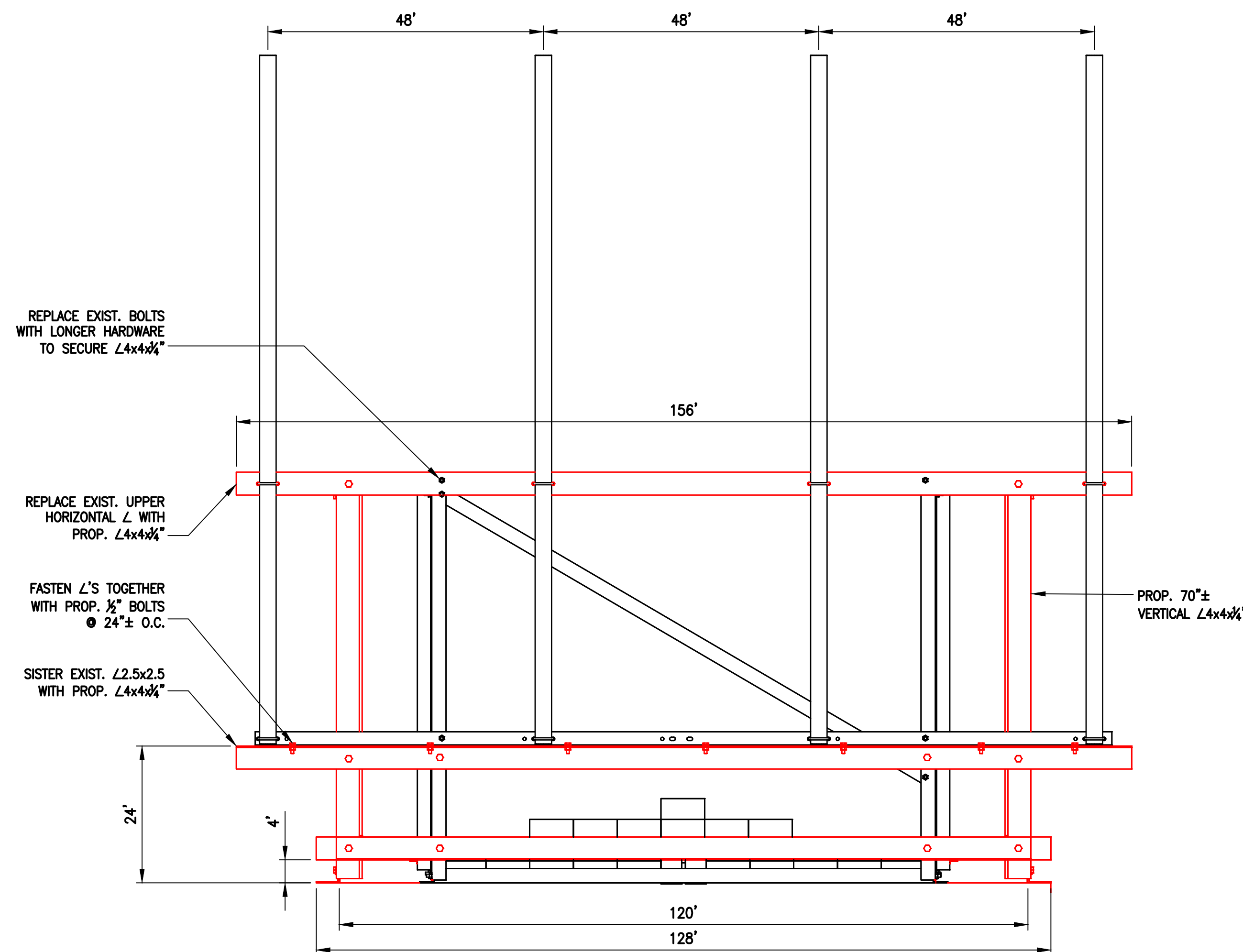
EXISTING REAR TRAY CONNECTION



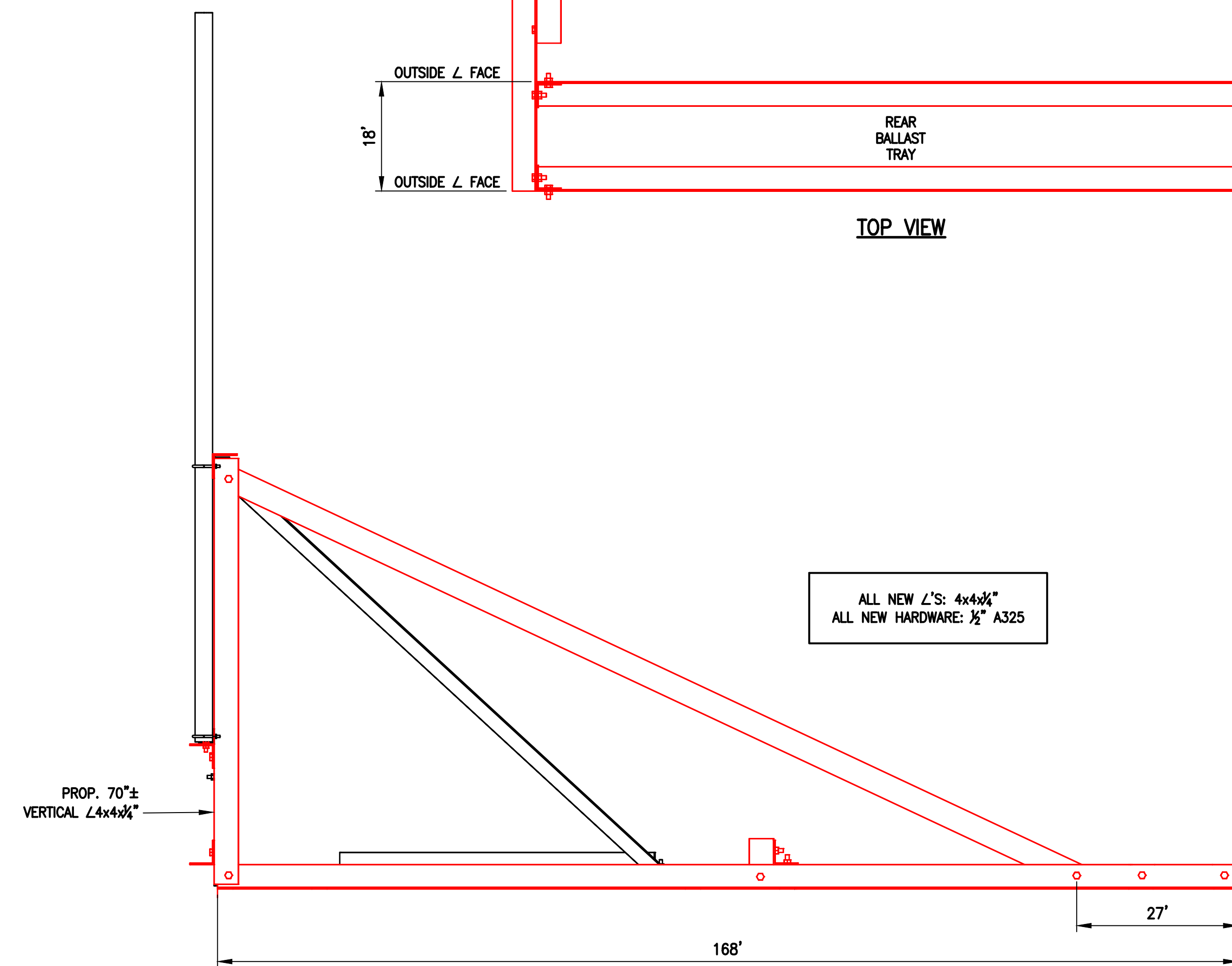
FRONT CORNER DETAIL



TOP VIEW



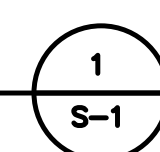
FRONT VIEW



SIDE VIEW

PROP. BALLAST ANTENNA FRAMES

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



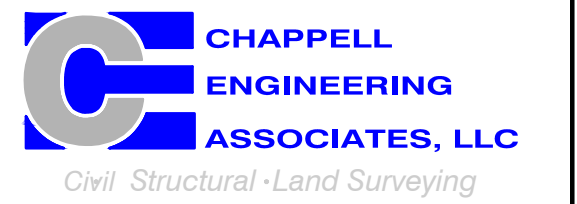


**T-MOBILE  
NORTHEAST LLC**

15 COMMERCE WAY, SUITE B  
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CHECKED BY: JMT

APPROVED BY: JMT

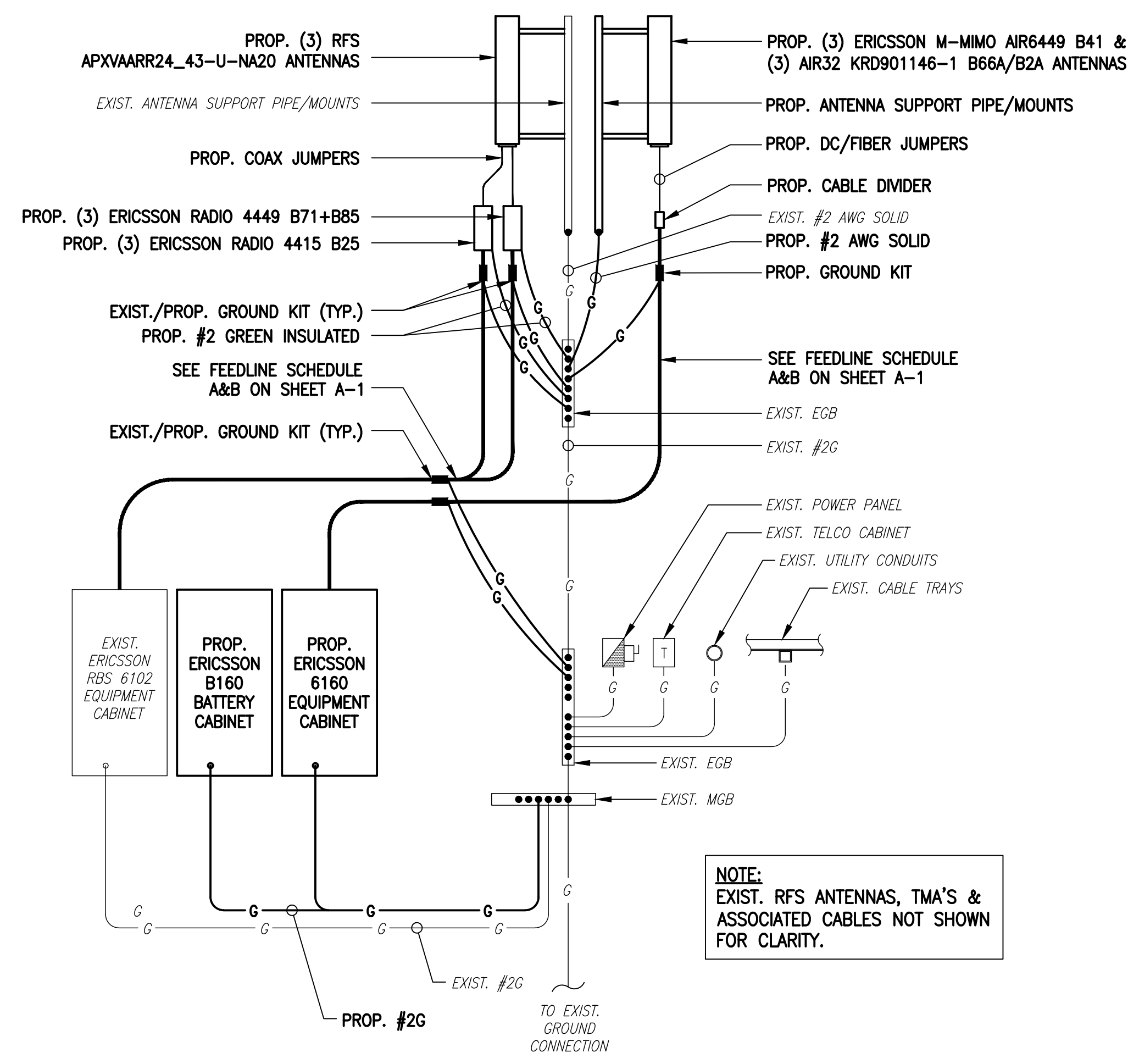
SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
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0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**

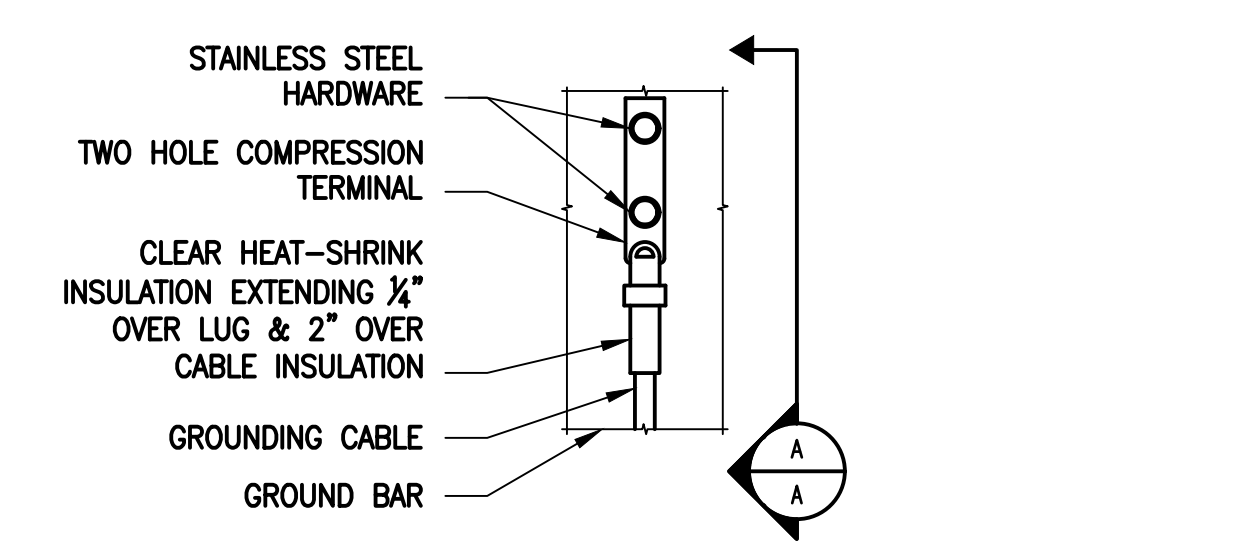
SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
**ELECTRIC & GROUNDING  
DETAILS**

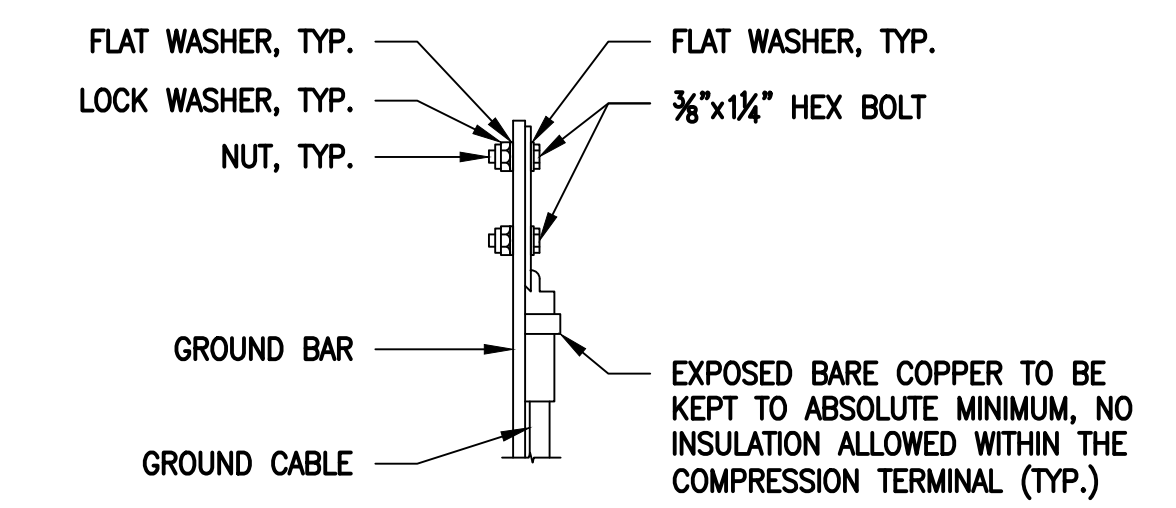
SHEET NUMBER  
**E-1**



**GROUNDING RISER DIAGRAM**  
SCALE: NOT TO SCALE



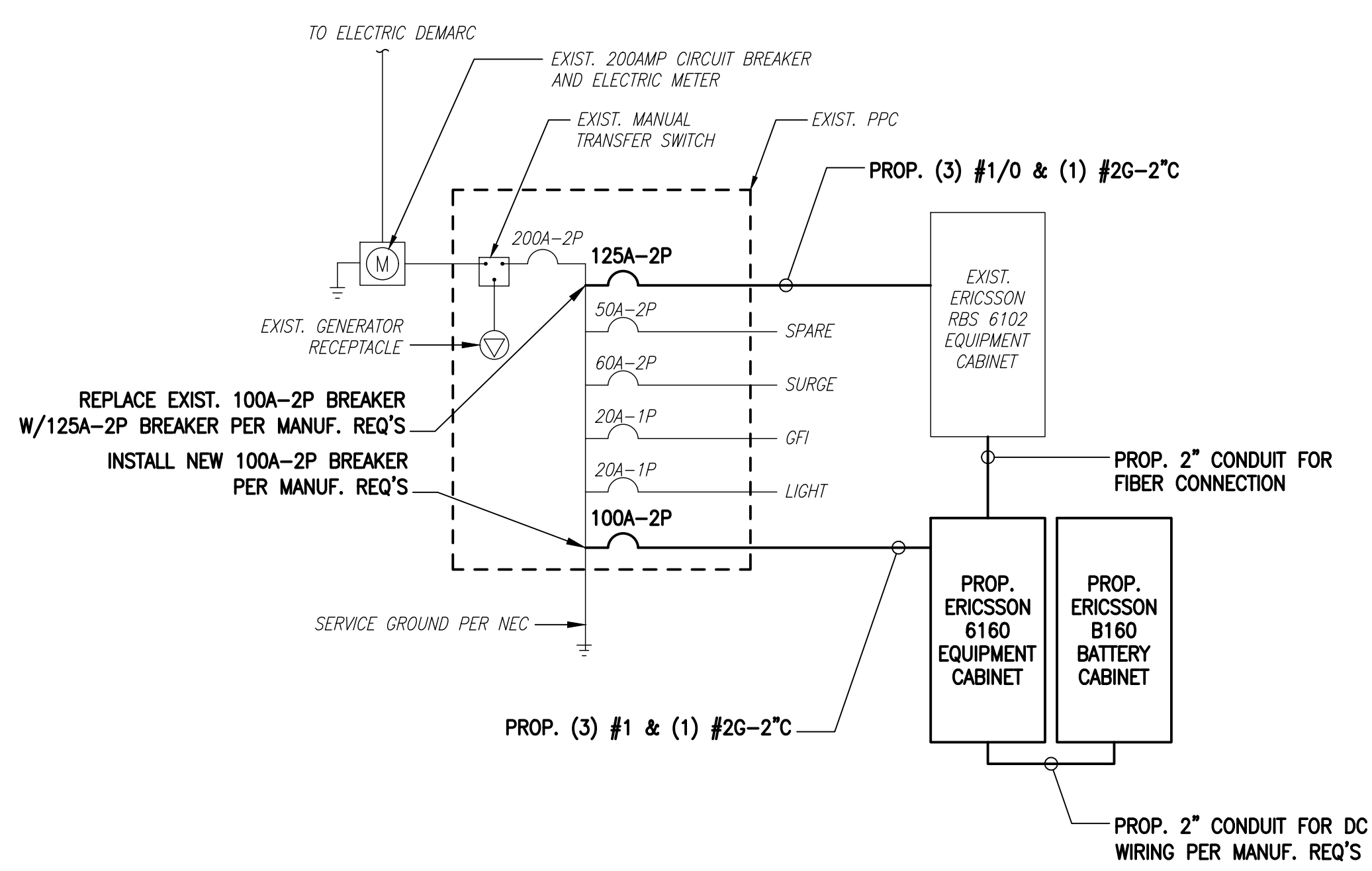
**ELEVATION**



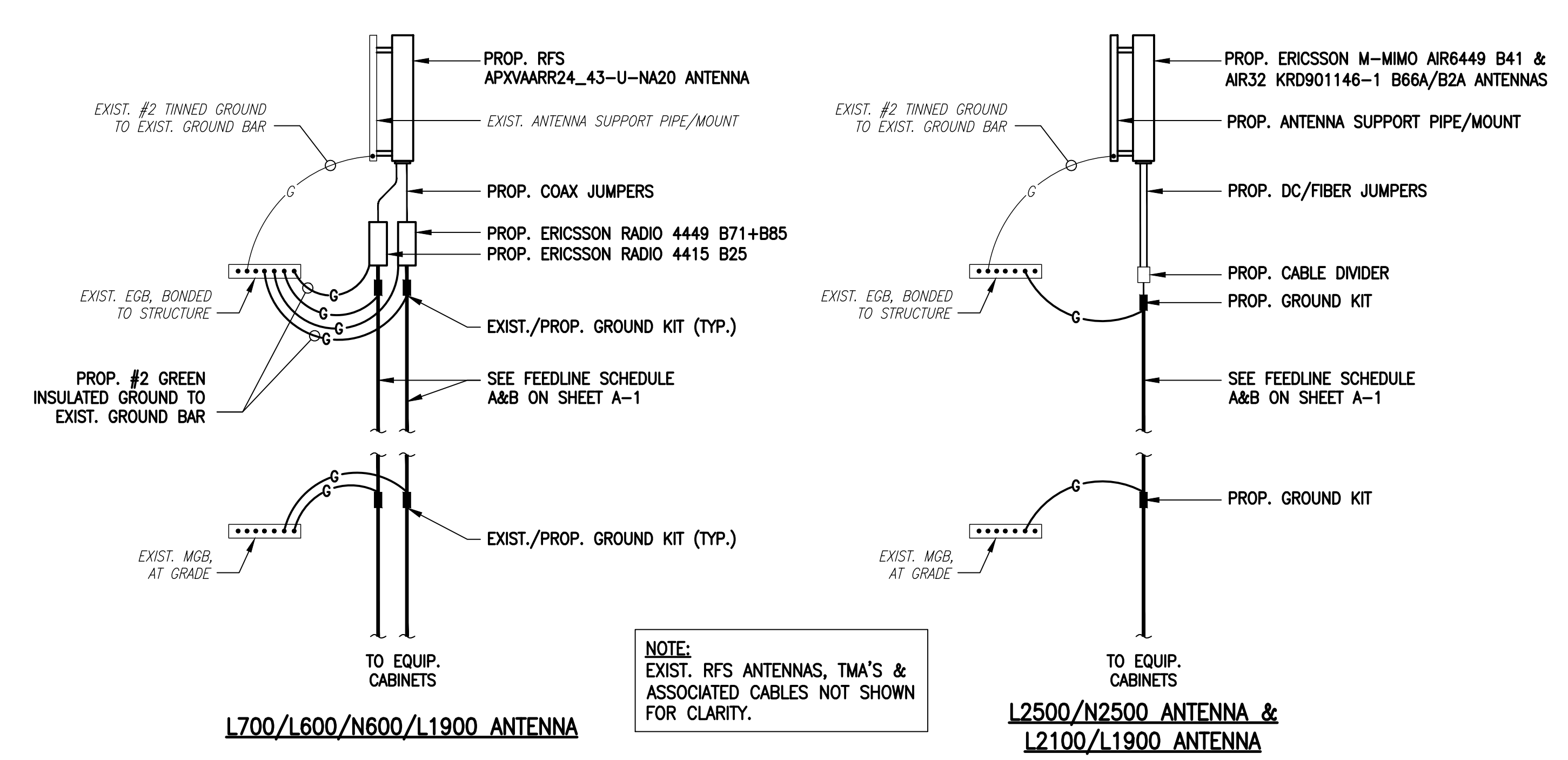
**SECTION A-A**

- NOTES:**
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
  - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
  - CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

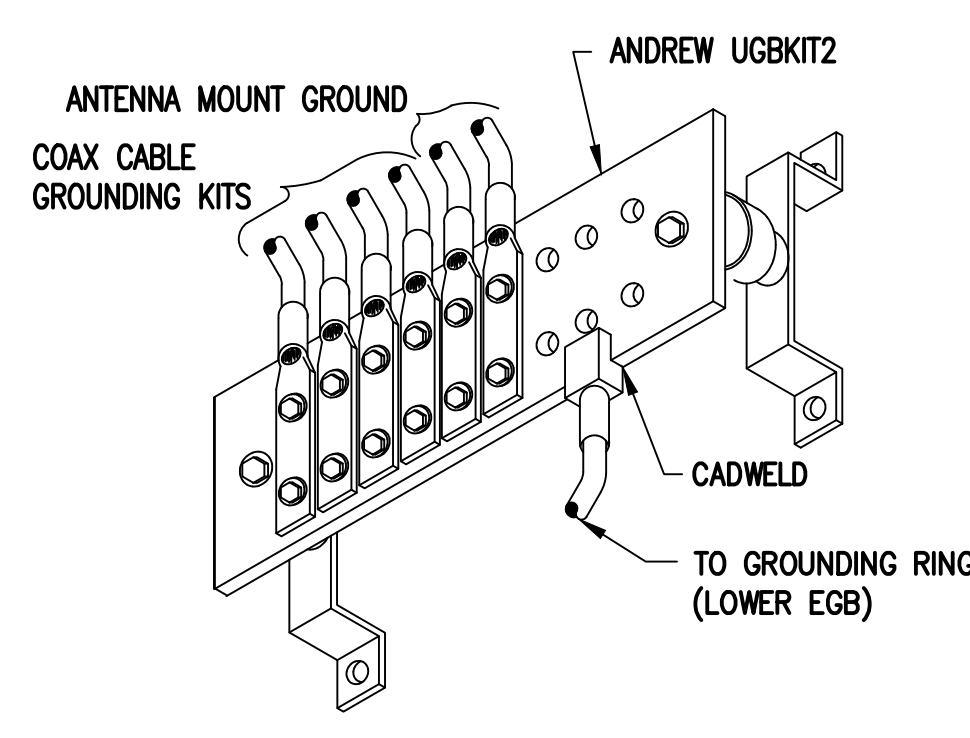
**TYPICAL GROUND BAR CONNECTIONS DETAIL**  
SCALE: NOT TO SCALE



**ONE LINE DIAGRAM**  
SCALE: NOT TO SCALE



**COAX CABLE CONNECTION AND GROUNDING DETAIL**  
SCALE: NOT TO SCALE



**GROUND BAR (EGB)**  
SCALE: NOT TO SCALE

**ELECTRICAL AND GROUNDING NOTES**

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

# EXHIBIT 7



• • **T** • • **Mobile** • •

**15 Commerce Way  
Suite B  
Norton, MA 02766**

**STRUCTURAL ANALYSIS**  
**CT11090A – GREENWICH / PUTNAM AVE 2**



Address:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

Date:  
**JUNE 29, 2020**



June 29, 2020

•T\*\*\*Mobile•

15 Commerce Way  
Suite B  
Norton, MA 02766

**Structural Analysis of Antenna and Equipment Loads**

**RE:**

---

Site Number CT11090A  
Site Name Greenwich / Putnam Ave 2  
Site Address 411 West Putnam Avenue, Greenwich, CT 06830

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To whom it may concern:

Chappell Engineering Associates, LLC has performed a structural analysis of the existing roof mounted ballast antenna frames at the above-referenced location. Based upon the site walk completed on 06-12-2020, the existing 3-sector site consists of a single elevated steel frame with equipment cabinets and three (3) roof mounted ballast antenna frames.

T-Mobile currently proposes to install one (1) Ericsson B160 Battery Cabinet and one (1) Ericsson 6160 Equipment Cabinet on the existing elevated steel equipment frame. The proposed cabinets will be located in the space reserved for future equipment as indicated in the table below. The total weight of the equipment cabinets being installed is 2,451lbs. The net change (-549lbs.) is a net decrease in the overall load to the frame as compared to the original (existing) design condition. A sketch of the proposed changes is included in on our construction drawings, and the table below summarizes the existing and proposed configurations:

Existing Equipment Configuration		Proposed Equipment Configuration	
Cabinet Type	Weight	Cabinet Type	Weight
PPC	150 lbs	PPC	150 lbs
Transformer	410 lbs.	Transformer	410 lbs.
Ericsson RBS 6102	1219 lbs.	Ericsson RBS 6102	1219 lbs.
Ericsson RS8000 (future)	1500 lbs.	Ericsson 6160	680 lbs.
Ericsson RS8000 (future)	1500 lbs.	Ericsson B160	1771 lbs.
<b>Total</b>	<b>4779 lbs.</b>		<b>4230 lbs.</b>

Additionally, T-Mobile proposes to install three (3) total 2500 MHz antennas, three (3) total 600/700MHz antennas, three (3) total 1900MHz antennas. Ancillary equipment serving to supplement the proposed antennas will include three (3) total RRH4449 B71+B85 remote radios and three (3) total RRH4415 B25 remote radios at the *alpha*, *beta* and *gamma* sectors to supplement the existing three (3) in-service antennas at these locations. Additionally, three (3) total DC/Hybrid cables will be run to service the proposed antenna (1 per sector, total of 3 sectors receiving the new antenna).

The existing *alpha*, *beta* and *gamma* sector antenna frames do not have the required capacity to support the proposed antennas, and will be reinforced to provide sufficient capacity to support the proposed antenna loads. The existing rear ballast will be re-located to the new larger footprint frames. Our calculations are enclosed.

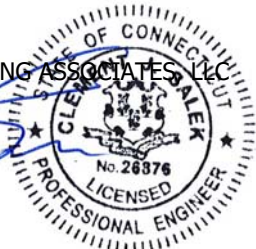
Photos of the existing ballast frames and the existing antenna mounting locations are included in this report. The appropriate antenna mounting plans and details have been included in our drawings which are also enclosed for your convenience.

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

Very truly yours,

CHAPPELL ENGINEERING ASSOCIATES, LLC

Clement J Salek, P.E.  
CJS/cjs







Existing T-Mobile Equipment Frame



Existing T-Mobile Equipment Frame





Existing T-Mobile Alpha Sector Antennas



Existing T-Mobile Alpha Sector Ballast





Existing T-Mobile Beta Sector Antennas



Existing T-Mobile Beta Sector Ballast





Existing T-Mobile Gamma Sector Antennas



Existing T-Mobile Gamma Sector Ballast

Site Name/Number:	CT11090A Greenwich / Putnam Ave 2	 <b>CHAPPELL ENGINEERING ASSOCIATES, LLC</b> Civil • Structural • Land Surveying
Site Address:	411 West Putnam Avenue, Greenwich, CT 06830	
CEA Job Number:	1815.141	
Date:	June 29, 2020	

### Appurtenances Attached to Ballast Frame:

	RFS APX16DWV-S-E-A20	Twin TMA	RFS APXVAARR24 43-U-NA20	RRUS-4415	RRUS-4449	Ericsson M-MIMO AIR6449	Ericsson AIR32 B2A/B66A			
Depth, d =	3.2 in	4.0 in	8.7 in	5.9 in	10.4 in	8.3 in	8.7 in			
Width, w =	13.0 in	11.0 in	24.0 in	13.4 in	13.2 in	20.5 in	12.9 in			
Height, h =	56.0 in	10.0 in	96.0 in	16.5 in	14.9 in	33.1 in	56.6 in			
Height ARL	10.6 ft	7.3 ft	8.6 ft	5 ft	5 ft	10.6 ft	10.6 ft			
Weight =	41 lbs	21 lbs	128 lbs	46 lbs	74 lbs	103 lbs	132 lbs			

Design Code: ASCE 7

Z (Above Ground Level) =	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	60 ft	
Height of Projection Area =	4.7 ft	0.8 ft	8.0 ft	1.4 ft	1.2 ft	2.8 ft	4.7 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	
Width of Projection Area =	1.1 ft	0.9 ft	2.0 ft	1.1 ft	1.1 ft	1.7 ft	1.1 ft	0.0 ft	0.0 ft	0.0 ft	0.0 ft	
Af (Projected Area of Gross) =	5.1 s.f.	0.8 s.f.	16.0 s.f.	1.5 s.f.	1.4 s.f.	4.7 s.f.	5.1 s.f.	0.0 s.f.	0.0 s.f.	0.0 s.f.	0.0 s.f.	
Reference Wind Velocity, V =	106 mph	106 mph	106 mph	106 mph	106 mph	106 mph	106 mph	106 mph	106 mph	106 mph	106 mph	
Exposure =	B	B	B	B	B	B	B	B	B	B	B	Section 6.5.6.3
G (Gust effect factor) =	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	Section 6.5.8
Cr (Force Coefficient) =	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	Fig 6-20 to 6-23
Kz (Exposure Coefficients) =	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	6.5.6.6, Table 6-3
K1 (Multiplier) =	0	0	0	0	0	0	0	0	0	0	0	Figure 6-2
K2 (Multiplier) =	0	0	0	0	0	0	0	0	0	0	0	Figure 6-2
K3 (Multiplier) =	0	0	0	0	0	0	0	0	0	0	0	Figure 6-2
Kzt (Topographic Factor) : (1+K1*K2*K3)^2 =	1	1	1	1	1	1	1	1	1	1	1	Section 6.5.7.2
Kd =	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	Table 6-4
I (Importance Factor) =	1	1	1	1	1	1	1	1	1	1	1	Table 6-2
Qz = .00256*Kz*Kzt*Ka*V^2*I (psf)	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	20.8 psf	psf, Section 6.5.10
Reference Wind Pressure, p =	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	24.7 psf	

F, lbs = 125      19      396      38      34      117      125      0      0      0

### Required Minimum Ballast:

**Ballast Frame Geometry**

Frame width = 10 ft Frame depth = 14.00 ft Centroid of front ballast to toe, dr = 0.67 ft Centroid of rear ballast to toe, dr = 13.33 ft Frame Footprint Area = 140.00 ft <sup>2</sup> Weight of steel frame = 1550 lbs	Common 8x8x16 Block Wgt = 37 lbs Solid 8x8x16 Block Wgt = 68 lbs Solid 4x8x16 Block Wgt = 34 lbs
--	--

Safety Factor for Overturning = 1.5      Total Appurtenance Wgt = 545 lbs

Let Wt = total ballast required, lbs  
 Let Wr = 0.5 Wt  
 Let Wf = 0.5 Wt

**For Stability:**

$$M_{causing} \leq M_{resisting}$$

$$M_{causing} \leq M_{frame\ wgt} + M_{rear\ ballast} + M_{front\ ballast}$$

$$M_{causing} \leq M_{frame\ wgt} + 0.5 (Wt)(dr) + 0.5 (Wt)(df)$$

**Solving for Wt:**

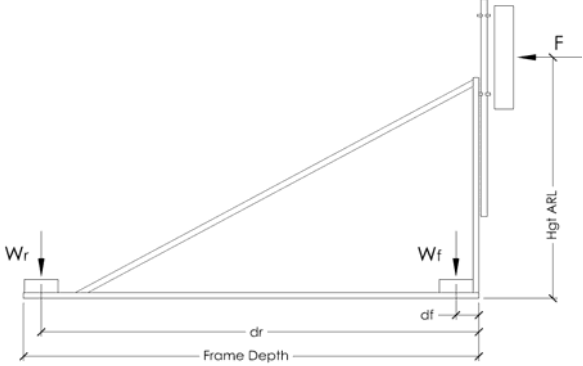
$$\frac{M_{causing} - M_{frame\ wgt}}{0.50\ dr + 0.50\ df} \leq Wt \quad (\text{min total ballast req'd})$$

$$\frac{10650.69}{7.00} \leq Wt$$

**Min. Total Ballast Req'd (Wt) = 1522 lbs <= Wt**

**Min. Front Ballast Req'd (Wr) = 761 lbs = 23 Solid 4x8x16 Blocks**  
**Min. Rear Ballast Req'd (Wf) = 761 lbs = 23 Solid 4x8x16 Blocks**  
**Total Loaded Frame Weight = 3617 lbs = 46 Total Blocks per Ballast Mount**

Frame Surcharge = 25.8 psf



**Frame Geometry**



# GREENWICH/PUTNAM AVE 2

411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830  
FAIRFIELD COUNTY

SITE NO.: CT11090A

SITE TYPE: ROOFTOP

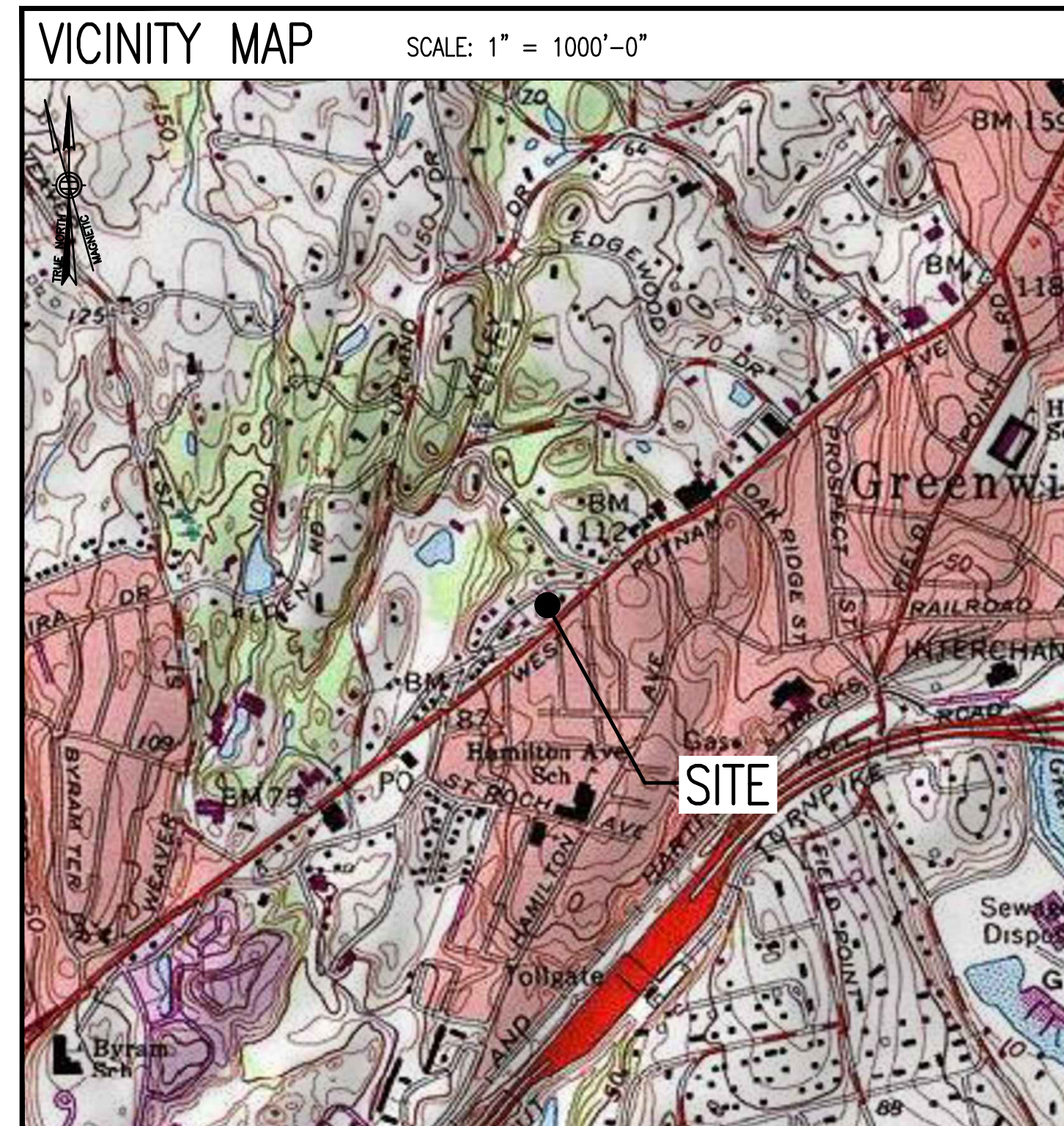
RF DESIGN GUIDELINE: 67D5A99DB HYBRID

APPROVALS			
PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
CONSTRUCTION:	DATE:	OPERATIONS:	DATE:
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

T-MOBILE TECHNICIAN SITE SAFETY NOTES	
LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
SECTOR D:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

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.	11. 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.
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 EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.	12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOTENT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.	13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.	14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.	15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'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 CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
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.	16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
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.	17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY 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 IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.	

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



**DO NOT SCALE DRAWINGS**

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET INDEX		
SHEET NO.	DESCRIPTION	REV. NO.
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GN-1	GENERAL NOTES	0
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A-3	BUILDING ELEVATION	0
A-4	ANTENNA PLANS	0
A-5	SITE DETAILS	0
S-1	BALLAST MOUNT REINFORCING DETAILS	0
E-1	ELECTRIC & GROUNDING DETAILS	0

**SPECIAL ZONING NOTE:**  
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

SITE NOTES	
1.	THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE. <ul style="list-style-type: none"> <li>• ADA COMPLIANCE NOT REQUIRED.</li> <li>• POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.</li> <li>• NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.</li> </ul>
2.	CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3.	NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. <ul style="list-style-type: none"> <li>• BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE</li> <li>• ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE</li> <li>• STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.</li> </ul>

**T-MOBILE  
NORTHEAST LLC**

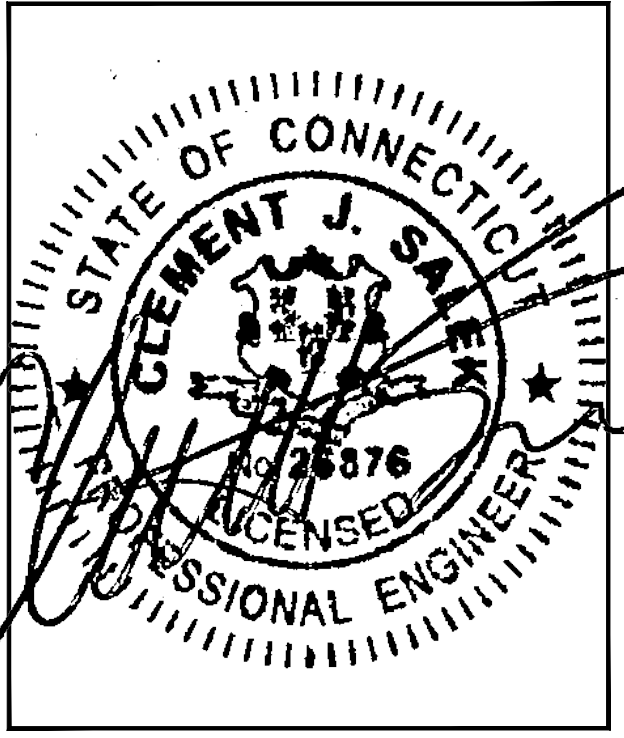
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700

**SBA**

SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720

**CHAPPELL  
ENGINEERING  
ASSOCIATES, LLC**  
*Civil Structural Land Surveying*

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



PROJECT SUMMARY	
SITE NUMBER:	CT11090A
SBA SITE NUMBER:	CT95623-M
SBA SITE NAME:	GREENWICH/PUTNAM AVE 2
SITE ADDRESS:	411 WEST PUTNAM AVENUE GREENWICH, CT 06830
PROPERTY OWNER:	411 PUTNAM AVE, LLC 411 WEST PUTNAM AVENUE GREENWICH, CT 06830
TOWER OWNER:	MCM ACQUISITION 2017, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	FAIRFIELD COUNTY
ZONING DISTRICT:	GB (GENERAL BUSINESS)
STRUCTURE TYPE:	ROOFTOP
STRUCTURE HEIGHT:	60.5'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	ROBERT ROBESKI PHONE: 732-404-9360 x2245 EMAIL: RRobeski@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.021397° N41°01'17.03" LONGITUDE W.73.641289° W73°38'28.64"

CHECKED BY: JMT  
APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**

SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**



**GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR – T–MOBILE  
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
OWNER – T–MOBILE  
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.
- CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

**SITE WORK GENERAL NOTES:**

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

**CONCRETE AND REINFORCING STEEL NOTES:**

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
CONCRETE CAST AGAINST EARTH.....3 IN.  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER .....2 IN.  
#5 AND SMALLER & WWF .....1½ IN.  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:  
SLAB AND WALL .....¾ IN.  
BEAMS AND COLUMNS .....½ IN.
- A CHAMFER ¼" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.
- CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (BC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;  
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIER'S PLANT.  
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.  
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

**STRUCTURAL STEEL NOTES:**

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

**SOIL COMPACTION NOTES FOR SLAB ON GRADE:**

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.
- AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

**COMPACTION EQUIPMENT:**

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

**CONSTRUCTION NOTES:**

- FIELD VERIFICATION:  
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:  
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- CABLE LADDER RACK:  
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

**ELECTRICAL INSTALLATION NOTES:**

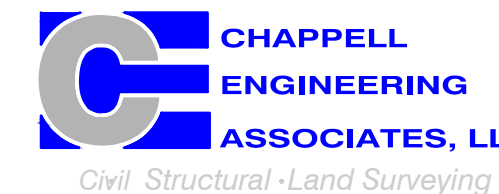
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TERCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLEING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TERCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANS/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

**T-MOBILE  
NORTHEAST LLC**

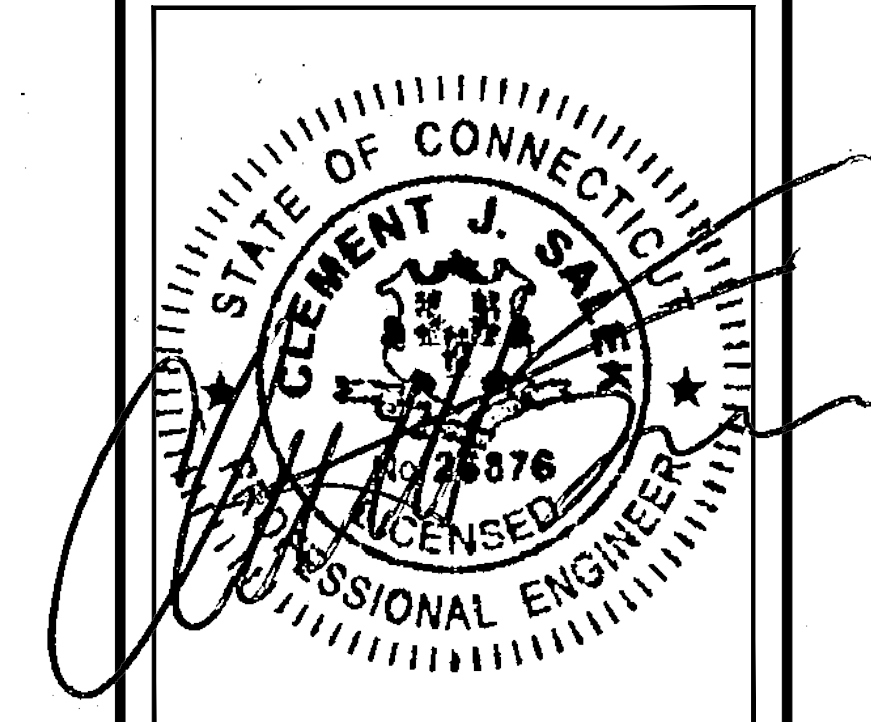
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SITE ADDRESS:  
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SHEET TITLE  
  
GENERAL NOTES

SHEET NUMBER  
  
**GN-1**

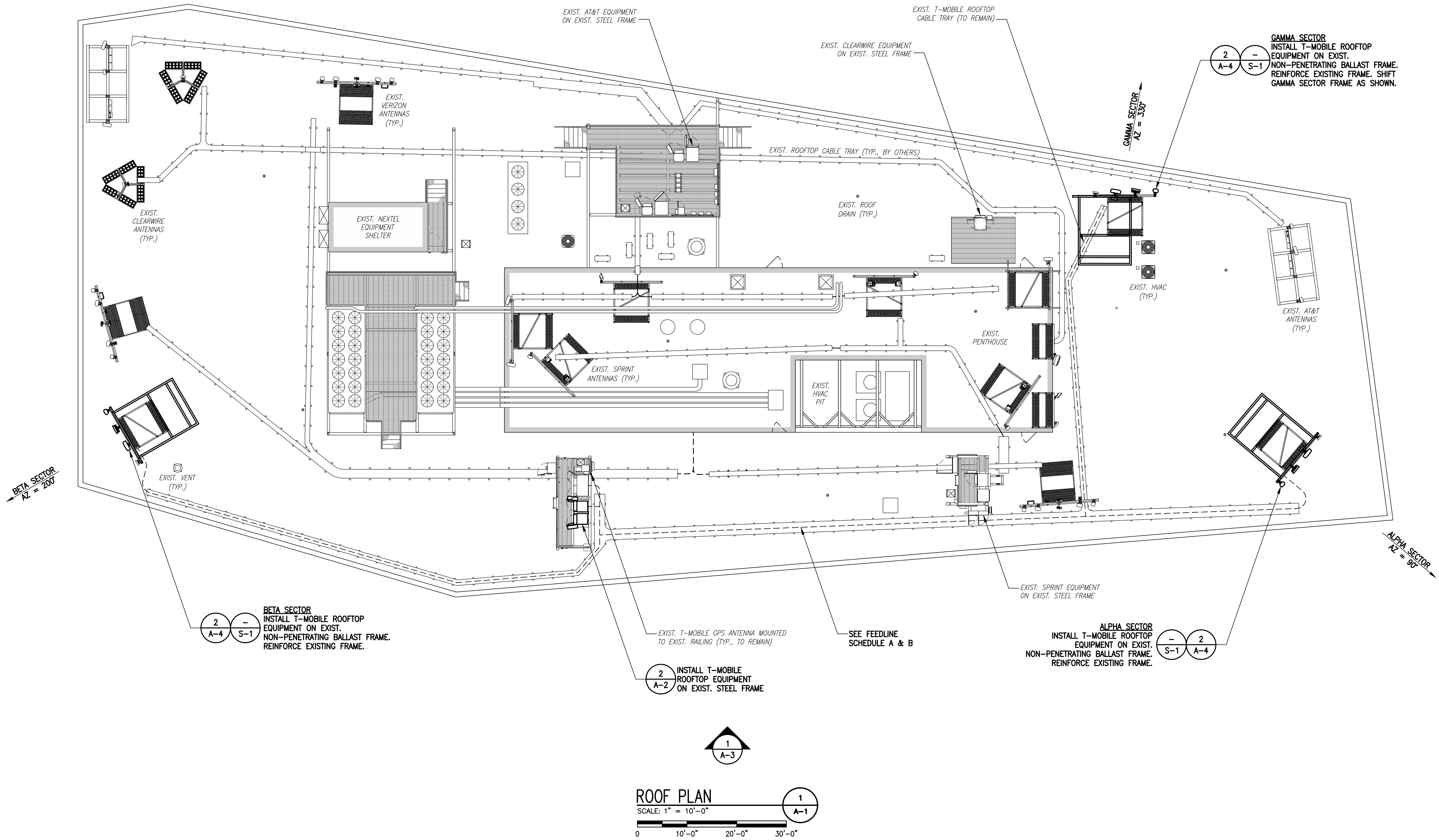
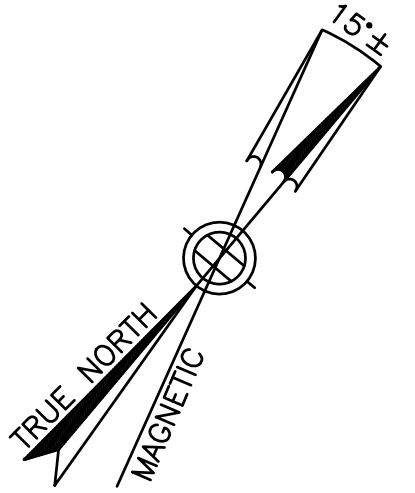


**SUPPLEMENTAL GENERAL CONDITIONS WORK NOTE (BUILDING PROTECTION AND RF EME SAFETY SIGNAGE):**

- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE AND PARAPET WALL DURING CONSTRUCTION. PROPER ROOF PROTECTING MATERIALS SHALL BE PLACED AROUND ALL WORKING AREAS AND NO TOOLS, LADDERS, MATERIALS, OR EQUIPMENT SHALL BE PLACED DIRECTLY ON THE ROOF SURFACE. ANY DAMAGES TO ROOF SURFACE AND/OR PARAPET WALL DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION.
- GENERAL CONTRACTOR SHALL USE BUILDING OWNER'S ROOFING CONTRACTOR FOR ALL ROOF PENETRATIONS.
- GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE THE INSTALLATION OF T-MOBILE RF SAFETY SIGNAGE AND OTHER RF SAFETY IMPROVEMENTS AS SHOWN ON SUPPLEMENTAL PLANS (BY OTHERS) WHICH SHALL BE SLIP-SHEETED BY SBA COMMUNICATIONS INTO THE FINAL CONSTRUCTION DRAWINGS. CHAPPELL ENGINEERING ASSOCIATES, LLC, IS NOT RESPONSIBLE FOR THE DESIGN OF ANY RF SAFETY IMPROVEMENTS.

FEEDLINE SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (12) 1-3/8" COAX CABLES (1) 1/2" COAX CABLE FOR GPS ANTENNA EXISTING TO BE REMOVED: (6) 1-3/8" COAX CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (3) 1-3/8" HCS FIBER CABLES	

**NOTE:**  
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

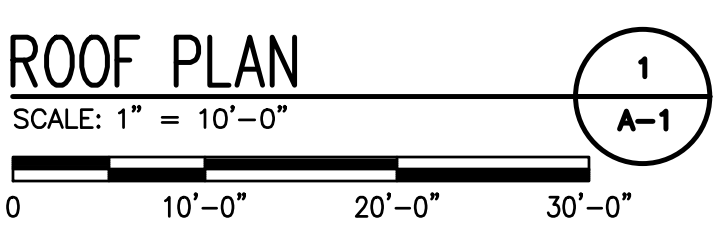


**GAMMA SECTOR**  
INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. NON-PENETRATING BALLAST FRAME. REINFORCE EXISTING FRAME. SHIFT GAMMA SECTOR FRAME AS SHOWN.

**BETA SECTOR**  
INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. NON-PENETRATING BALLAST FRAME. REINFORCE EXISTING FRAME.

INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. STEEL FRAME

**ALPHA SECTOR**  
INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. NON-PENETRATING BALLAST FRAME. REINFORCE EXISTING FRAME.

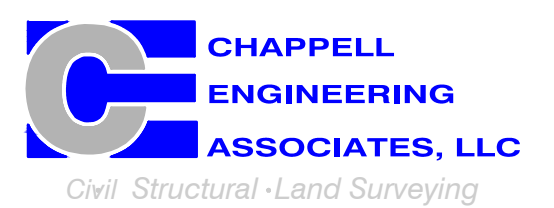


**T-MOBILE  
NORTHEAST LLC**

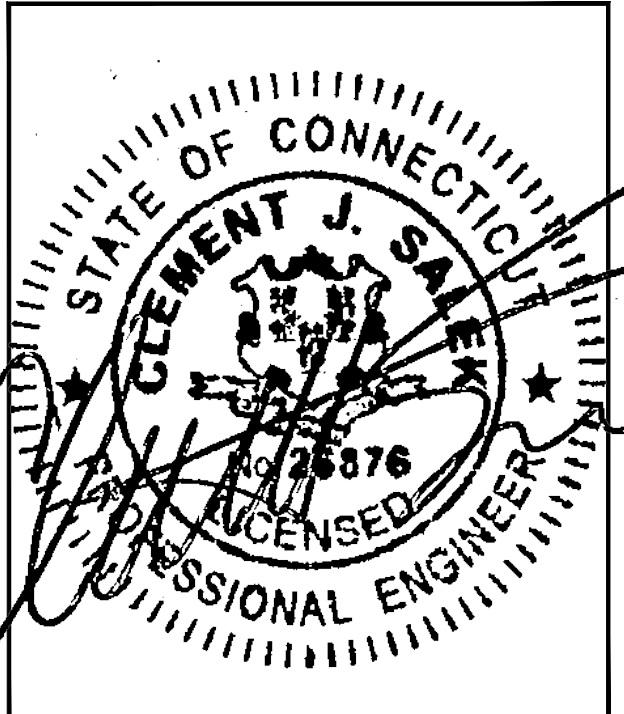
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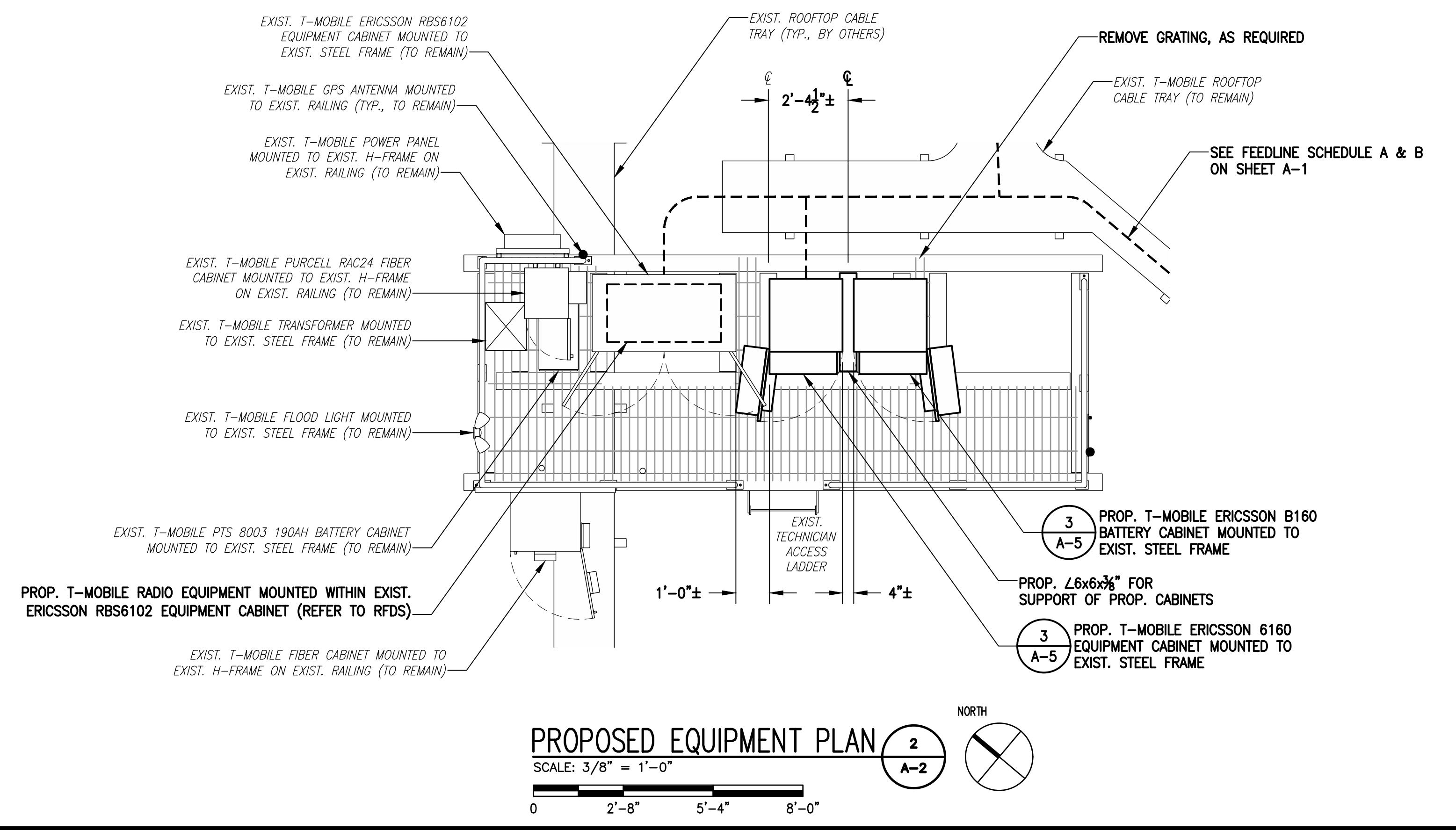
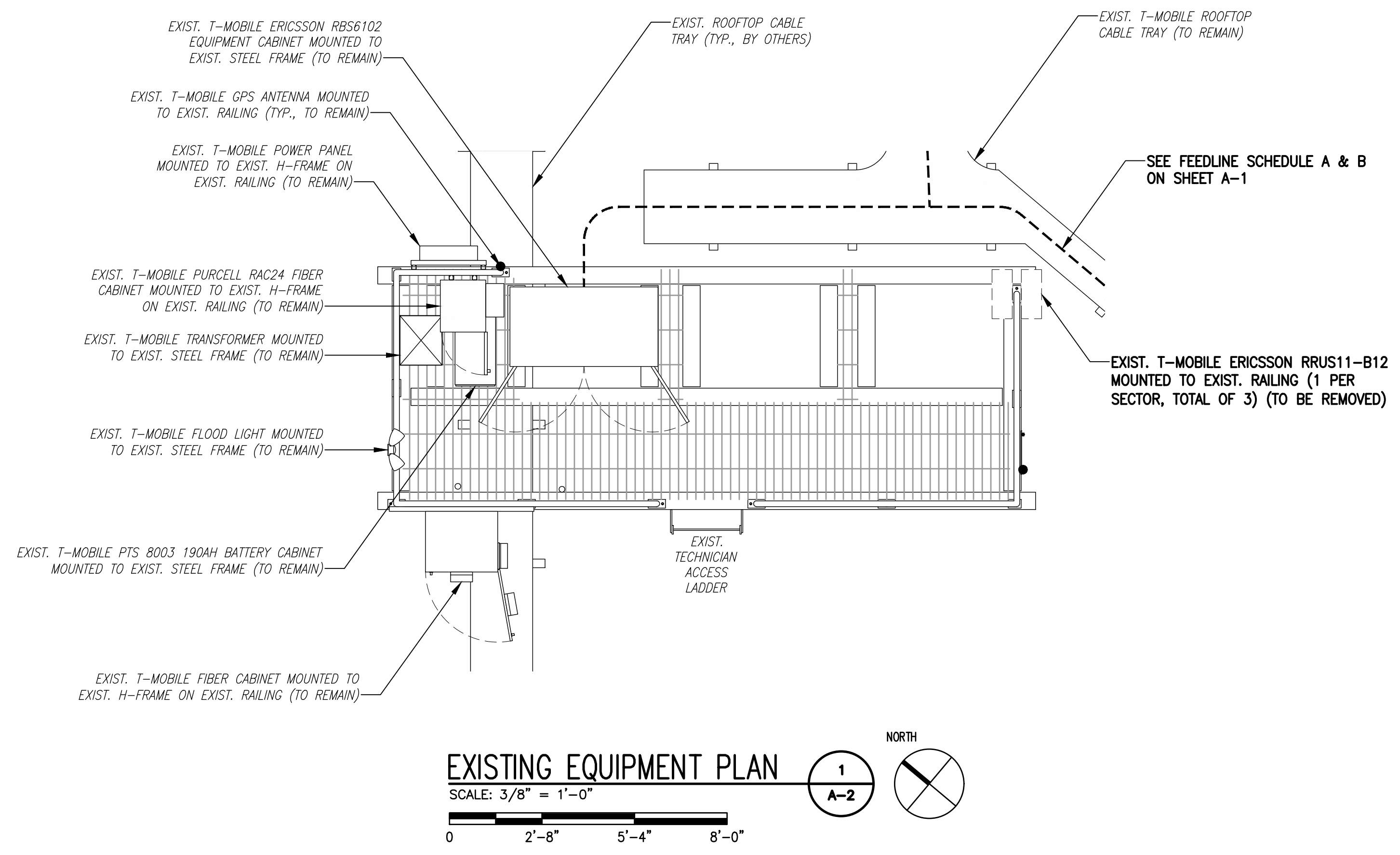
SHEET TITLE  
**ROOF PLAN**

SHEET NUMBER  
**A-1**



**SUPPLEMENTAL GENERAL CONDITIONS WORK NOTE (BUILDING PROTECTION AND RF EME SAFETY SIGNAGE):**

1. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE AND PARAPET WALL DURING CONSTRUCTION. PROPER ROOF PROTECTING MATERIALS SHALL BE PLACED AROUND ALL WORKING AREAS AND NO TOOLS, LADDERS, MATERIALS, OR EQUIPMENT SHALL BE PLACED DIRECTLY ON THE ROOF SURFACE. ANY DAMAGES TO ROOF SURFACE AND/OR PARAPET WALL DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION.
2. GENERAL CONTRACTOR SHALL USE BUILDING OWNER'S ROOFING CONTRACTOR FOR ALL ROOF PENETRATIONS.
3. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE THE INSTALLATION OF T-MOBILE RF SAFETY SIGNAGE AND OTHER RF SAFETY IMPROVEMENTS AS SHOWN ON SUPPLEMENTAL PLANS (BY OTHERS) WHICH SHALL BE SLIP-SHEETED BY SBA COMMUNICATIONS INTO THE FINAL CONSTRUCTION DRAWINGS. CHAPPELL ENGINEERING ASSOCIATES, LLC, IS NOT RESPONSIBLE FOR THE DESIGN OF ANY RF SAFETY IMPROVEMENTS.

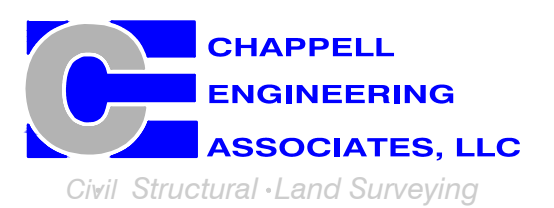


**T-MOBILE  
NORTHEAST LLC**

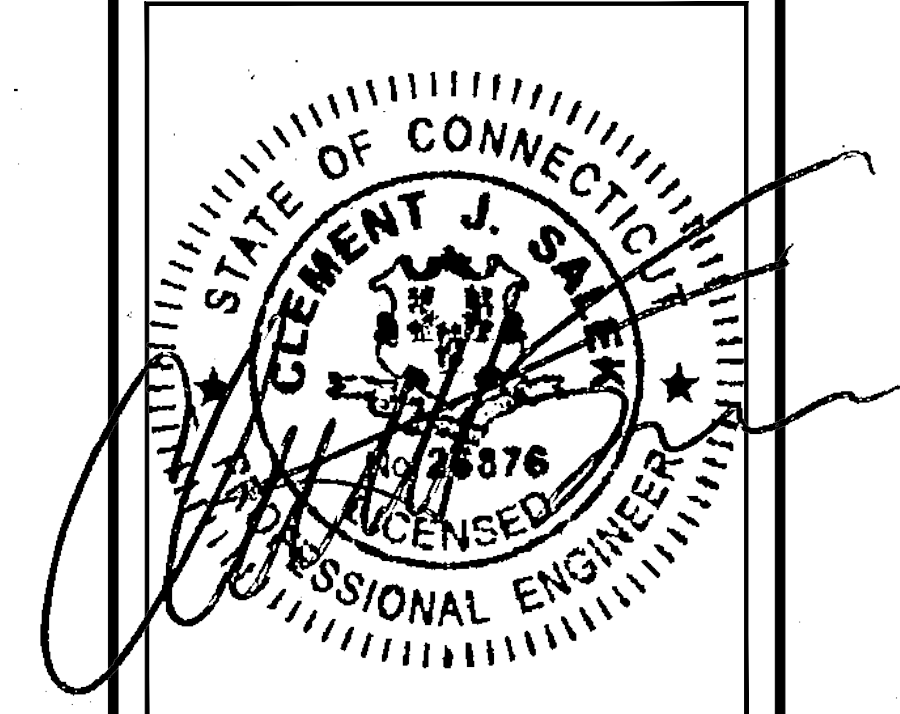
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SHEET TITLE  
**EQUIPMENT PLANS**

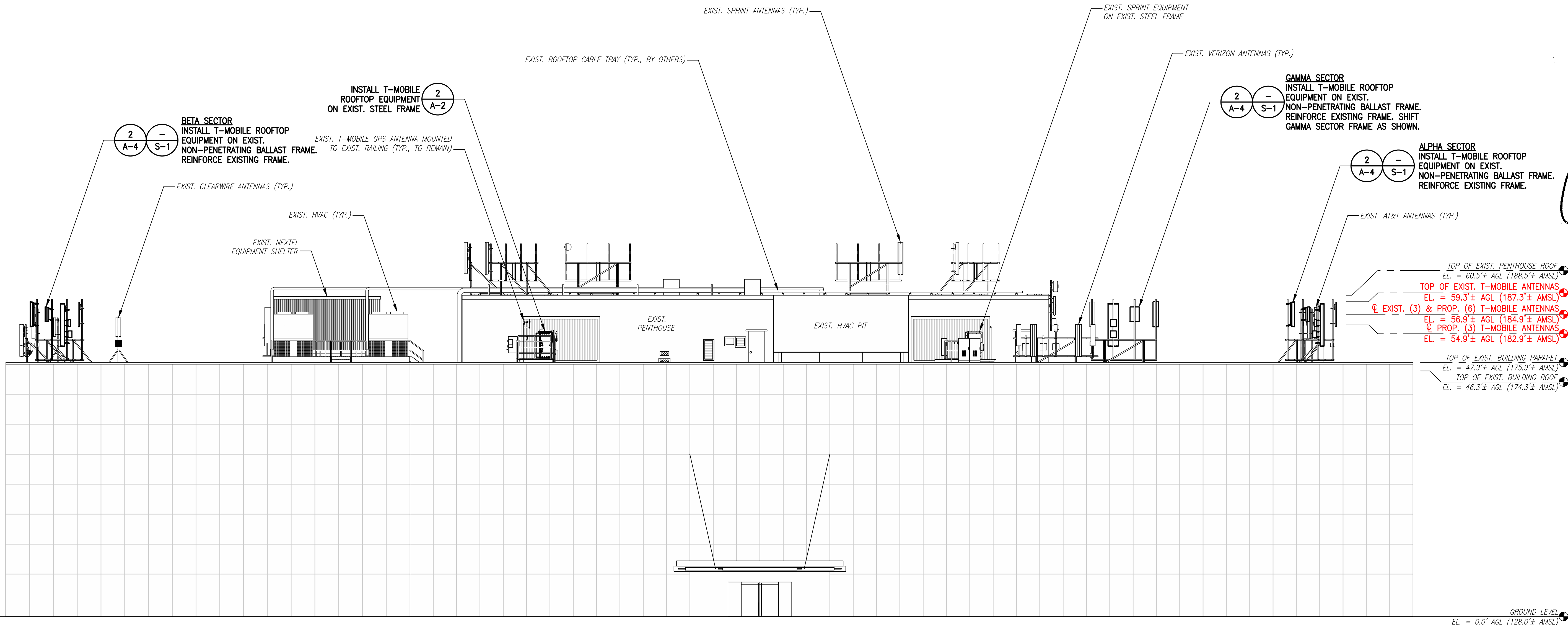
SHEET NUMBER  
**A-2**

**SUPPLEMENTAL GENERAL CONDITIONS WORK NOTE (BUILDING PROTECTION AND RF EME SAFETY SIGNAGE):**

- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE AND PARAPET WALL DURING CONSTRUCTION. PROPER ROOF PROTECTING MATERIALS SHALL BE PLACED AROUND ALL WORKING AREAS AND NO TOOLS, LADDERS, MATERIALS, OR EQUIPMENT SHALL BE PLACED DIRECTLY ON THE ROOF SURFACE. ANY DAMAGES TO ROOF SURFACE AND/OR PARAPET WALL DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION.
- GENERAL CONTRACTOR SHALL USE BUILDING OWNER'S ROOFING CONTRACTOR FOR ALL ROOF PENETRATIONS.
- GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE THE INSTALLATION OF T-MOBILE RF SAFETY SIGNAGE AND OTHER RF SAFETY IMPROVEMENTS AS SHOWN ON SUPPLEMENTAL PLANS (BY OTHERS) WHICH SHALL BE SLIP-SHEETED BY SBA COMMUNICATIONS INTO THE FINAL CONSTRUCTION DRAWINGS. CHAPPELL ENGINEERING ASSOCIATES, LLC, IS NOT RESPONSIBLE FOR THE DESIGN OF ANY RF SAFETY IMPROVEMENTS.

**RAD CENTER NOTE:**  
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

**GENERAL CONTRACTOR NOTE:**  
GENERAL CONTRACTOR SHALL REFER TO MOUNT STRUCTURAL ANALYSIS AND ANY MOUNT MODIFICATION DESIGN PROVIDED BY SBA



**BETA SECTOR**  
INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. NON-PENETRATING BALLAST FRAME. REINFORCE EXISTING FRAME.

**GAMMA SECTOR**  
INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. NON-PENETRATING BALLAST FRAME. REINFORCE EXISTING FRAME. SHIFT GAMMA SECTOR FRAME AS SHOWN.

**ALPHA SECTOR**  
INSTALL T-MOBILE ROOFTOP EQUIPMENT ON EXIST. NON-PENETRATING BALLAST FRAME. REINFORCE EXISTING FRAME.

TOP OF EXIST. PENTHOUSE ROOF  
EL. = 60.5'± AGL (188.5'± AMSL)

TOP OF EXIST. T-MOBILE ANTENNAS  
EL. = 59.3'± AGL (187.3'± AMSL)

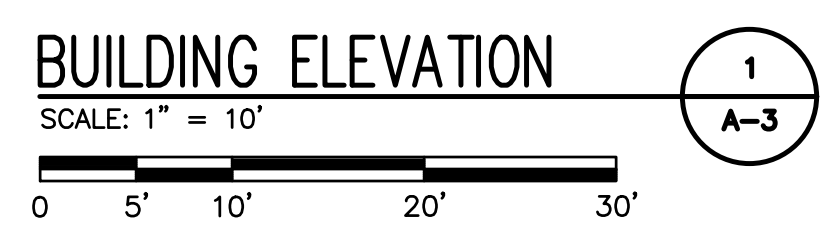
EXIST. (3) & PROP. (6) T-MOBILE ANTENNAS  
EL. = 56.9'± AGL (184.9'± AMSL)

PROP. (3) T-MOBILE ANTENNAS  
EL. = 54.9'± AGL (182.9'± AMSL)

TOP OF EXIST. BUILDING PARAPET  
EL. = 47.9'± AGL (175.9'± AMSL)

TOP OF EXIST. BUILDING ROOF  
EL. = 46.3'± AGL (174.3'± AMSL)

GROUND LEVEL  
EL. = 0.0' AGL (128.0'± AMSL)

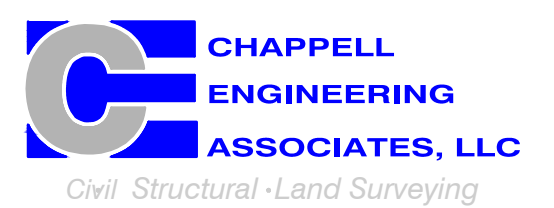


**T-MOBILE  
NORTHEAST LLC**

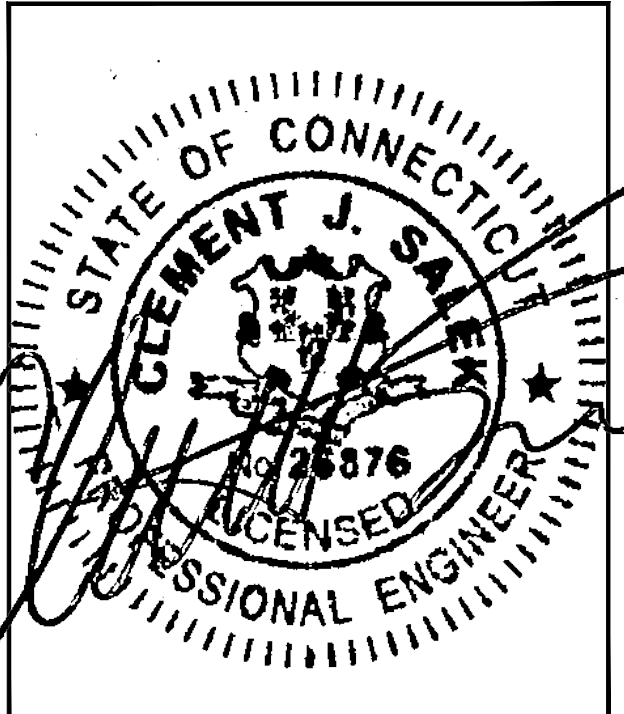
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SHEET TITLE  
**BUILDING ELEVATION**

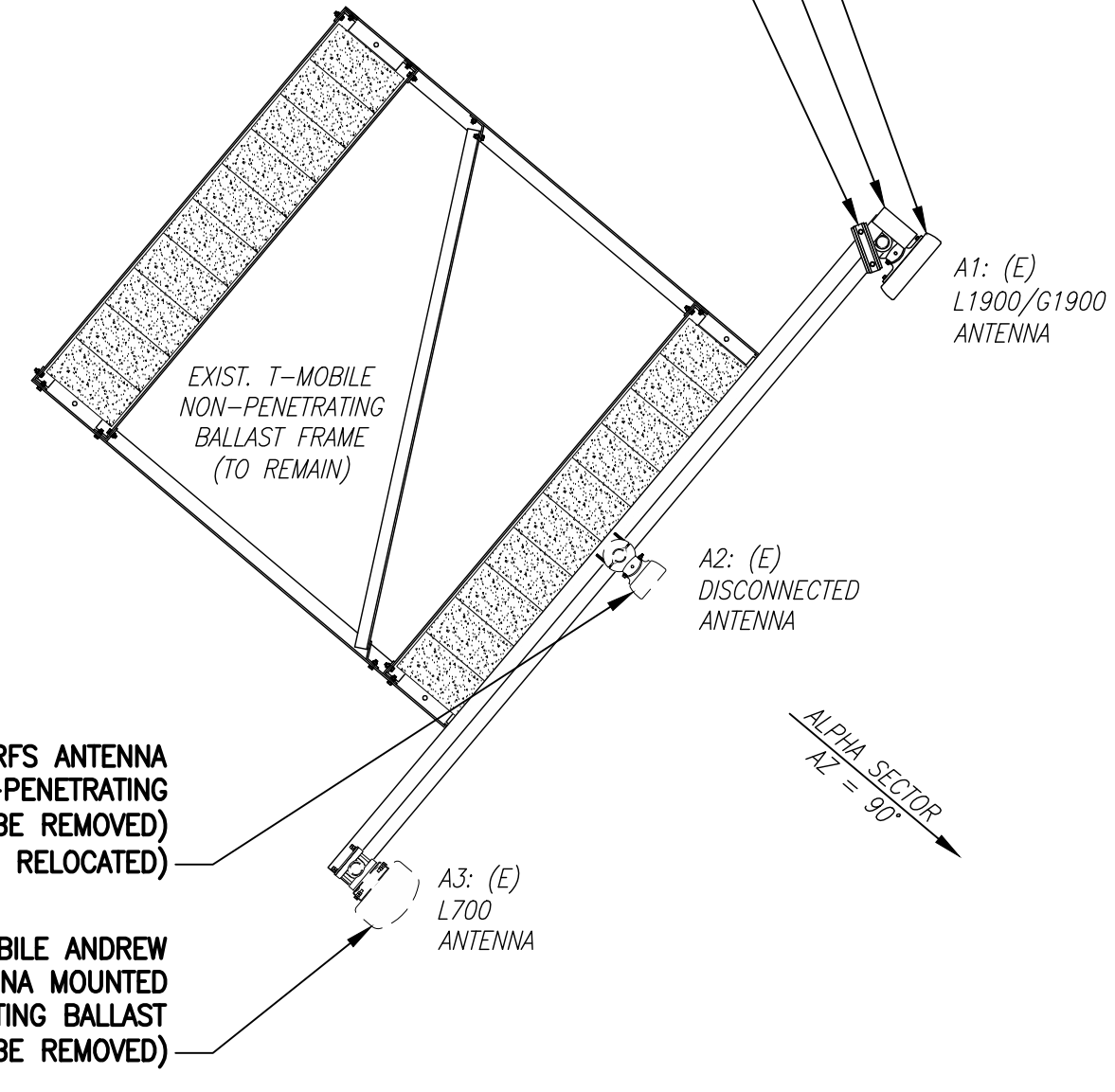
SHEET NUMBER  
**A-3**



EXIST. T-MOBILE RFS APX16DW-16DW-S-E-A20 PANEL ANTENNA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME (TO REMAIN)

EXIST. T-MOBILE GENERIC TWIN STYLE 1A PCS TMA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME BELOW EXIST. RFS ANTENNA (TO REMAIN)

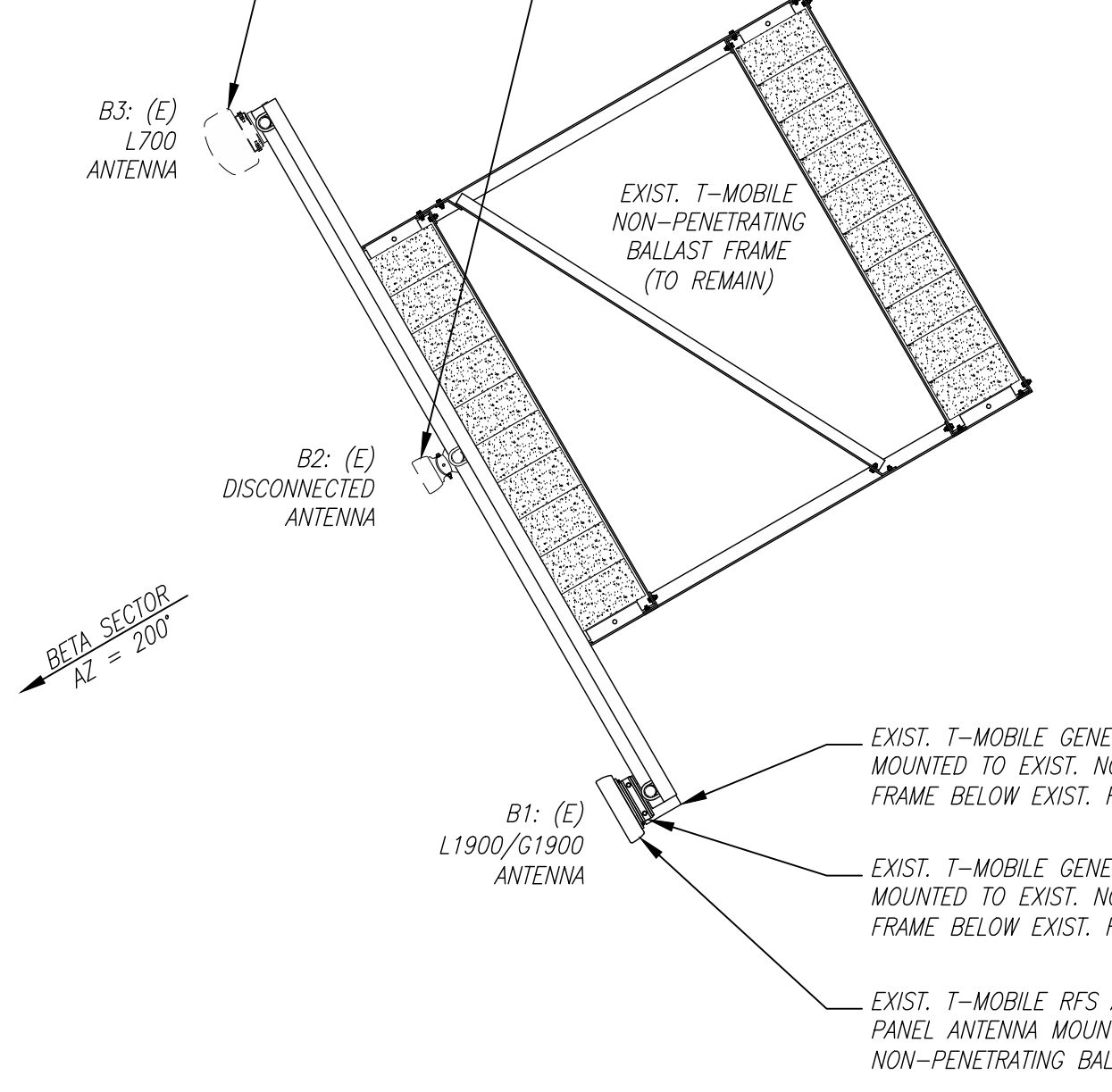
EXIST. T-MOBILE GENERIC TWIN STYLE 1B AWS TMA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME BELOW EXIST. RFS ANTENNA (TO REMAIN)



ALPHA SECTOR

EXIST. T-MOBILE ANDREW LNX-6515DS-A1M ANTENNA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME (TO BE REMOVED)

EXIST. T-MOBILE RFS ANTENNA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME (TO BE REMOVED) (EXIST. PIPE TO BE RELOCATED)

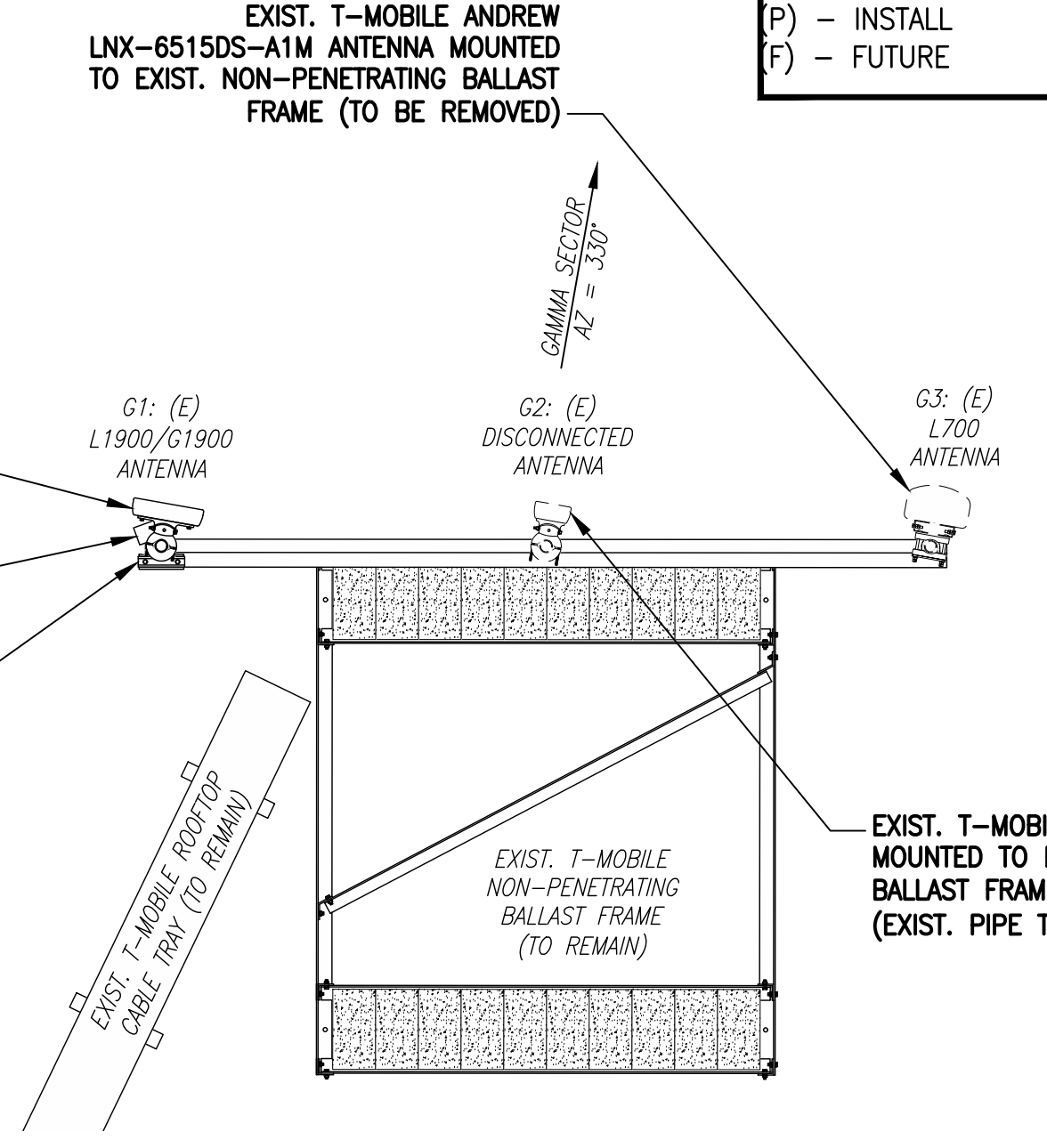


BETA SECTOR

EXIST. T-MOBILE RFS APX16DW-16DW-S-E-A20 PANEL ANTENNA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME (TO REMAIN)

EXIST. T-MOBILE GENERIC TWIN STYLE 1A PCS TMA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME BELOW EXIST. RFS ANTENNA (TO REMAIN)

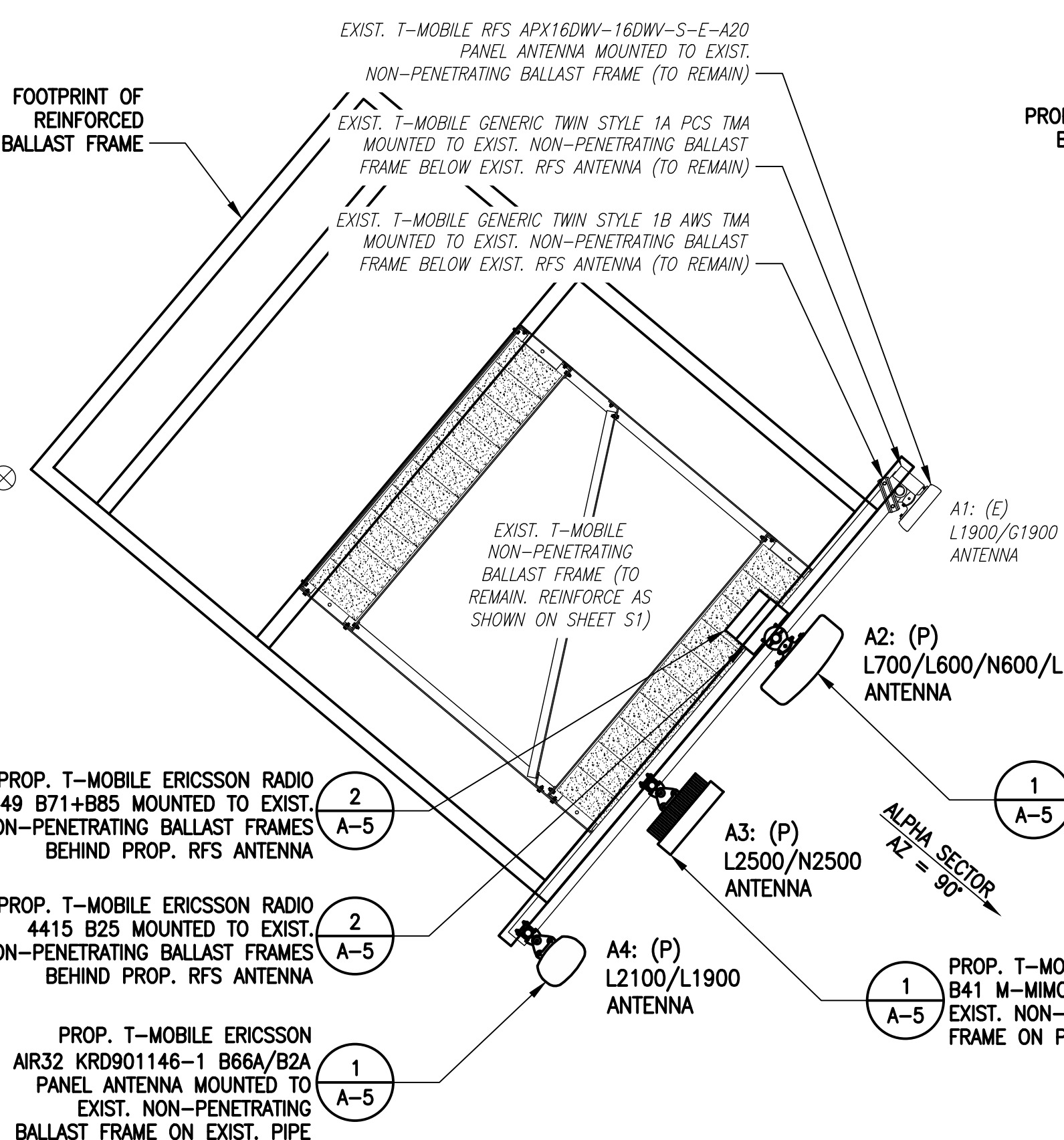
EXIST. T-MOBILE GENERIC TWIN STYLE 1B AWS TMA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME BELOW EXIST. RFS ANTENNA (TO REMAIN)



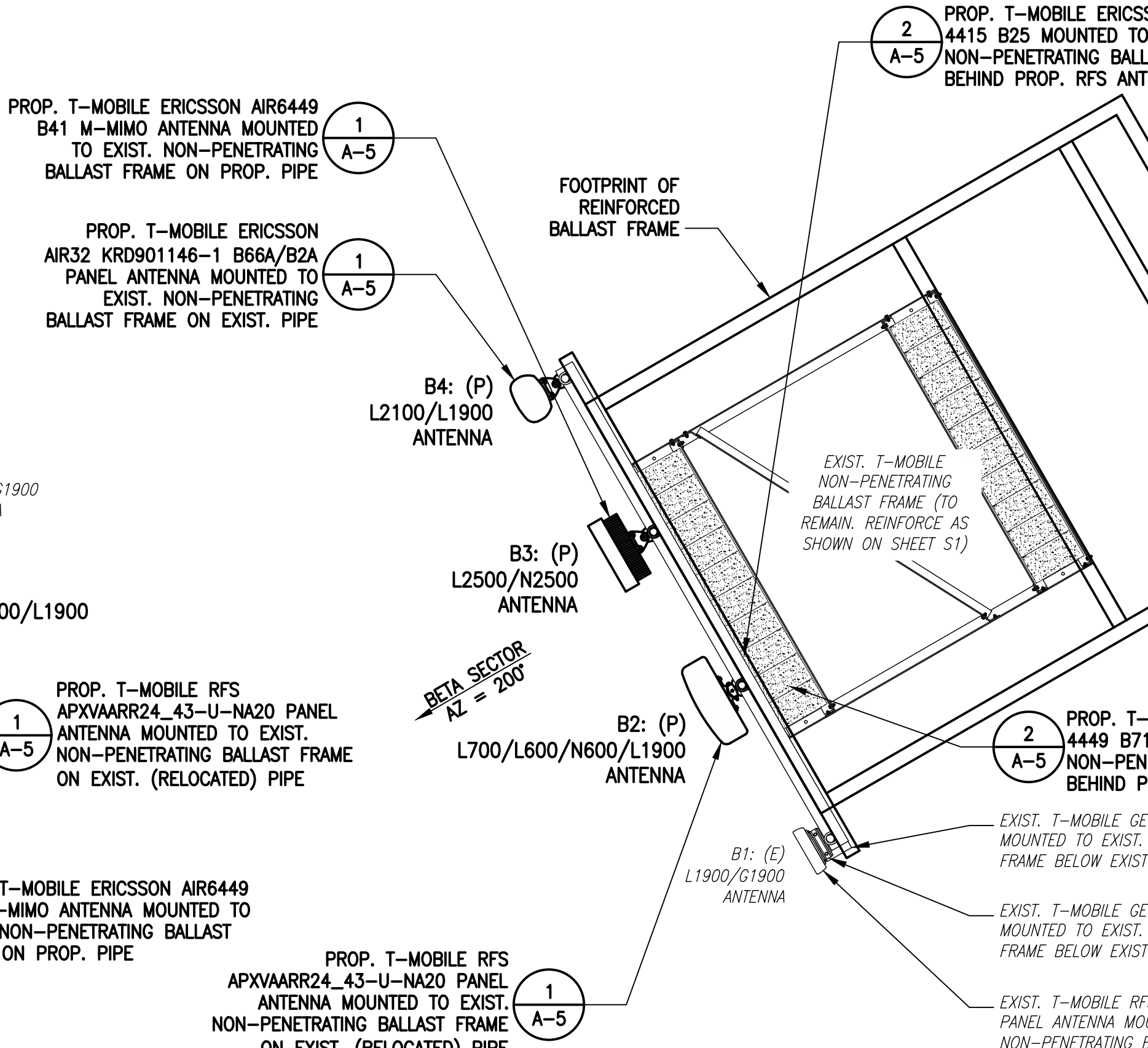
GAMMA SECTOR

ANTENNA STATUS LEGEND:  
 EMPTY - EMPTY PIPE  
 (E) - EXISTING  
 (P) - INSTALL  
 (F) - FUTURE

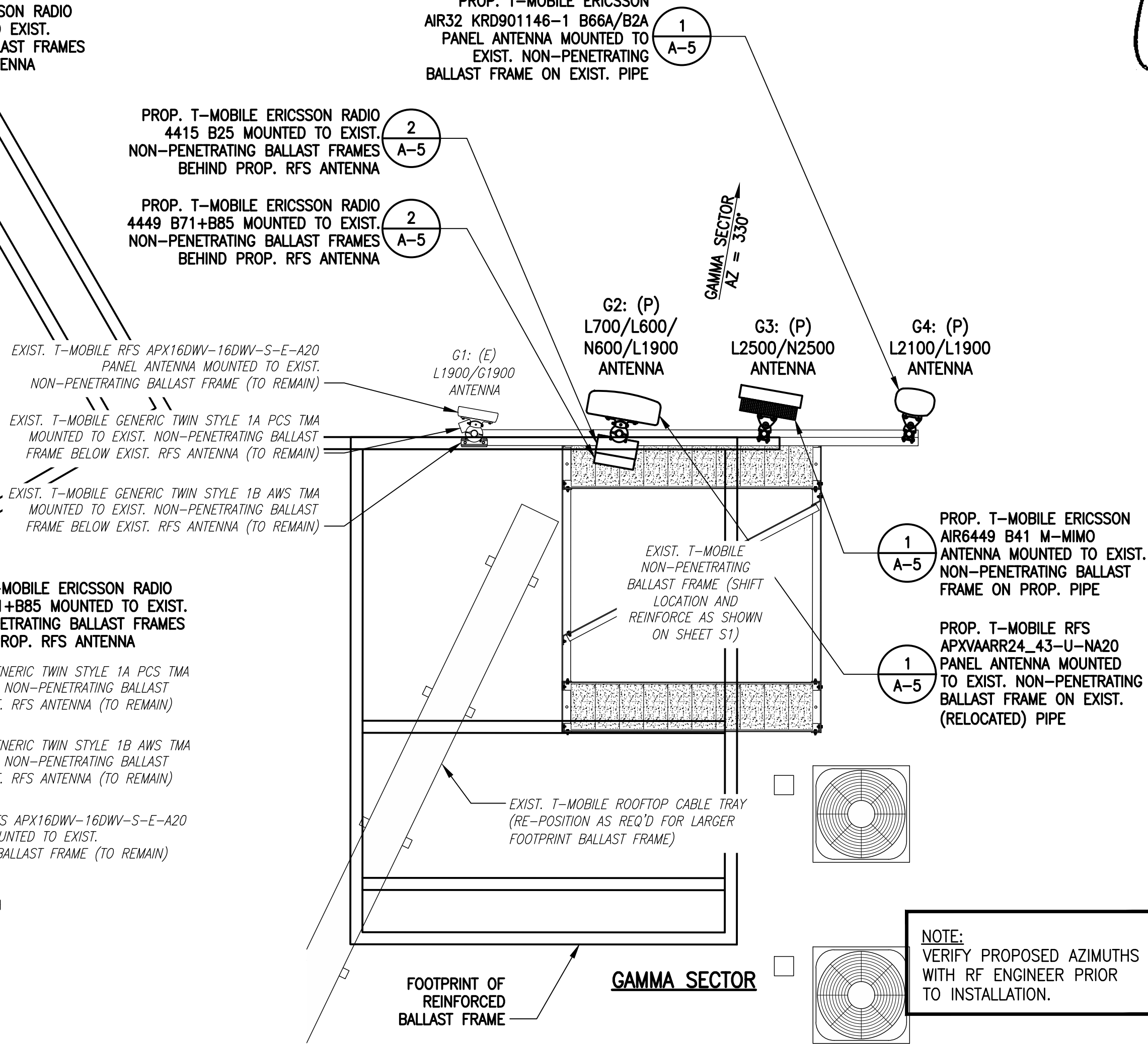
EXIST. ANTENNA PLAN  
 SCALE: 3/8" = 1'-0"



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR

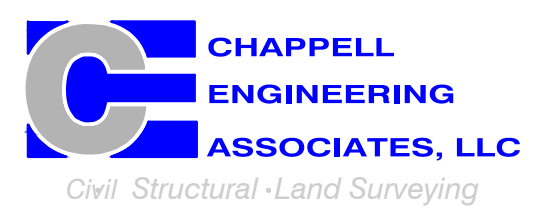
PROP. ANTENNA PLAN  
 SCALE: 3/8" = 1'-0"

STRUCTURAL ANALYSIS NOTE:  
 REFER TO STRUCTURAL ANALYSIS FOR REQUIRED RECONFIGURATION OF THE EXISTING CONCRETE BALLAST.

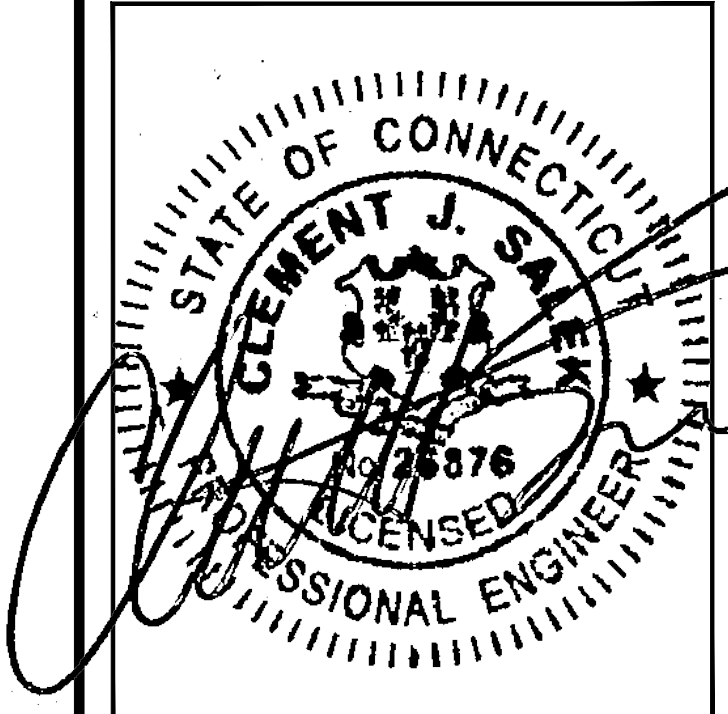
T-MOBILE  
 NORTHEAST LLC  
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SHEET TITLE  
 ANTENNA PLANS

SHEET NUMBER  
**A-4**

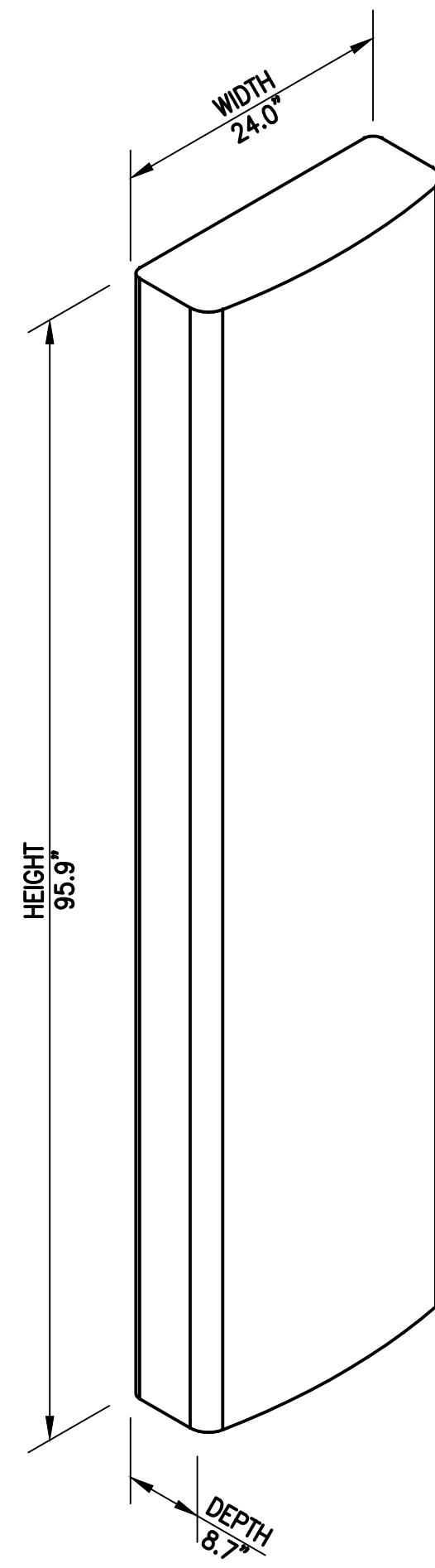


FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	RFS APX16DWV-16DWV-S-E-A20	56.9'± AGL	90°	0°	0°	G1900	GENERIC TWIN STYLE 1A PCS TMA	(12) 1-5/8" COAX CABLES (3) 1-5/8" HCS FIBER CABLES (3) 1-5/8" HCS CABLES
	RFS APXVAARR24_43-U-NA20	54.9'± AGL	90°	0°	0°	L700/L600/N600	RADIO 4449 B71+B85	
	ERICSSON M-MIMO AIR6449 B41	56.9'± AGL	90°	0°	0°	L2500/N2500	-	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	59.9'± AGL	90°	0°	0°	L2100	-	
BETA	RFS APX16DWV-16DWV-S-E-A20	56.9'± AGL	200°	0°	0°	G1900	GENERIC TWIN STYLE 1A PCS TMA	
	RFS APXVAARR24_43-U-NA20	54.9'± AGL	200°	0°	0°	L700/L600/N600	RADIO 4449 B71+B85	
	ERICSSON M-MIMO AIR6449 B41	56.9'± AGL	200°	0°	0°	L2500/N2500	-	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	59.9'± AGL	200°	0°	0°	L2100	-	
GAMMA	RFS APX16DWV-16DWV-S-E-A20	56.9'± AGL	330°	0°	0°	G1900	GENERIC TWIN STYLE 1A PCS TMA	
	RFS APXVAARR24_43-U-NA20	54.9'± AGL	330°	0°	0°	L700/L600/N600	RADIO 4449 B71+B85	
	ERICSSON M-MIMO AIR6449 B41	56.9'± AGL	330°	0°	0°	L2500/N2500	-	
	ERICSSON AIR32 KRD901146-1 B66A/B2A	59.9'± AGL	330°	0°	0°	L2100	-	

CABLE NOTE: EXISTING (6) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B ON SHEET A-1.

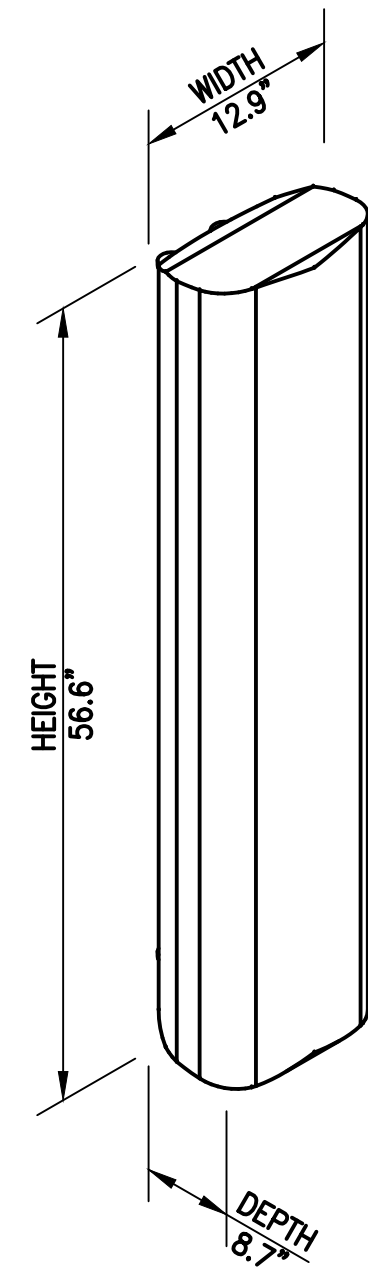
NOTE: RFDS REV5 - 05/12/20



RFS APXVAARR24\_43-NA20 PANEL ANTENNA  
DIMENSIONS: 95.9"H x 24.0"W x 8.7"D  
WEIGHT: 128.0 LBS  
1 PER SECTOR, TOTAL OF 3



ERICSSON M-MIMO AIR6449 B41 PANEL ANTENNA  
DIMENSIONS: 33.1"H x 20.5"W x 8.3"D  
WEIGHT: 103.0 LBS  
1 PER SECTOR, TOTAL OF 3



ERICSSON AIR32 KRD901146-1 B66A/B2A ANTENNA  
DIMENSIONS: 56.6"H x 12.9"W x 8.7"D  
WEIGHT: 132.2 LBS  
1 PER SECTOR, TOTAL OF 3



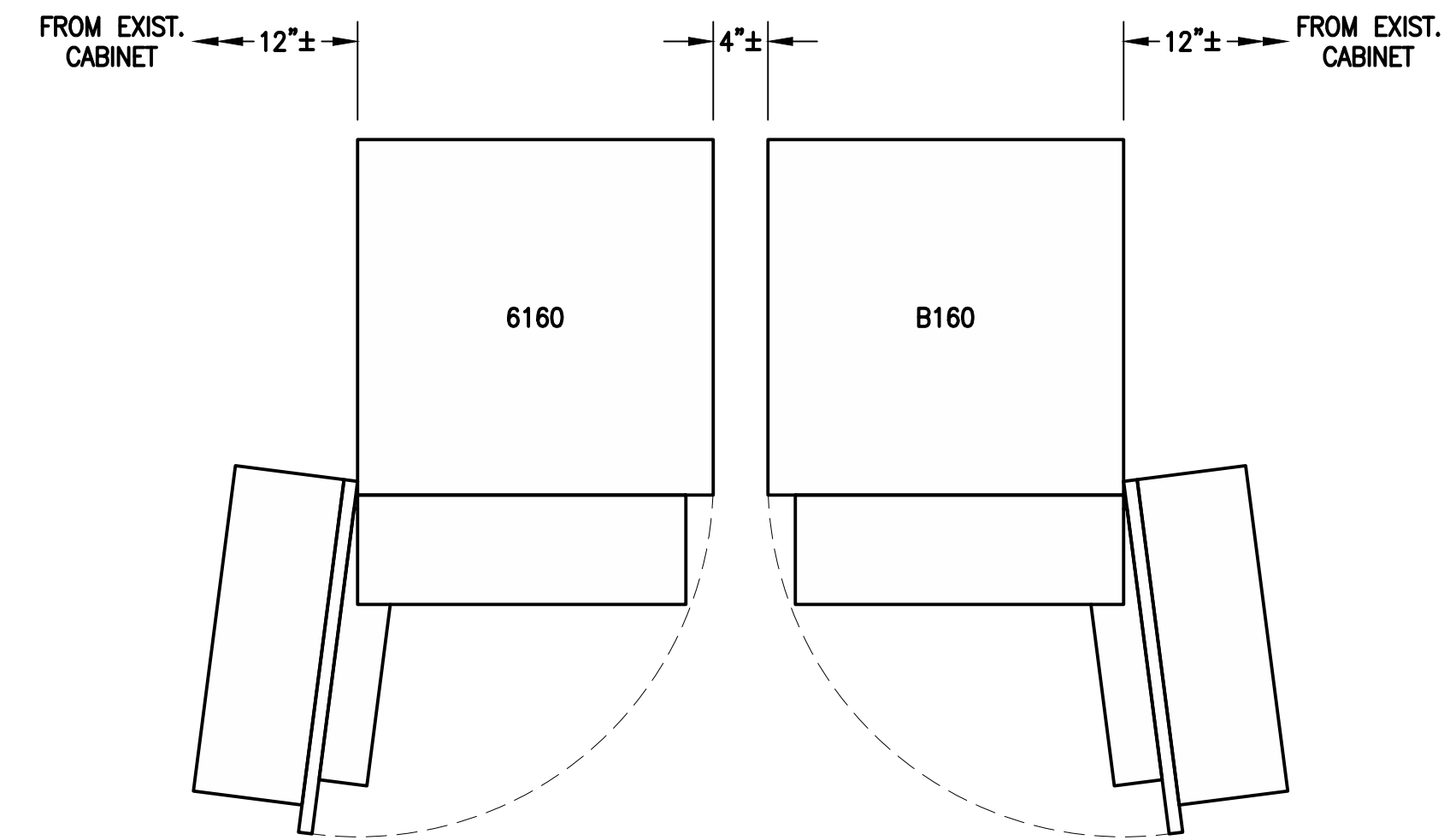
ERICSSON RADIO 4449 B71+B85  
DIMENSIONS: 14.9"H x 13.2"W x 9.3"D  
WEIGHT: 74.0 LBS  
1 PER SECTOR, TOTAL OF 3



ERICSSON RRUS 4415 B25  
DIMENSIONS: 16.5"H x 13.4"W x 5.9"D  
WEIGHT: 46 LBS  
1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS 1 A-5  
SCALE: N.T.S.

RRUS DETAIL 2 A-5  
SCALE: N.T.S.



ERICSSON 6160 SITE SUPPORT CABINET  
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D  
TOTAL OF 1

ERICSSON B160 BATTERY CABINET  
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D  
TOTAL OF 1

EQUIPMENT DETAIL 3 A-5  
SCALE: N.T.S.

PROP. 2-1/2" SCH. 40 PIPE, 138" LONG

PROP. T-MOBILE ERICSSON AIR6449 B41 M-MIMO ANTENNA MOUNTED TO EXIST. NON-PENETRATING BALLAST FRAME ON PROP. PIPE (MOUNT PER MANUFACTURER'S SPECIFICATIONS.)

NOTE: PROPOSED RFS ANTENNA, AIR32 ANTENNA, AND RADIO UNITS NOT SHOWN, FOR CLARITY. INSTALL TO EXISTING PIPE MASTS PER MANUFACTURER'S SPECIFICATIONS.

INSTALL PIPE TO NON-PENETRATING BALLAST FRAME WITH 1/2" U-BOLTS (TOTAL OF 2)

STRUCTURAL ANALYSIS NOTE: REFER TO SHEET S-1 & STRUCTURAL ANALYSIS FOR REINFORCEMENT OF EXISTING BALLAST FRAME.

EXIST. T-MOBILE NON-PENETRATING BALLAST FRAME

EXIST./PROP. CONCRETE BALLAST

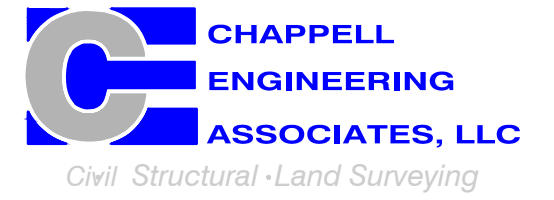
ANTENNA MOUNTING DETAIL 4 A-5  
SCALE: N.T.S.

T-MOBILE NORTHEAST LLC

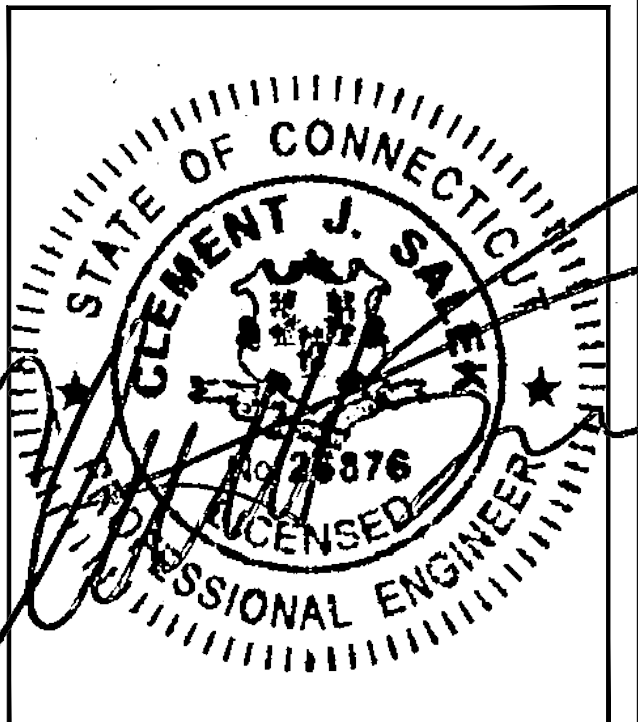
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700



SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	06/17/20	ISSUED FOR REVIEW	CMC

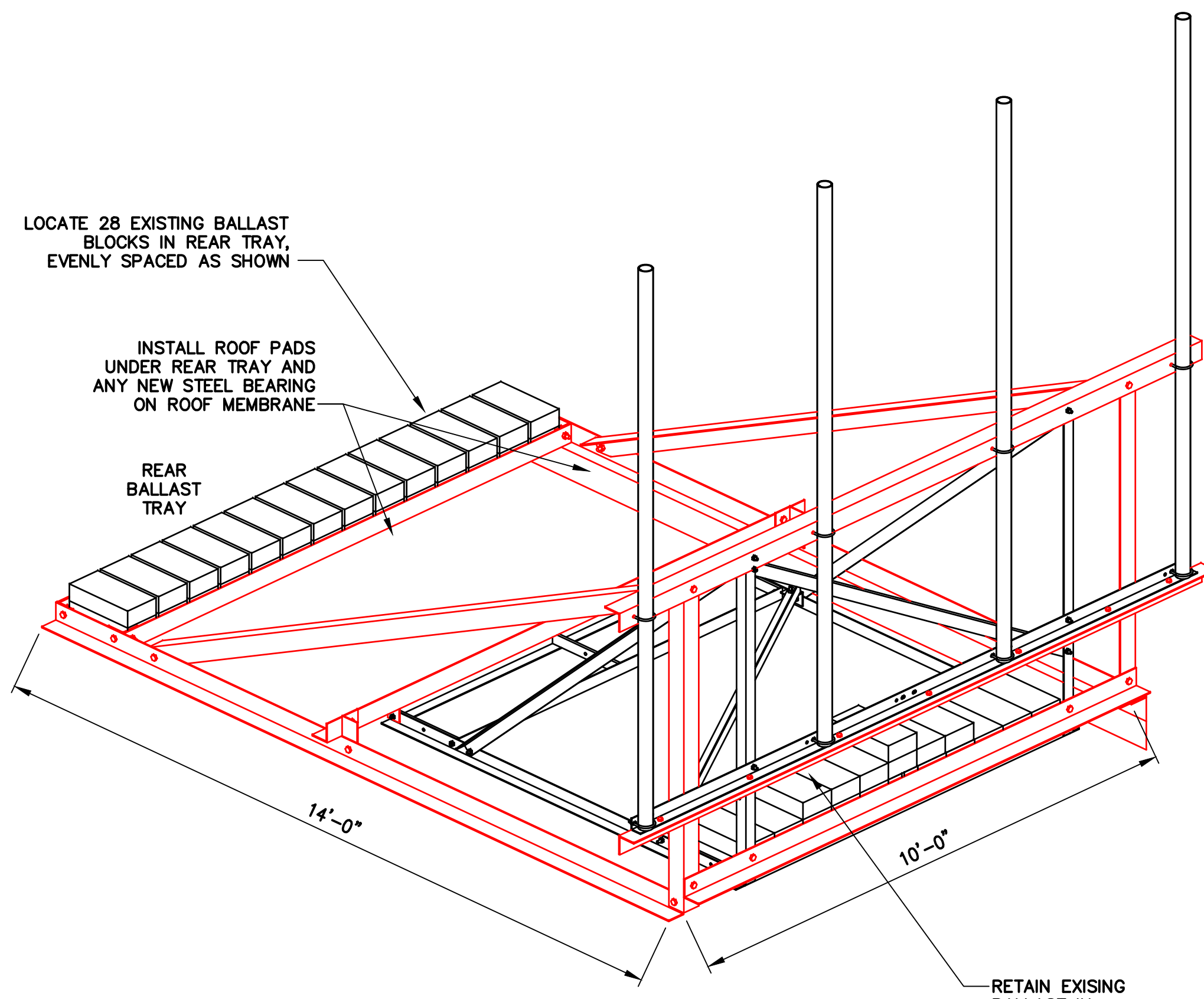
SITE NUMBER:  
**CT11090A**

SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

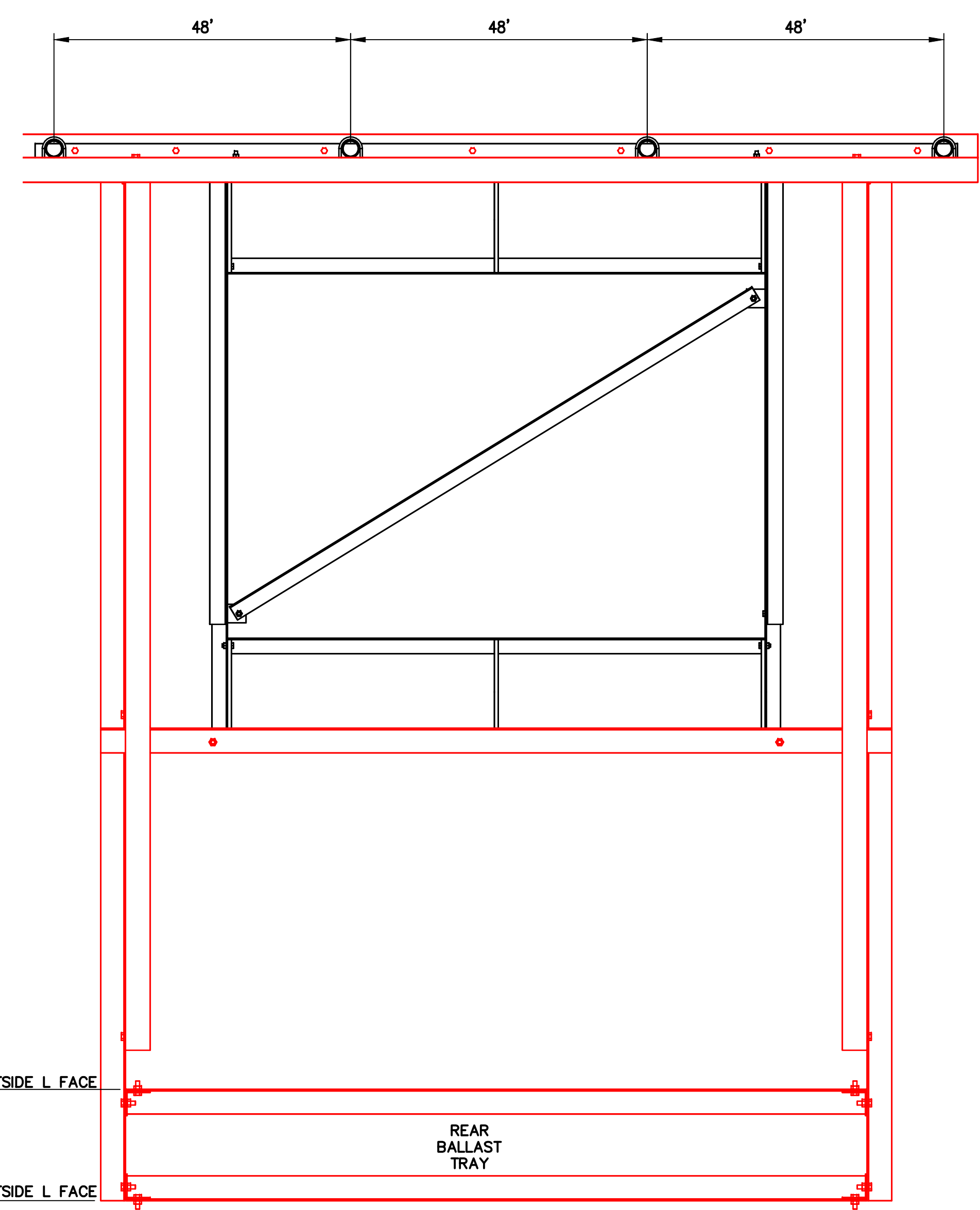
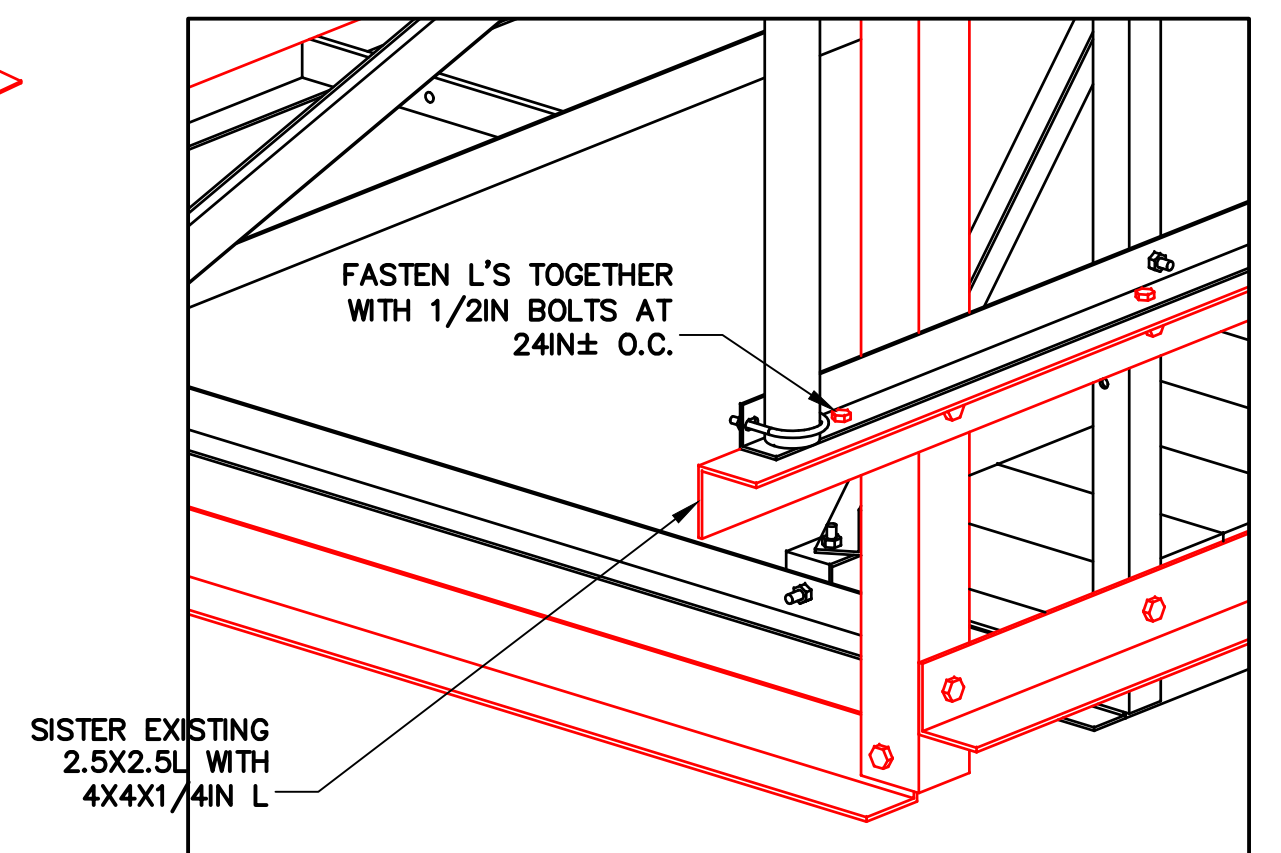
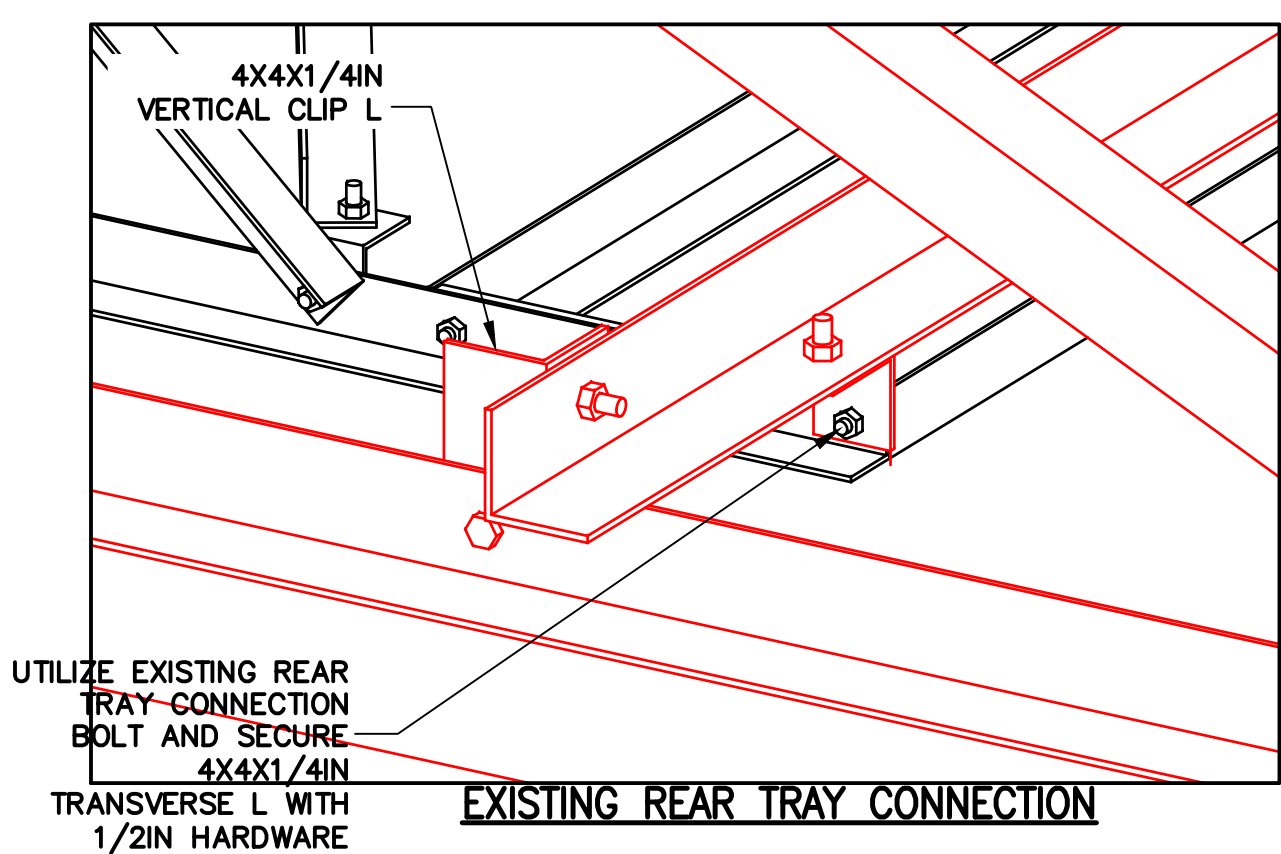
SHEET TITLE  
**SITE DETAILS**

SHEET NUMBER  
**A-5**

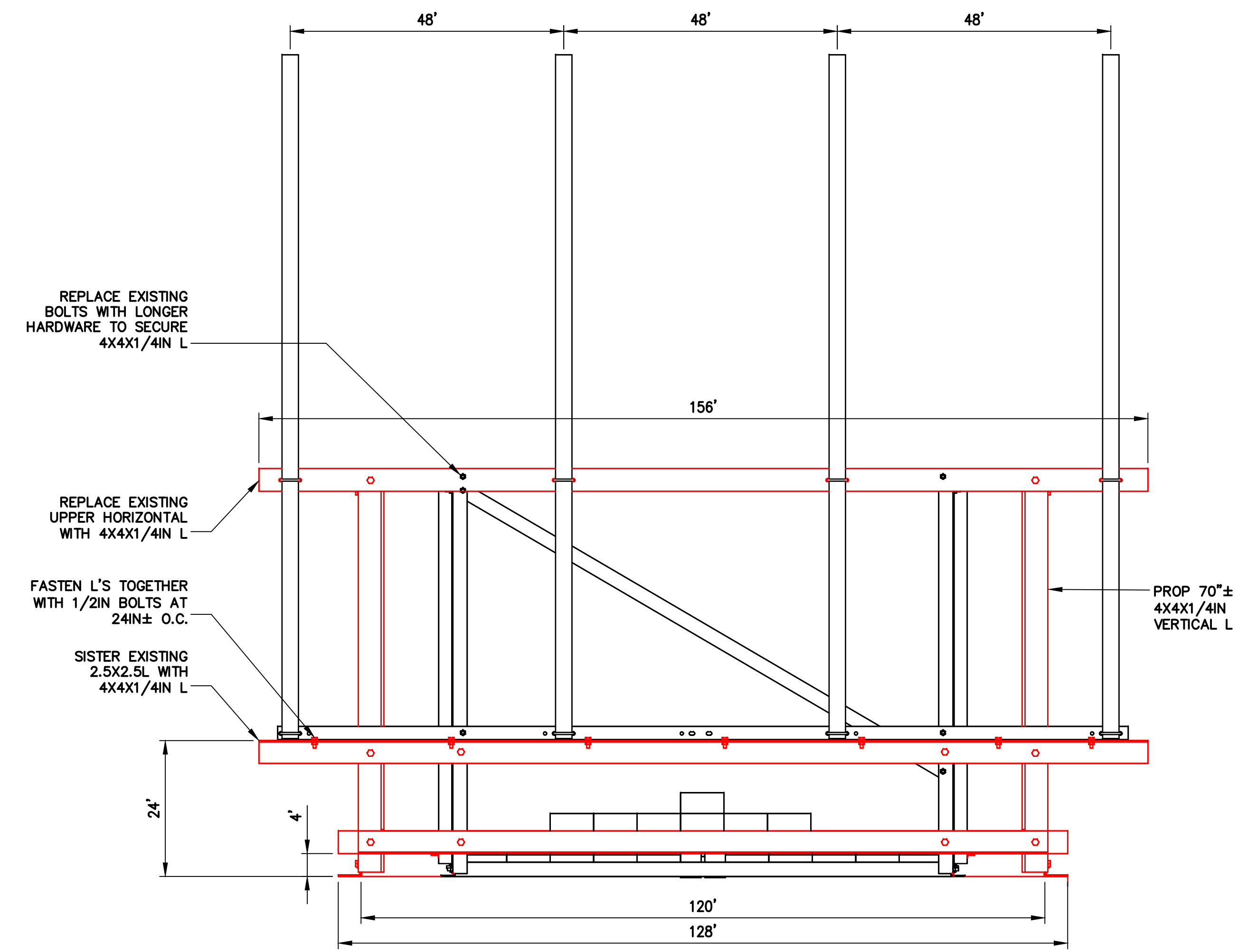




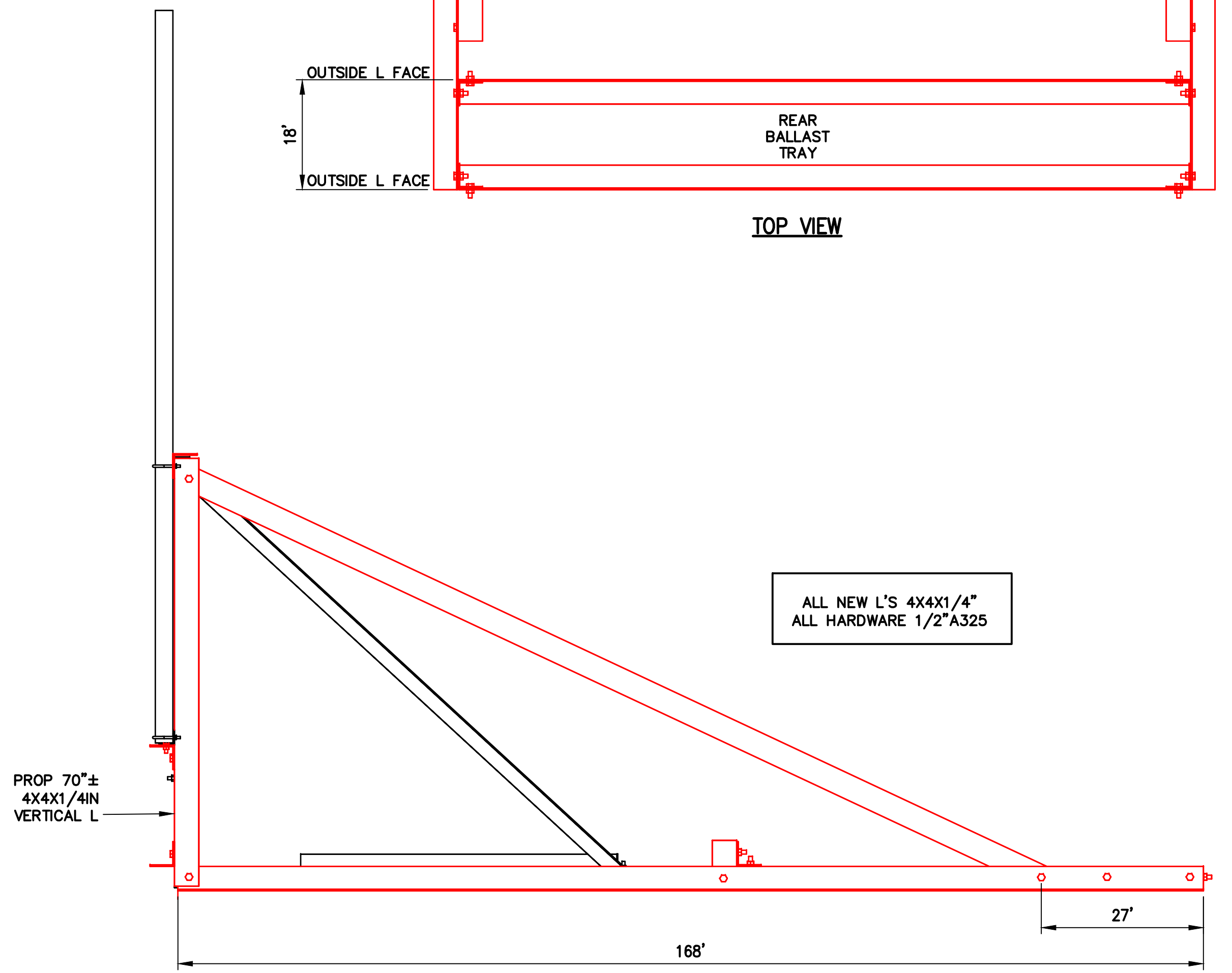
REINFORCED BALLAST FRAME - ISOMETRIC VIEW



TOP VIEW



FRONT VIEW



SIDE VIEW

PROP. BALLAST ANTENNA FRAMES 1  
S-1

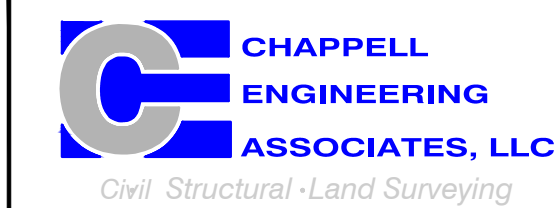
SCALE: 3/8" = 1'-0"

T-MOBILE  
NORTHEAST LLC

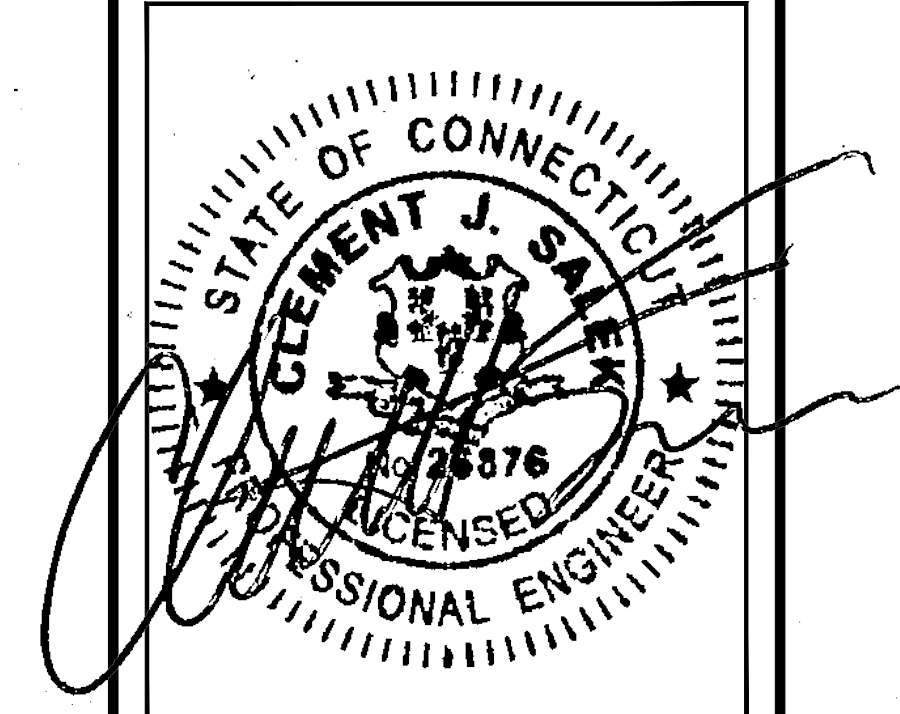
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700



SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720



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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**

SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
**BALLAST MOUNT  
REINFORCING DETAILS  
(TYP 3 SECTORS)**

SHEET NUMBER  
**S-1**

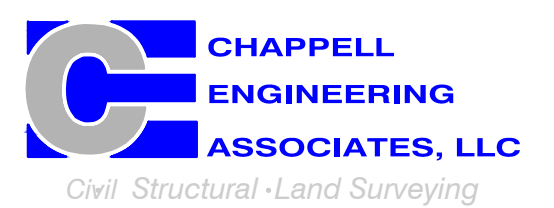


# T-MOBILE NORTHEAST LLC

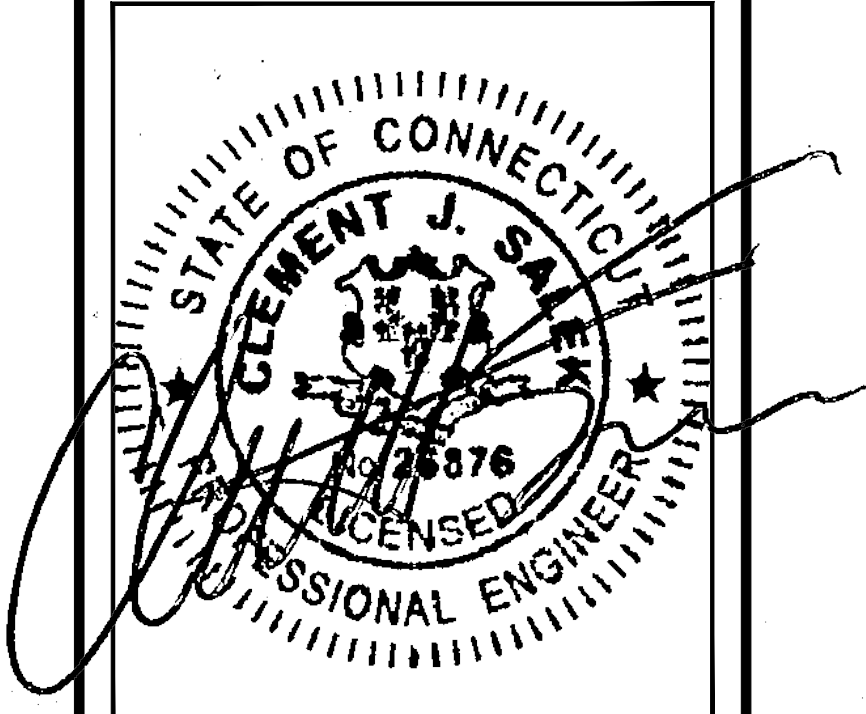
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
(508) 286-2700



SBA COMMUNICATIONS CORP.  
134 FLANDERS ROAD, SUITE 125  
WESTBOROUGH, MA 01581  
(508) 251-0720



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



CHECKED BY: JMT

APPROVED BY: JMT

### SUBMITTALS

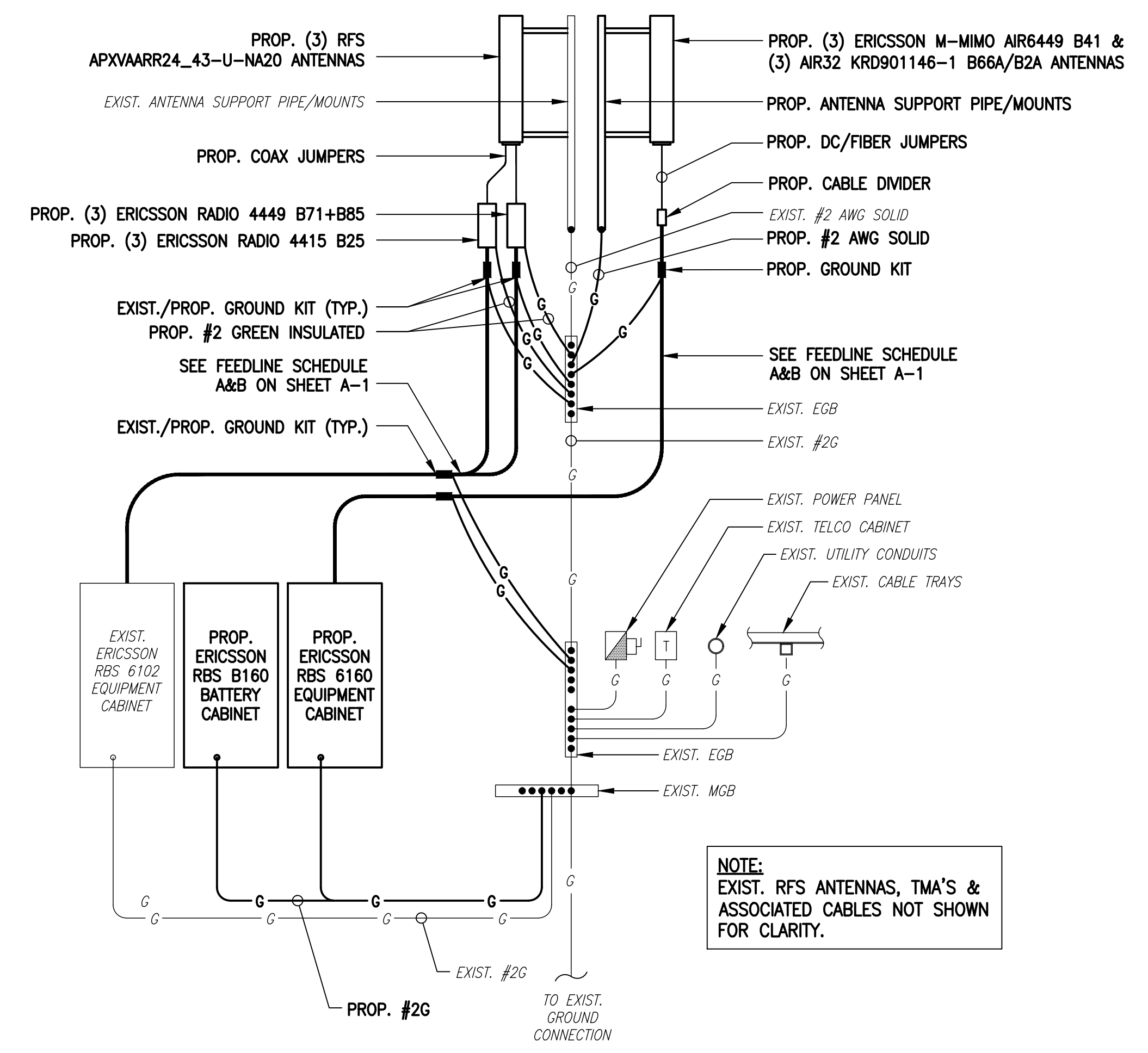
REV.	DATE	DESCRIPTION	BY
0	06/17/20	ISSUED FOR REVIEW	CMC

SITE NUMBER:  
**CT11090A**

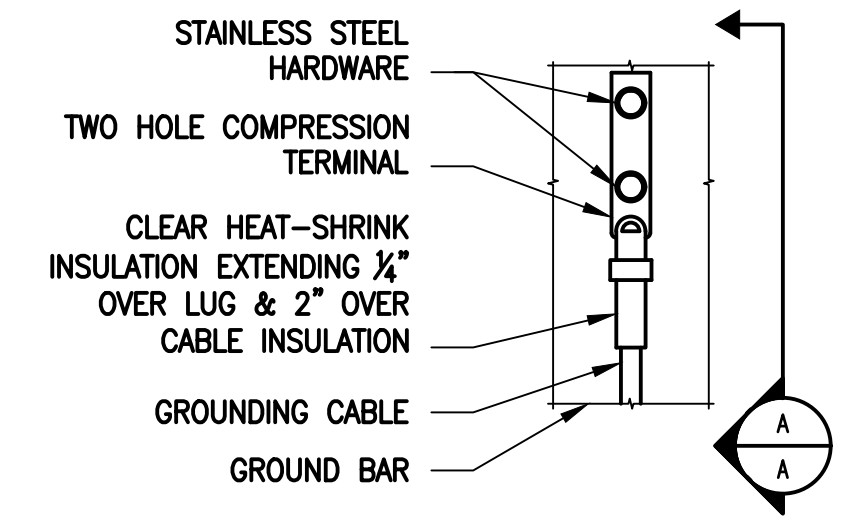
SITE ADDRESS:  
411 WEST PUTNAM AVENUE  
GREENWICH, CT 06830

SHEET TITLE  
**ELECTRIC & GROUNDING  
DETAILS**

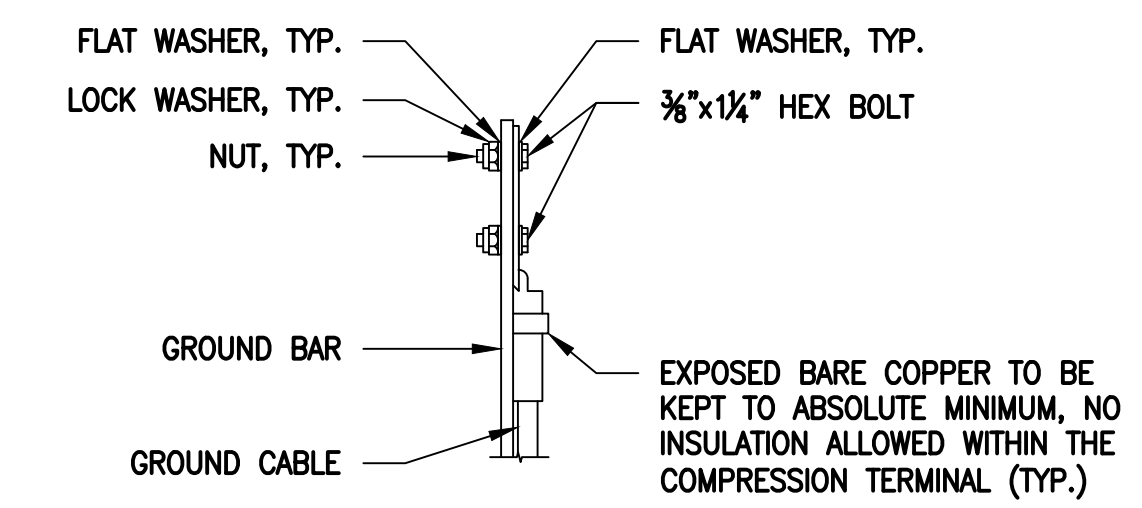
SHEET NUMBER  
**E-1**



**GROUNDING RISER DIAGRAM**  
SCALE: NOT TO SCALE



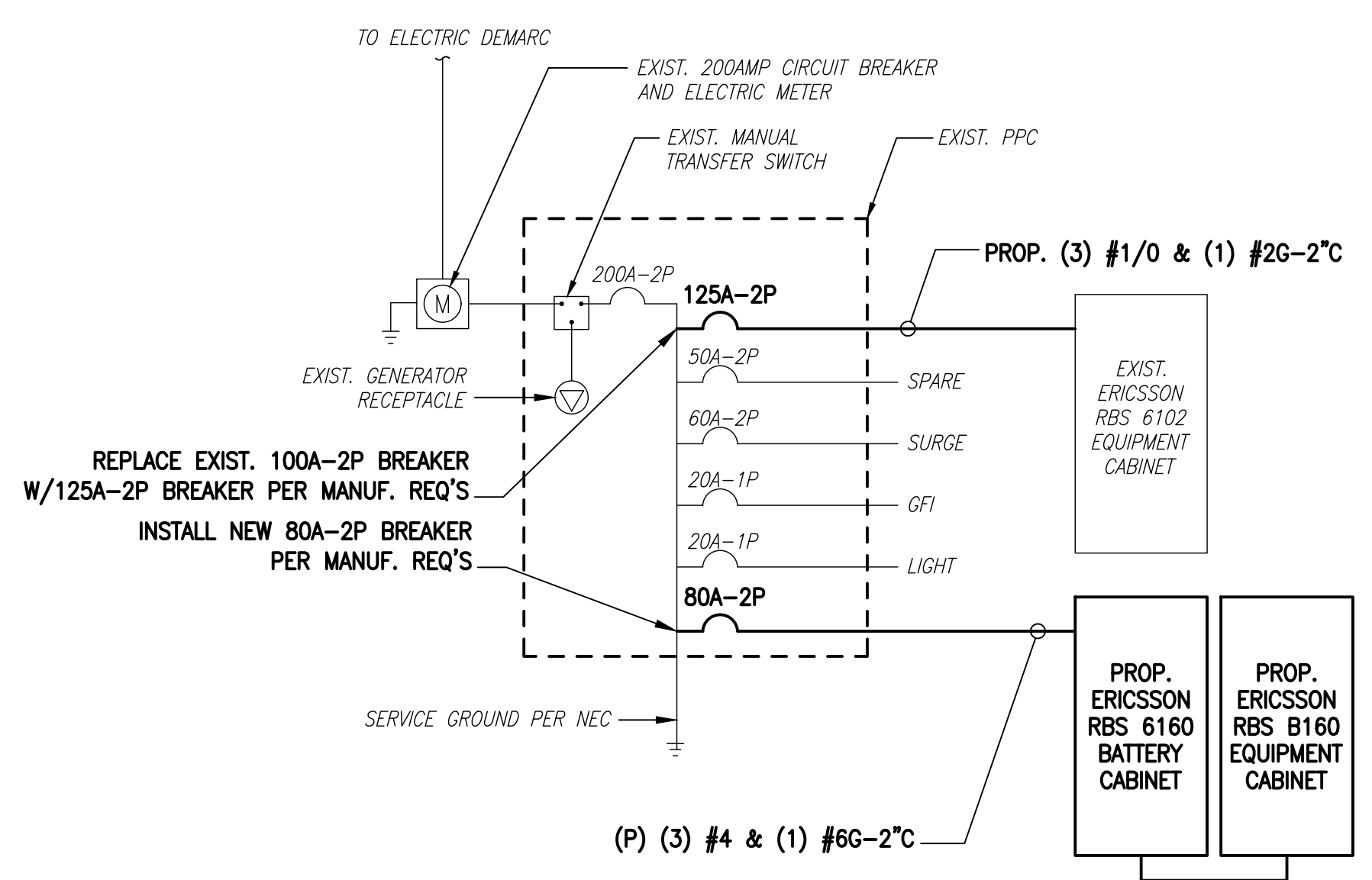
**ELEVATION**



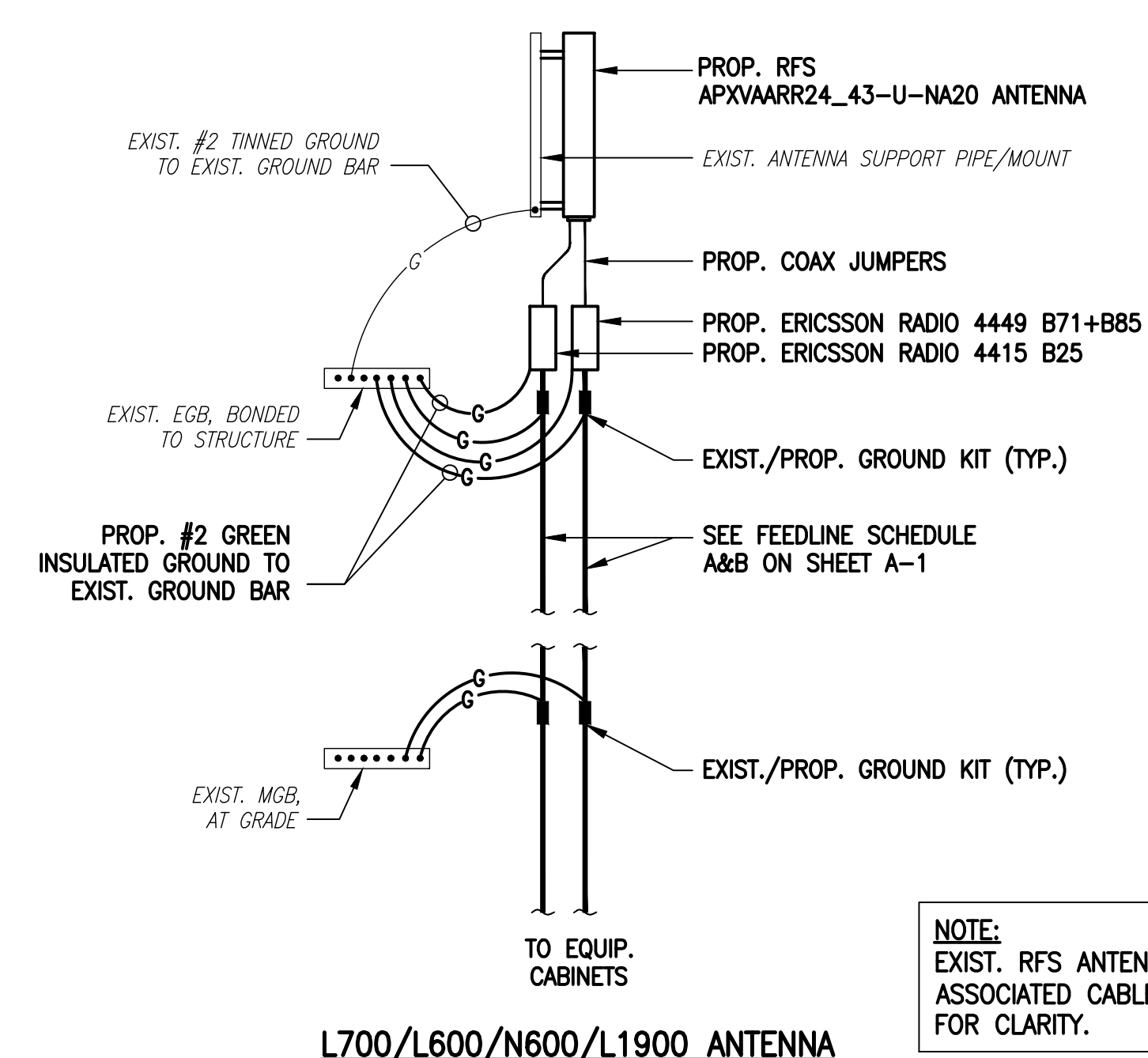
**SECTION A-A**

- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
  - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
  - CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

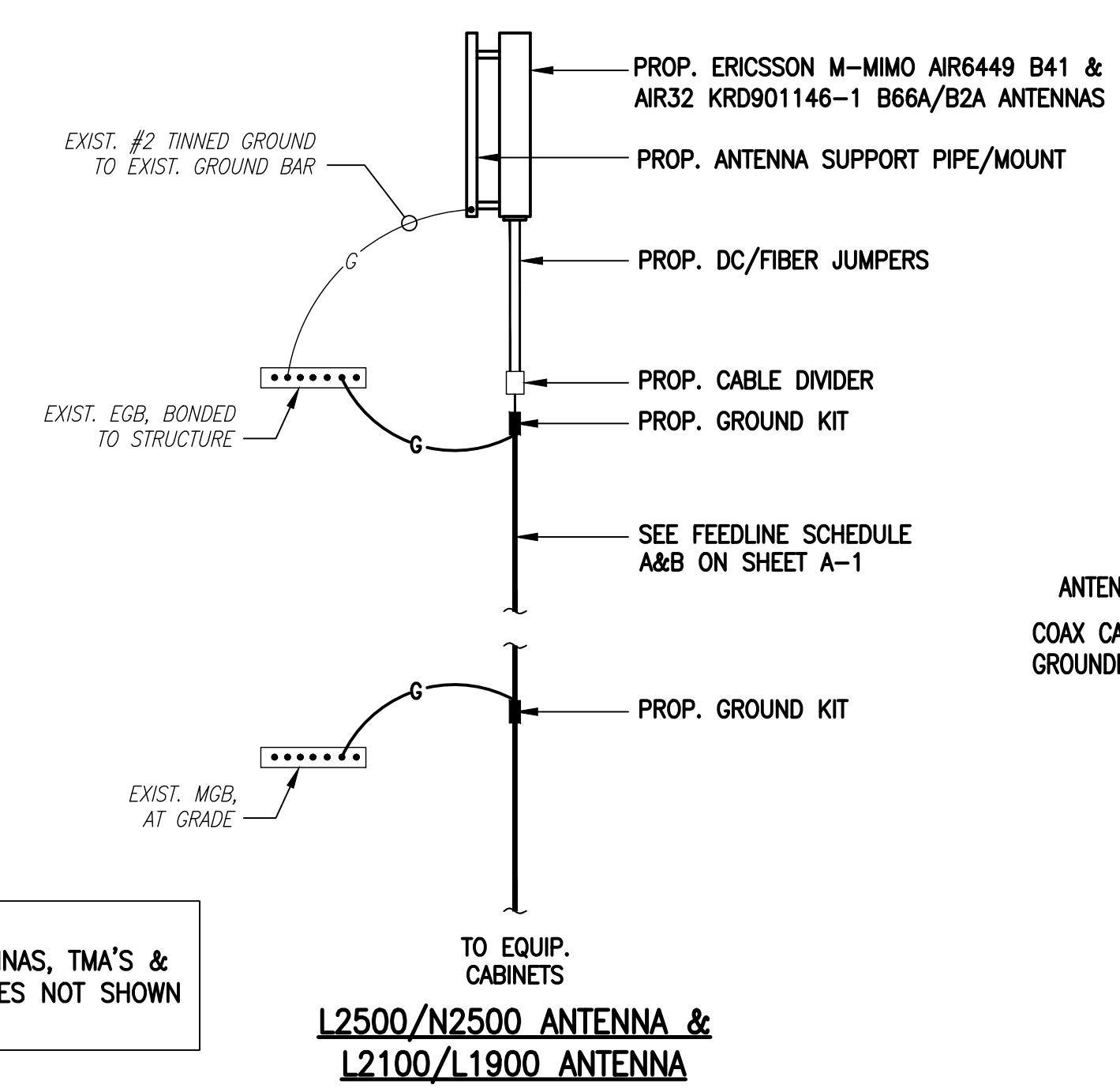
**TYPICAL GROUND BAR CONNECTIONS DETAIL**  
SCALE: NOT TO SCALE



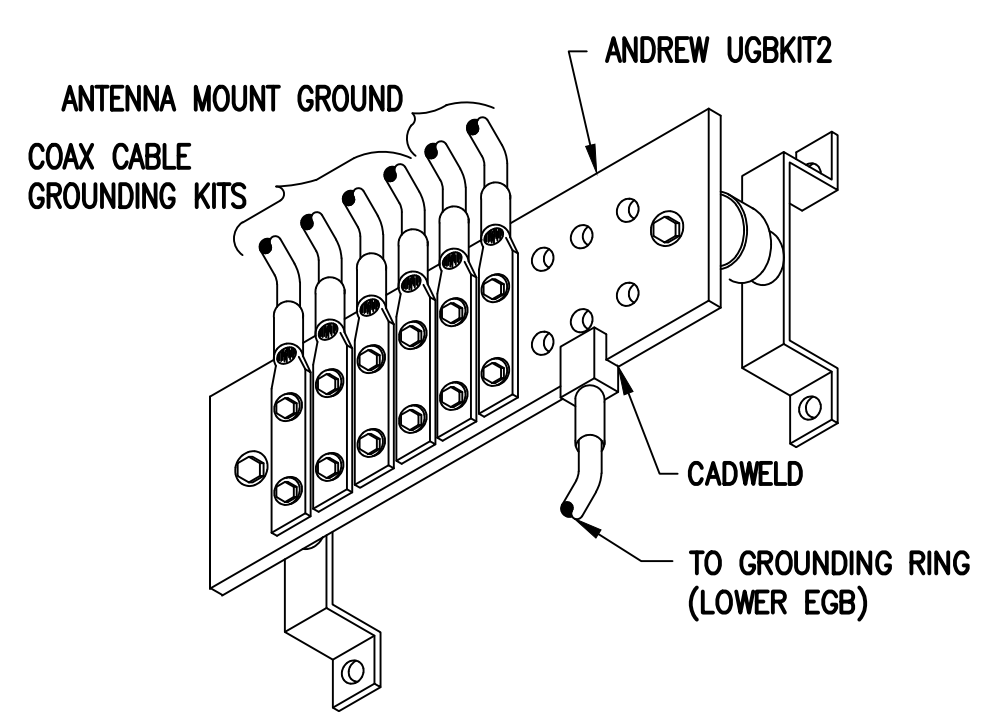
**ONE LINE DIAGRAM**  
SCALE: NOT TO SCALE



**L700/L600/N600/L1900 ANTENNA COAX CABLE CONNECTION AND GROUNDING DETAIL**  
SCALE: NOT TO SCALE



**GROUND BAR (EGB)**  
SCALE: NOT TO SCALE



### ELECTRICAL AND GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THINSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH FULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH FULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE-OUT.

# EXHIBIT 8



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT  
EVALUATION OF HUMAN EXPOSURE POTENTIAL  
TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11090A

Greenwich/Putnam Ave 2  
411 West Putnam Avenue  
Greenwich, Connecticut 06830

**August 4, 2020**

**EBI Project Number: 6220003421**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>81.49%</b>

August 4, 2020

T-Mobile

Attn: Jason Overbey, RF Manager  
35 Griffin Road South  
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11090A - Greenwich/Putnam Ave 2

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **411 West Putnam Avenue in Greenwich, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$ , respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 411 West Putnam Avenue in Greenwich, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 7) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 8) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 9) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 10) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 11) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 12) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied



specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 13) The antenna mounting height centerline of the proposed antennas is 56.75, 54.75, and 59.75 feet above ground level (AGL).
- 14) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 15) All calculations were done with respect to uncontrolled / general population threshold limits.

## T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd
Height (AGL):	56.75 feet	Height (AGL):	56.75 feet	Height (AGL):	56.75 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A1 MPE %:	<b>7.82%</b>	Antenna B1 MPE %:	<b>7.82%</b>	Antenna C1 MPE %:	<b>7.82%</b>
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd
Height (AGL):	54.75 feet	Height (AGL):	54.75 feet	Height (AGL):	54.75 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	290 Watts	Total TX Power (W):	290 Watts	Total TX Power (W):	290 Watts
ERP (W):	7,769.12	ERP (W):	7,769.12	ERP (W):	7,769.12
Antenna A2 MPE %:	<b>15.12%</b>	Antenna B2 MPE %:	<b>15.12%</b>	Antenna C2 MPE %:	<b>15.12%</b>
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	56.75 feet	Height (AGL):	56.75 feet	Height (AGL):	56.75 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A3 MPE %:	<b>28.64%</b>	Antenna B3 MPE %:	<b>28.64%</b>	Antenna C3 MPE %:	<b>28.64%</b>
Antenna #:	4	Antenna #:	4	Antenna #:	4
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	59.75 feet	Height (AGL):	59.75 feet	Height (AGL):	59.75 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A4 MPE %:	<b>8.79%</b>	Antenna B4 MPE %:	<b>8.79%</b>	Antenna C4 MPE %:	<b>8.79%</b>



Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	60.37%
SNET/Cingular	2.26%
Verizon	18.86%
<b>Site Total MPE % :</b>	<b>81.49%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	60.37%
T-Mobile Sector B Total:	60.37%
T-Mobile Sector C Total:	60.37%
<b>Site Total MPE % :</b>	<b>81.49%</b>

### T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1167.14	56.8	52.12	1900 MHz GSM	1000	5.21%
T-Mobile 2100 MHz UMTS	2	1167.14	56.8	26.06	2100 MHz UMTS	1000	2.61%
T-Mobile 600 MHz LTE	1	591.73	54.8	7.10	600 MHz LTE	400	1.77%
T-Mobile 600 MHz NR	1	1577.94	54.8	18.93	600 MHz NR	400	4.73%
T-Mobile 700 MHz LTE	2	695.22	54.8	16.68	700 MHz LTE	467	3.57%
T-Mobile 1900 MHz LTE	2	2104.51	54.8	50.48	1900 MHz LTE	1000	5.05%
T-Mobile 2500 MHz LTE	2	6412.98	56.8	143.18	2500 MHz LTE	1000	14.32%
T-Mobile 2500 MHz NR	2	6412.98	56.8	143.18	2500 MHz NR	1000	14.32%
T-Mobile 1900 MHz LTE	2	2056.61	59.8	41.42	1900 MHz LTE	1000	4.14%
T-Mobile 2100 MHz LTE	2	2307.55	59.8	46.48	2100 MHz LTE	1000	4.65%
						<b>Total:</b>	<b>60.37%</b>

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

## Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	60.37%
Sector B:	60.37%
Sector C:	60.37%
T-Mobile Maximum MPE % (Sector A):	60.37%
Site Total:	81.49%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **81.49%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.