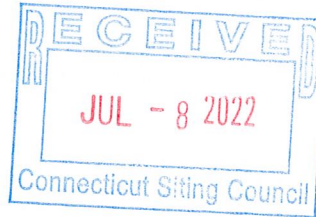




1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

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



June 30th, 2022

RE: **Notice of Exempt Modification for Verizon Wireless**
Crown Site ID# 876382; Verizon Wireless Site ID# 468011
1684 Chamberlain Highway, Berlin, CT 06037
Latitude: 41 35" 23.07"/ Longitude: -72° 48' 19.20"

ORIGINAL
Cm-ver-067-220708

Dear Ms. Bachman:

Verizon Wireless currently maintains (12) antennas at the 95-foot mounts on the existing 133-foot Monopole Tower located at **1684 Chamberlain Highway, Berlin**. The tower is owned by Crown Castle and the property is owned by Ronald & Arlene Laviana. Verizon now intends to replace (9) antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:

Tower:

REMOVE AND REPLACE

- (6) Amphenol BXA-171063-12F-EDIN-2 antennas (**REMOVE**) (3) Commscope NHHSS-65B-R2BT4 antennas (**REPLACE**) (3) Commscope NHH-65B-R2B (**REPLACE**)
- (3) Andrew LNX-651405-ATM antennas (**REMOVE**) (3) Samsung MT6407-77A antennas (**REPLACE**)
- (3) Nokia UHBA B13 RRH (**REMOVE**) (3) Samsung RF44400-13A RRH (**REPLACE**)
- (3) Nokia UHD B4 RRH (**REMOVE**) (6) Samsung RF44390-25A RRH (**REPLACE**)
- (1) Raycap - 6-OVP (**REMOVE**) (2) Raycap RVZDC-6627-PF-48 12-OVP (**REPLACE**)
- (1) Hybrid Cable 1-5/8" (**REMOVE**) (1) Hybrid Cables 1-5/8" (**REPLACE**)

INSTALL

- (3) Side-by-side Antenna mounts
- (3) Samsung CBRS RT4401-48A RRH

REMAINING

- (3) Antel BXA-70063-4CF antennas

Ground:

N/A

The facility was approved by the Berlin Planning and Zoning Commission on March 23, 2000, via grant of Special Permit. Notice of Decision dated April 11, 2000 is the only record able to be located despite diligent effort, therefore conditions of approval are unknown.



1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

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 Mark Kaczynski, Mayor, Maureen Giusti, Town Planner, and Ronald & Arlene Laviana, Property Owners.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification 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 Communication Commission safety standard.
5. The proposed modifications 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, Verizon Wireless respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2).

Sincerely,

Katie Adams
Crown Castle, Agent for Verizon Wireless
kadams@nbelle.com
(781) 392-7547



1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

cc:

Mark Kaczynski, Mayor
Town of Berlin
240 Kensington Road
Berlin, CT 0603 7
860.828.7000
(Via Fedex)

Maureen Giusti, Town Planner
Town of Berlin
240 Kensington Road
Berlin, CT 0603 7
860.828.7008
(Via Fedex)

Ronald & Arlene Laviana, Property Owner
1684 Chamberlain Highway
Kensington, CT 0603 7
(Via Fedex)

Crown Castle, Tower Owner

Katie Adams

From: TrackingUpdates@fedex.com
Sent: Wednesday, July 6, 2022 10:45 AM
To: Katie Adams
Subject: FedEx Shipment 777287338580: Your package has been delivered



Hi. Your package was delivered Wed, 07/06/2022 at 10:41am.



Delivered to 240 KENSINGTON RD, ber, CT 06037
Received by K.KARA

OBTAIN PROOF OF DELIVERY

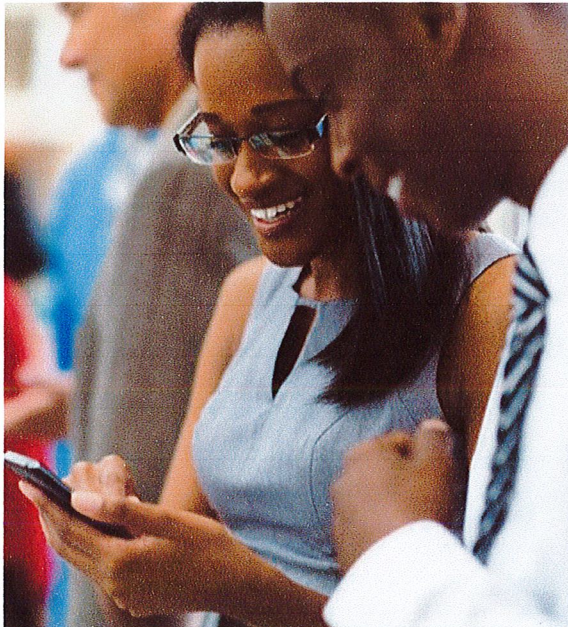
TRACKING NUMBER [777287338580](#)

FROM NB+C
100 Apollo Drive
Suite 303
CHELMSFORD, MA, US, 01824

TO Town of Berlin
Mark Kaczynski

240 Kensington Road
ber, CT, US, 06037

REFERENCE	100788 - CSC
SHIPPER REFERENCE	100788 - CSC
SHIP DATE	Tue 7/05/2022 06:28 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Pak
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	ber, CT, US, 06037
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



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- **Download now.**



Katie Adams

From: TrackingUpdates@fedex.com
Sent: Wednesday, July 6, 2022 10:45 AM
To: Katie Adams
Subject: FedEx Shipment 777287364073: Your package has been delivered



Hi. Your package was
delivered Wed, 07/06/2022 at
10:41am.



Delivered to 240 KENSINGTON RD, berlin, CT 06037
Received by K.KARA

OBTAIN PROOF OF DELIVERY

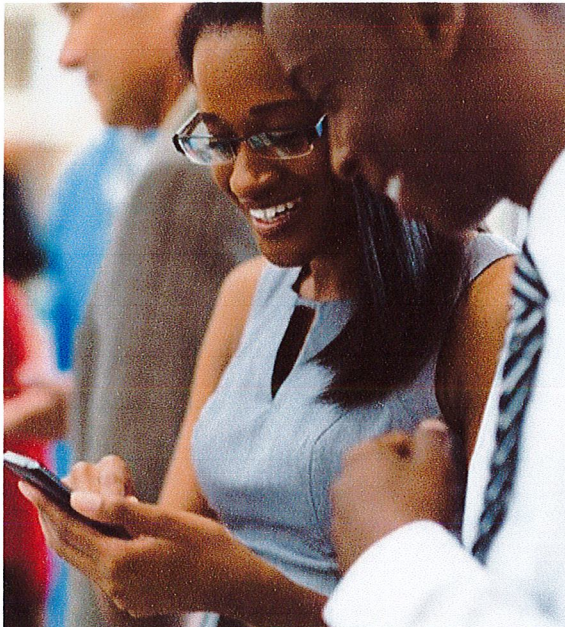
TRACKING NUMBER [777287364073](#)

FROM NB+C
100 Apollo Drive
Suite 303
CHELMSFORD, MA, US, 01824

TO Town of Berlin
Maureen Giusti

240 Kensington Road
berlin, CT, US, 06037

REFERENCE	100788 - CSC
SHIPPER REFERENCE	100788 - CSC
SHIP DATE	Tue 7/05/2022 06:28 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Pak
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	berlin, CT, US, 06037
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



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- **Download now.**



Katie Adams

From: TrackingUpdates@fedex.com
Sent: Wednesday, July 6, 2022 12:08 PM
To: Katie Adams
Subject: FedEx Shipment 777287384903: Your package has been delivered



Hi. Your package was
delivered Wed, 07/06/2022 at
12:07pm.



Delivered to 1684 CHAMBERLAIN HWY, Berlin, CT 06037

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	777287384903
FROM	NB+C 100 Apollo Drive Suite 303 CHELMSFORD, MA, US, 01824
TO	Ronald & Arlene Laviana 1684 Chamberlain Highway Berlin, CT, US, 06037

REFERENCE 100788 - CSC

SHIPPER REFERENCE 100788 - CSC

SHIP DATE Tue 7/05/2022 06:28 PM

DELIVERED TO Residence

PACKAGING TYPE FedEx Pak

ORIGIN CHELMSFORD, MA, US, 01824

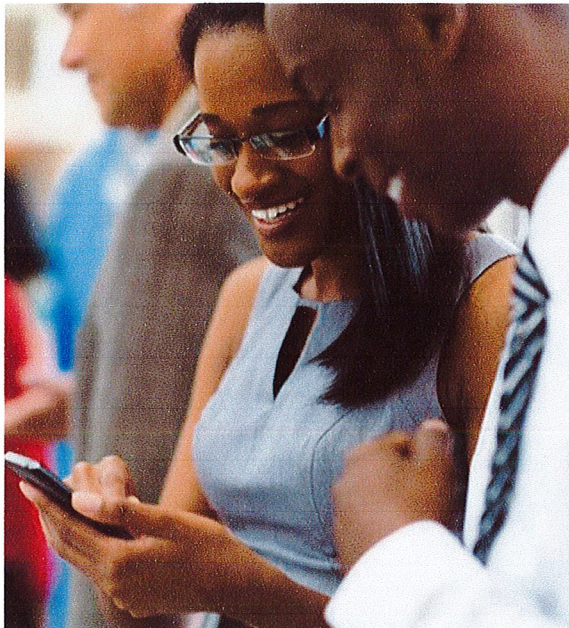
DESTINATION Berlin, CT, US, 06037

SPECIAL HANDLING Deliver Weekday
Residential Delivery

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



Get the FedEx[®] Mobile app

Create shipments, receive tracking alerts, redirect packages to a FedEx retail location for pickup, and more from the palm of your hand

- **Download now.**



FOLLOW FEDEX

Exhibit A

Original Facility Approval

Town of Berlin

Department of Development Services

April 11, 2000

NOTICE OF DECISION BERLIN PLANNING AND ZONING COMMISSION

Application: Special Permit - #00-02-SP
Applicant: SPRINT Spectrum L.P. dba SPRINT PCS
Location: Lot 17, Block 15, Chamberlain Highway

At its Regular Meeting of March 23, 2000, the Berlin Planning and Zoning voted five to two to grant the Special Permit Application of SPRINT Spectrum L.P., d/b/a SPRINT PCS for a telecommunications tower and related equipment at Lot 17, Block 15, Chamberlain Highway.

061210


 Brian J. Miller, ACP
 Director of Development Services

Lawrence J. & Nellie C. Laviana
 Owner of Record

Certified Mail (Return Receipt Requested): 7099 3400 0001 5361 6271

Visit Our Web Site: <http://www.edc.ci.berlin.ct.us>

Town of Berlin, Connecticut • Planning and Zoning Commission
 240 Kensington Road • Berlin, CT 06037 • (860) 828-7060 • Fax (860) 828-7180

RECEIVED May 3 20 00
 AT 12 HR 58 MIN P.M.

AND RECORDED IN
 BERLIN LAND RECORDS

VOL 433 PAGE 333


 Cheryl DeJure
 TOWN CLERK

Exhibit B

Property Card



Property Information

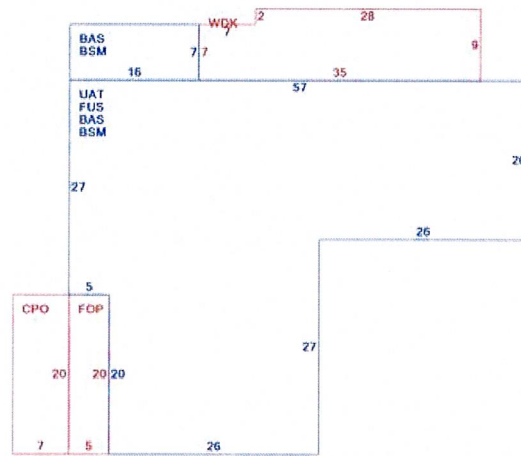
Property Location	1684 CHAMBERLAIN HWY
Owner	LAVIANA RONALD L & ARLENE G
Co-Owner	
Mailing Address	1684 CHAMBERLAIN HWY KENSINGTON CT 06037
Land Use	1070 SFR w/Apt
Land Class	R
Zoning Code	MR-1
Census Tract	4002

District	0
Acreage	65.05
Utilities	Gas,Well,Septic
Book / Page	0456/0137

Photo



Sketch



Primary Construction Details

Year Built	1800
Building Desc.	SFR w/Apt
Building Style	Colonial
Stories	2
Occupancy	1.00
Exterior Walls	Vinyl Siding
Exterior Walls 2	
Roof Style	Gable
Roof Cover	Asph/F Gls/Cmp
Interior Walls	Drywall
Interior Walls 2	
Interior Floors 1	Carpet
Interior Floors 2	

Heating Fuel	Gas/Oil
Heating Type	Hot Water
AC Type	None
Bedrooms	6 Bedrooms
Full Bathrooms	3
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	12
Bath Style	Average
Kitchen Style	Average
Fin BSMT Area	
Fin BSMT Quality	
Fin BSMT Area 2	
Fin BSMT Qual 2	

BSMT Garages	0
Fireplaces	2
Whirlpool Tub	0
Building Use	Residential
Building Condition	A
Industrial / Commercial Details (*Residential Not Applicable)	
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA



Town of Berlin, CT

Property Listing Report

Map Block Lot

19-4-15-17

Building #

1

PID

3445

Account

1036200

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	210800	147600
Extras	7500	5300
Improvements		
Outbuildings	276700	193700
Land	1481400	122176
Total	1976400	468776

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1989	1989
Concrete Patio	140	0
Porch, Open, Finished	100	0
Basement	1989	0
Attic, Unfinished	1877	0
Upper Story, Finished	1877	1877
Deck, Wood	301	0
Total Area	8273	3866

Outbuilding and Extra Features

Type	Description
Barn 1 Story	638 S.F.
Barn 1 Sty w/Bsm	2100 S.F.
Garage - Avg	504 S.F.
Shed Wd Res	420 S.F.
Cell Tower	150 L.F.
Generator	22 UNITS

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
LAVIANA RONALD L & ARLENE G	0456/0137	2001-09-19	0
LAVIANA,LAWRENCE,,	0088/0223	1944-04-23	0

Exhibit C

Construction Drawings



VERIZON SITE NUMBER: 468011
VERIZON SITE NAME: BERLIN 3 CT
VERIZON FUZE ID: 16092564
SITE TYPE: MONOPOLE
TOWER HEIGHT: 133'-0"

BUSINESS UNIT #: 876382
SITE ADDRESS: 1684 CHAMBERLAIN HWY
 BERLIN, CT 6037
COUNTY: HARTFORD
JURISDICTION: CONNECTICUT
SITING COUNCIL

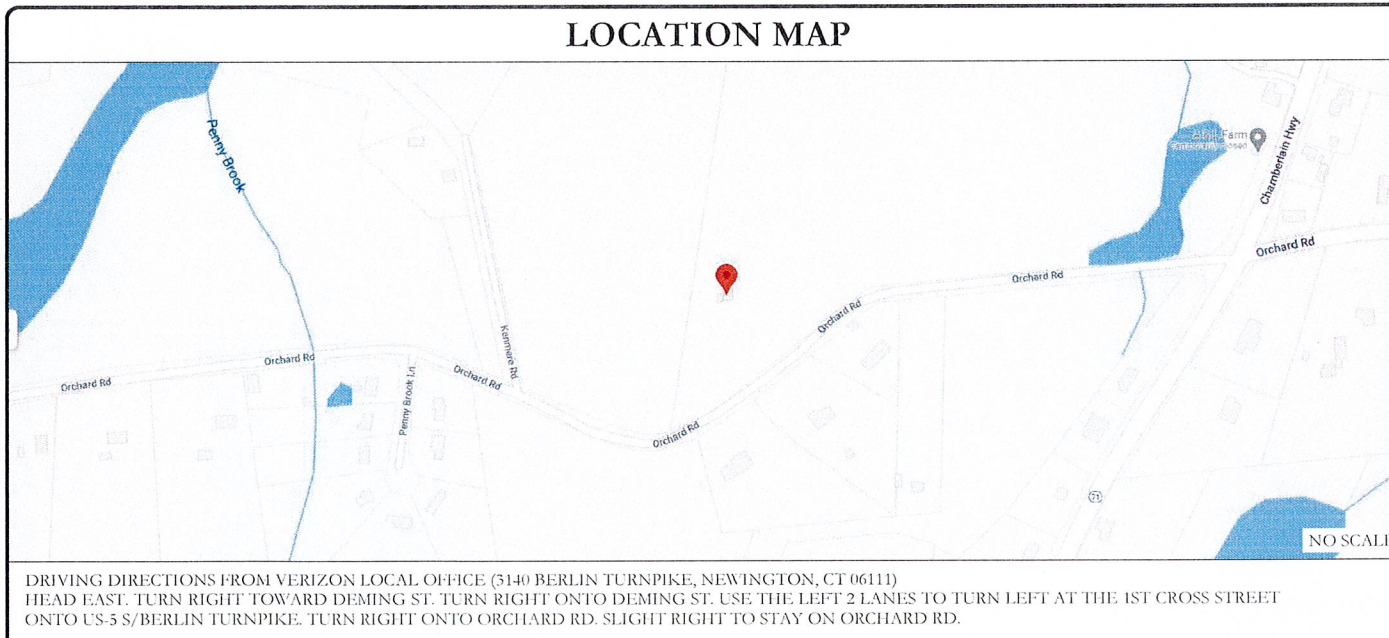
VERIZON MODIFICATION;4G_850,4G_PCS,5G_850,5G_LSUB6-PREP



VERIZON SITE NUMBER:
468011
BU #: 876382
BERLIN / LAVIANA ORCHARD
 1684 CHAMBERLAIN HWY
 BERLIN, CT 6037
EXISTING 133'-0" MONOPOLE

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	BERLIN / LAVIANA ORCHARD
SITE ADDRESS:	1684 CHAMBERLAIN HWY BERLIN, CT 6037
COUNTY:	HARTFORD
MAP/PARCEL #:	19-4-15-17
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 33' 23.07"
LONGITUDE:	-72° 48' 19.20"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	364 FT
CURRENT ZONING:	MR-1
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	LAVIANA RONALD L. & ARLENE G. 1684 CHAMBERLAIN HWY KENSINGTON, CT 06037
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	VERIZON WIRELESS 180 WASHINGTON VALLEY ROAD BEDMINSTER, NJ 07921
ELECTRIC PROVIDER:	CONNECTICUT LIGHT & POWER CO (800) 922-4455
TELCO PROVIDER:	AT&T (833) 205-0045

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN
C-2	TOWER ELEVATION & ANTENNA PLANS
C-3	EQUIPMENT SCHEDULES
C-4	EQUIPMENT DETAILS
C-5.1	EQUIPMENT DETAILS
C-5.2	EQUIPMENT DETAILS
C-6	PLUMBING DIAGRAM
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS
APPENDIX	MOUNT MODIFICATION DRAWINGS
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.	



APPROVALS	
<u>SIGNATURE</u>	<u>DATE</u>
_____	_____
_____	_____
_____	_____
_____	_____

CONTRACTOR PMI REQUIREMENTS	
PMI ACCESSED AT	https://pmi.vxwsmart.com
SMART TOOL VENDOR	
PROJECT NUMBER	10145263
VzW LOCATION CODE (PSLC)	468011
*** PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT	

MOUNT MODIFICATION REQUIRED	Y
VzW APPROVED SMART KIT VENDORS	
REFER TO MOUNT MODIFICATION DRAWINGS PAGE FOR VzW SMART KIT APPROVED VENDORS	

APPLICABLE CODES/REFERENCE DOCUMENTS	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:	
CODE TYPE	CODE
BUILDING	2015 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC
REFERENCE DOCUMENTS:	
STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	MASER CONSULTING
DATED:	04/27/2022
RFDS REVISION:	0
DATED:	03/25/2022
ORDER ID:	617710
REVISION:	0

PROJECT DESCRIPTION
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.
TOWER SCOPE OF WORK:
<ul style="list-style-type: none"> REMOVE (9) ANTENNAS REMOVE (6) RRHS REMOVE (1) G-OVP REMOVE (1) HYBRID CABLE INSTALL PLATFORM MOUNT MODIFICATIONS INSTALL (9) ANTENNAS INSTALL (9) RRHS INSTALL (2) 12-OVP INSTALL (1) HYBRID CABLE
NOTE: PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER

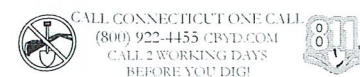
PROJECT TEAM	
A&E FIRM:	TOWER ENGINEERING PROFESSIONALS 326 TRYON ROAD RALEIGH, NC 27603 (919) 661-6351 JOSEPH T. CRESS - PROJECT MANAGER SCOTT C. BRANTLEY - CIVIL ENGINEER
CROWN CASTLE USA INC. DISTRICT CONTACTS:	6525 ARDREY KELL ROAD, SUITE 600 CHARLOTTE, NC 28277 SARA REA LOADHOLDT - A&E SPECIALIST (704) 405-6548

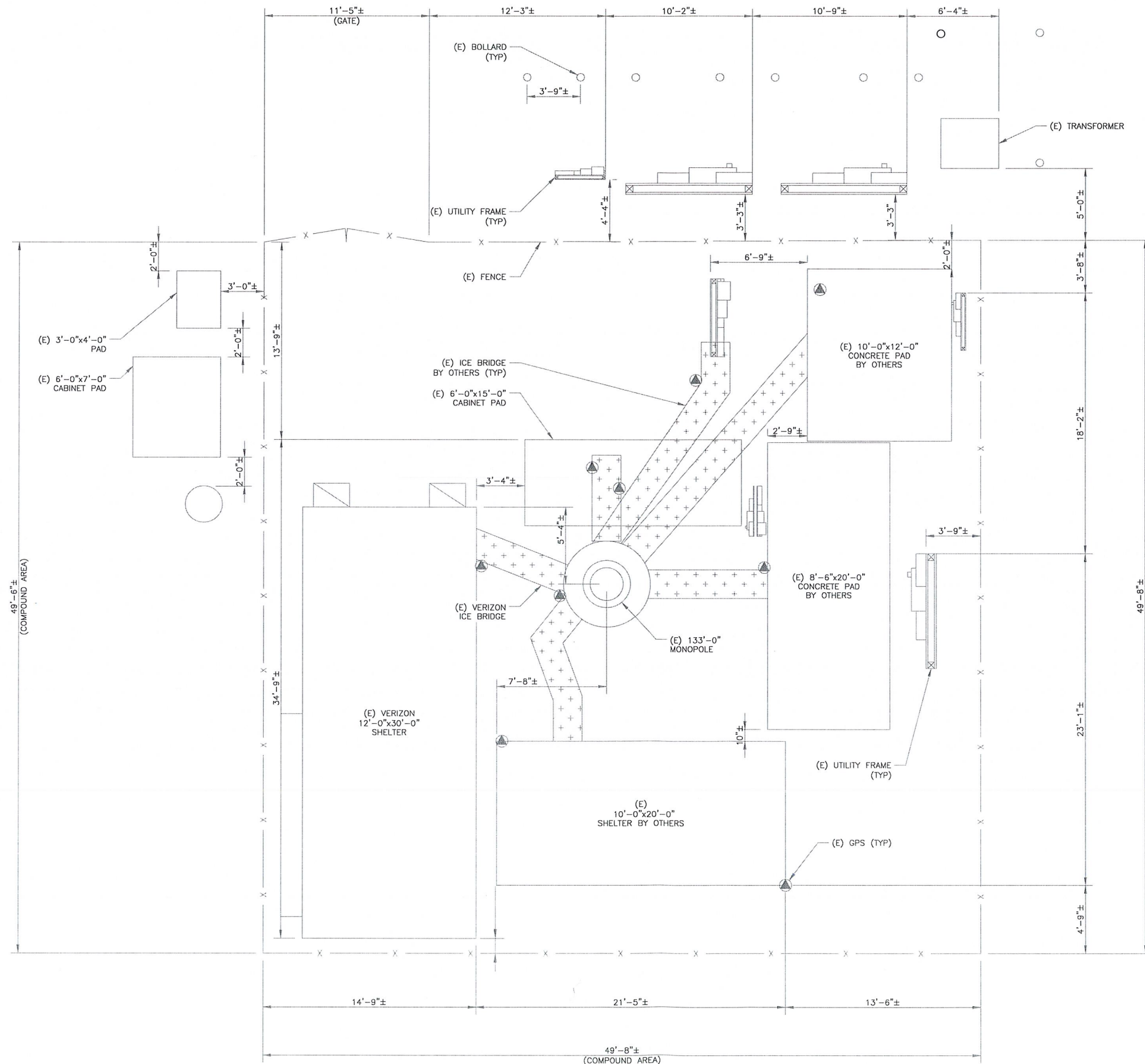
ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES/QA
0	05/27/22	KCA	CONSTRUCTION	RST

05/27/22

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

SHEET NUMBER: T-1	REVISION: 0
-----------------------------	-----------------------





1 SITE PLAN
 SCALE: 1/4" = 1'-0" (FULL SIZE)
 1/8" = 1'-0" (11x17)



verizon
 20 ALEXANDER DRIVE, 2ND FLOOR
 WALLINGFORD, CT 06492

CROWN CASTLE
 1200 MACARTHUR BLVD, SUITE 200
 MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
 326 TRYON RD
 RALEIGH, NC 27603
 (919) 661-6351
 TEP JOB #: 25646.702028

VERIZON SITE NUMBER:
468011
 BU #: 876382
BERLIN / LAVIANA ORCHARD
 1684 CHAMBERLAIN HWY
 BERLIN, CT 06037
 EXISTING 133'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
0	05/27/22	KCA	CONSTRUCTION	RST



05/27/22

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

SHEET NUMBER: **C-1** REVISION: **0**

EXISTING 133'-0" MONOPOLE

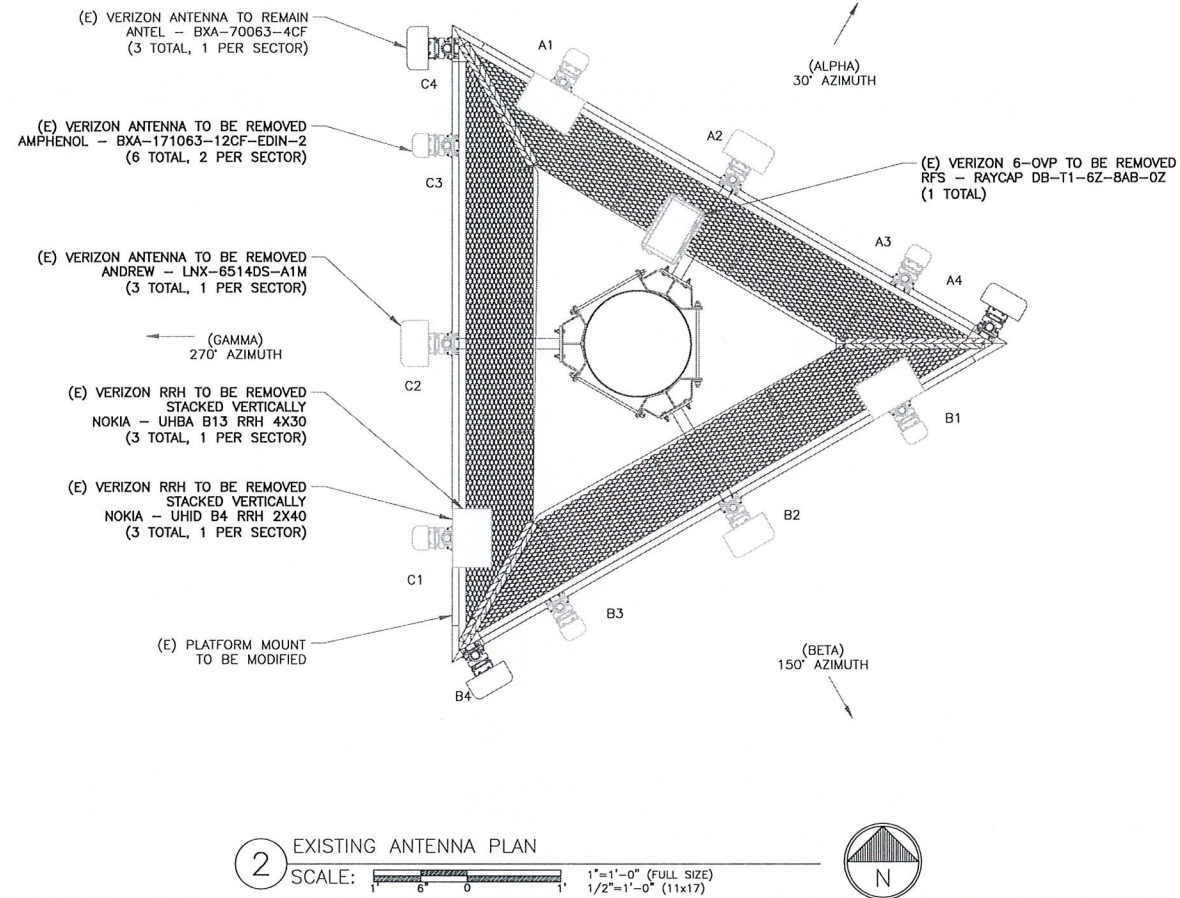
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
0	05/27/22	KCA	CONSTRUCTION	RST

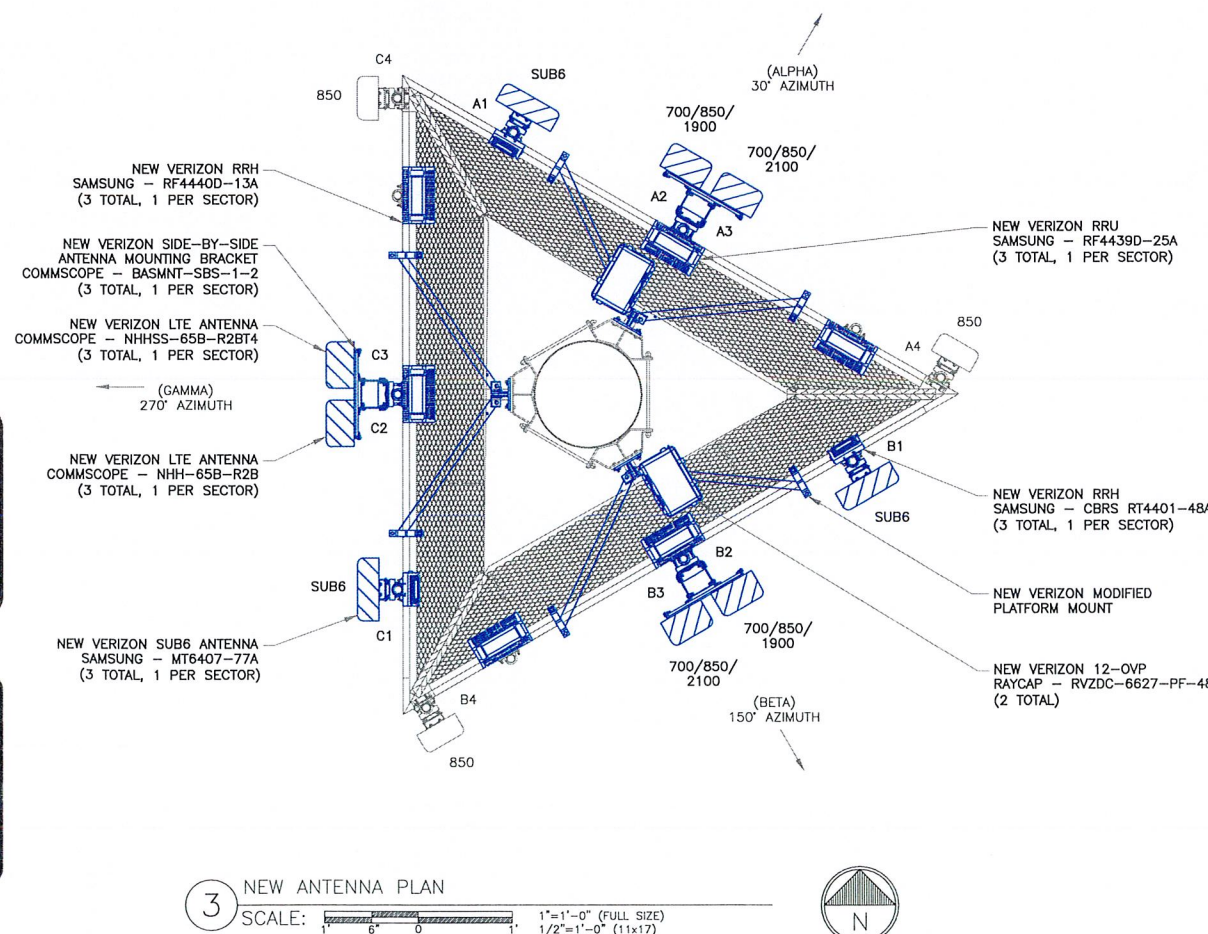


05/27/22

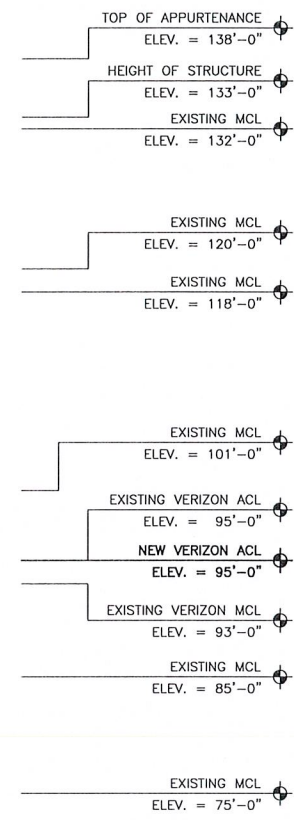
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.



2 EXISTING ANTENNA PLAN
 SCALE: 1/2"=1'-0" (FULL SIZE)
 1/2"=1'-0" (11x17)



3 NEW ANTENNA PLAN
 SCALE: 1/2"=1'-0" (FULL SIZE)
 1/2"=1'-0" (11x17)



1 TOWER ELEVATION
 SCALE: 1/8"=1'-0" (FULL SIZE), 1/16"=1'-0" (11x17)

- NEW VERIZON EQUIPMENT**
- (3) COMMSCOPE - NHH-65B-R2B LTE ANTENNAS
 - (3) COMMSCOPE - NHHS-65B-R2BT4 LTE ANTENNAS
 - (3) SAMSUNG - MT6407-77A SUB6 ANTENNAS
 - (2) RAYCAP - RVZDC-6627-PF-48 12-OVP
 - (3) SAMSUNG - RT4401-48A RRH
 - (3) SAMSUNG - RF4439D-25A RRH
 - (3) SAMSUNG - RF4440D-13A RRH
 - (3) COMMSCOPE - BASMNT-SBS-1-2 INSTALLED ON MODIFIED MOUNT
- (E) VERIZON EQUIPMENT TO REMAIN**
- (3) ANTEL - BXA-70063-4CF CDMA ANTENNAS INSTALLED ON EXISTING MOUNTS

VERIZON EQUIPMENT
 ANTENNA CL: 95'-0"
 MOUNT CL: 93'-0"

INSTALLER NOTE:
 EXISTING AND PROPOSED ANTENNA/EQUIPMENT POSITIONING SHOWN PER RFDS. FIELD CONDITIONS MAY VARY.

TOWER ANALYSIS NOTES:


1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING TOWER ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE TOWER ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED TOWER MODIFICATION DESIGN OR TOWER REPLACEMENT SHALL BE APPROVED BY EOR.

MOUNT ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	05/27/22	KCA	CONSTRUCTION	RST



05/27/22

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

ANTENNA/RRH SCHEDULE

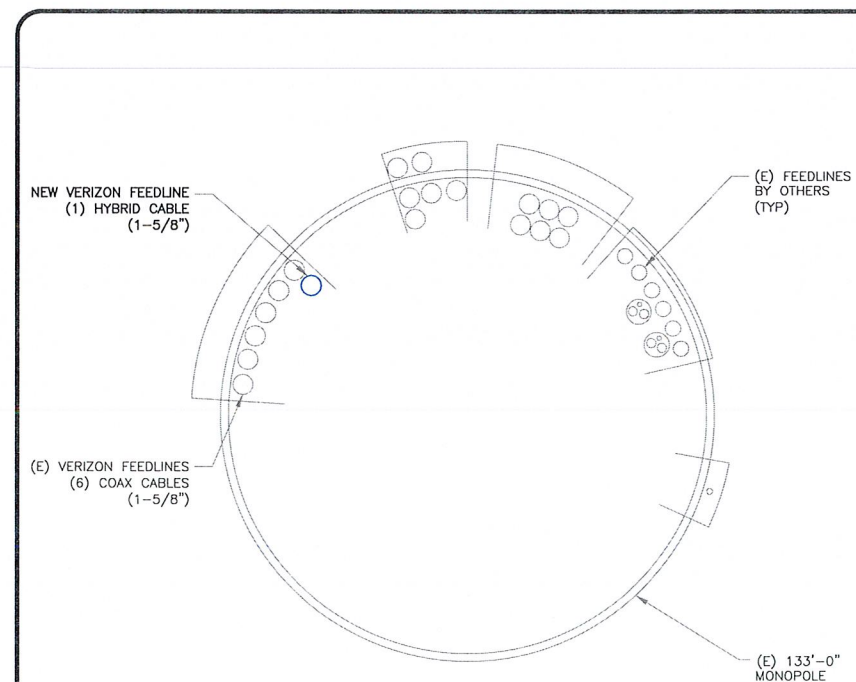
SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA CENTERLINE	AZIMUTH	MECHANICAL DOWNTILTS	ELECTRICAL DOWNTILTS	TOWER EQUIPMENT MANUFACTURER	TOWER EQUIPMENT QTY/MODEL
A1	NEW	SAMSUNG	MT6407-77A	95'-0"	30'	*	*	SAMSUNG	(1) CBRS RT4401-48A RRH
A2	NEW	COMMSCOPE	NHH-65B-R2B	95'-0"	30'	*	*	SAMSUNG	(1) RF4439D-25A RRH
A3	NEW	COMMSCOPE	NHHSS-65B-R2BT4	95'-0"	30'	*	*	SAMSUNG	(1) RF4440D-13A RRH
A4	EXISTING	ANTEL	BXA-70063-4CF	95'-0"	30'	*	*	RAYCAP	(1) RVZDC-6627-PF-4B 12-OVP
B1	NEW	SAMSUNG	MT6407-77A	95'-0"	150'	*	*	SAMSUNG	(1) CBRS RT4401-48A RRH
B2	NEW	COMMSCOPE	NHH-65B-R2B	95'-0"	150'	*	*	SAMSUNG	(1) RF4439D-25A RRH
B3	NEW	COMMSCOPE	NHHSS-65B-R2BT4	95'-0"	150'	*	*	SAMSUNG	(1) RF4440D-13A RRH
B4	EXISTING	ANTEL	BXA-70063-4CF	95'-0"	150'	*	*	RAYCAP	(1) RVZDC-6627-PF-4B 12-OVP
C1	NEW	SAMSUNG	MT6407-77A	95'-0"	270'	*	*	SAMSUNG	(1) CBRS RT4401-48A RRH
C2	NEW	COMMSCOPE	NHH-65B-R2B	95'-0"	270'	*	*	SAMSUNG	(1) RF4439D-25A RRH
C3	NEW	COMMSCOPE	NHHSS-65B-R2BT4	95'-0"	270'	*	*	SAMSUNG	(1) RF4440D-13A RRH
C4	EXISTING	ANTEL	BXA-70063-4CF	95'-0"	270'	*	*	-	-

NOTE - NEW ANTENNA/EQUIPMENT SHOWN IN BOLD
 * - CONTRACTOR TO REFERENCE MOST RECENT RFDS FOR MECHANICAL AND ELECTRICAL DOWNTILTS

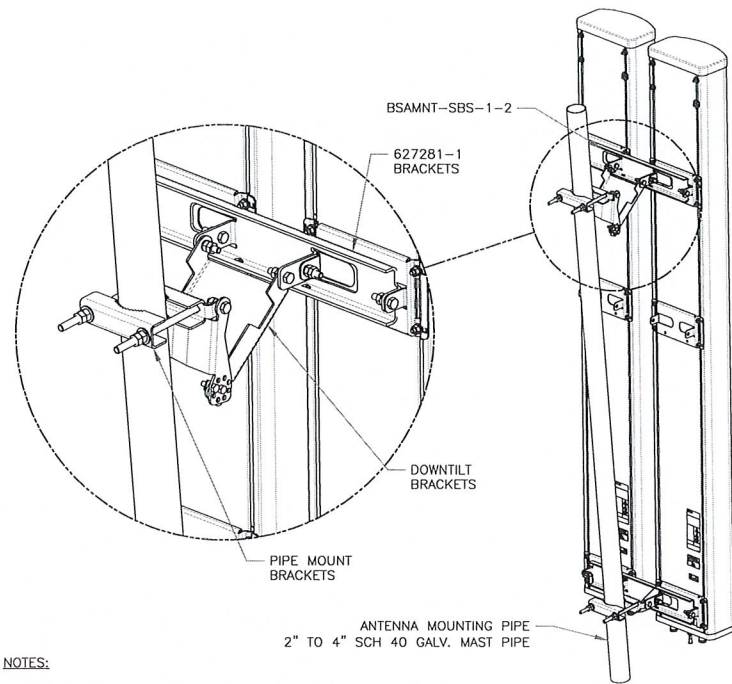
1 VERIZON TOWER EQUIPMENT SCHEDULE
 SCALE: NOT TO SCALE

CABLE SCHEDULE

STATUS	CABLE TYPE	MANUFACTURER (MODEL #)	SIZE	LENGTH	QTY
EXISTING	COAX	ANDREW (LDF7-50A)	1-5/8"	144'-0"±	6
NEW	HYBRID	RFS/CELWAVE HB15B-21U6S12-XXXM-01	1-5/8"	144'-0"±	1
TOTAL CABLE QTY:					7



2 BASE LEVEL DETAIL
 SCALE: NOT TO SCALE

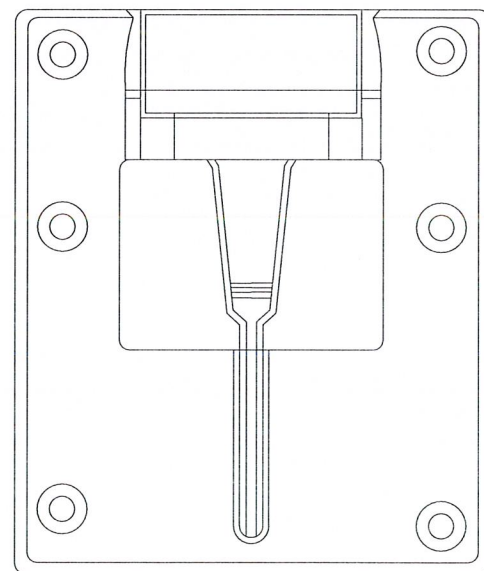


NOTES:

- BSAMNT-SBS-1-2 KIT CONTAINS (2) 627281 MOUNTING BRACKETS.
- TORQUE THE M10 BOLT ASSEMBLY TO 37 N.m. PER MANUFACTURE'S RECOMMENDATIONS.

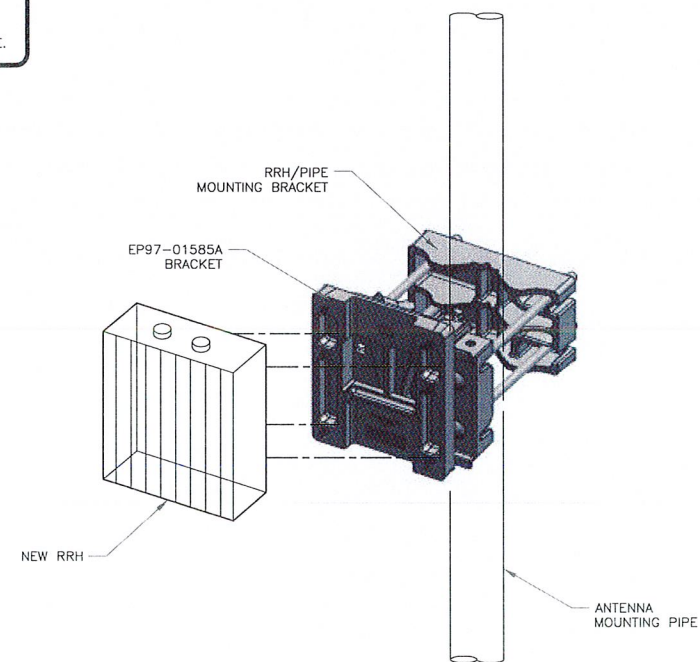
1 COMMSCOPE - BSAMNT-SBS-1-2
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE



3 SAMSUNG - EP97-01585A BRACKET DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:
ALL PIPES BRACKETS AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



4 ANTENNA & RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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MAHWAH, NJ 07430

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RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 25646.702028

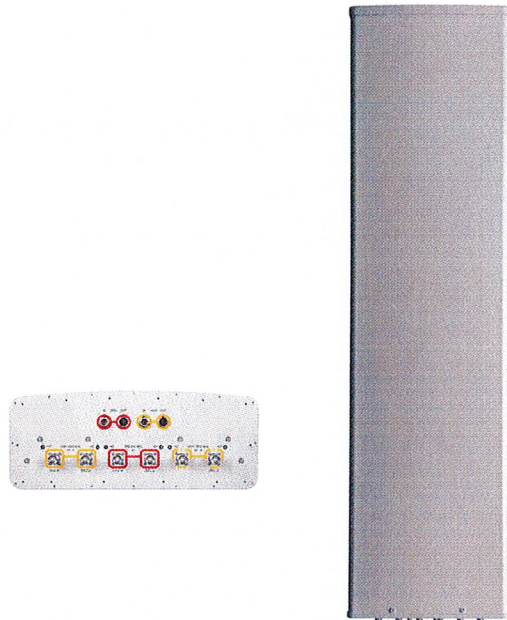
VERIZON SITE NUMBER:
468011
BU #: 876382
BERLIN / LAVIANA ORCHARD
1684 CHAMBERLAIN HWY
BERLIN, CT 6037
EXISTING 133'-0" MONOPOLE

ISSUED FOR:

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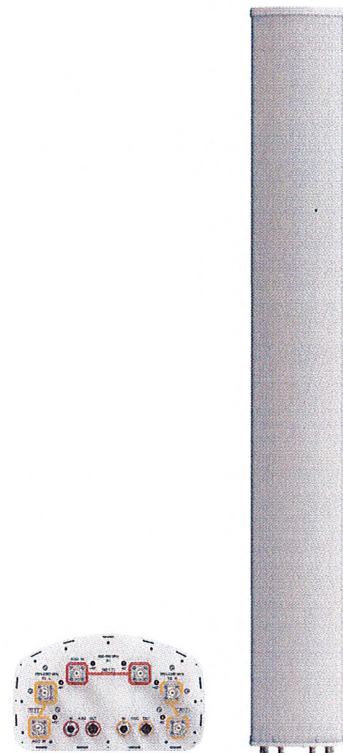

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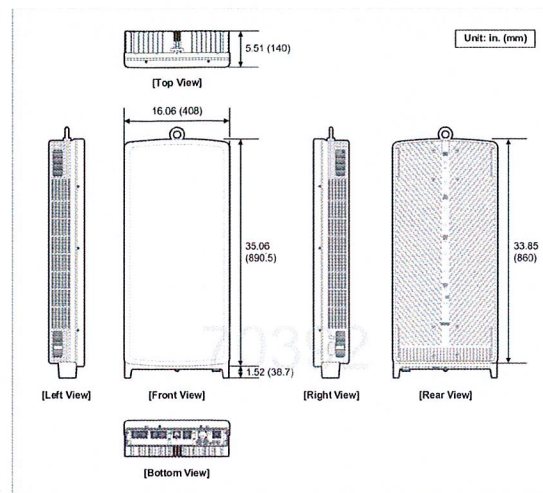
COMMSCOPE - NHH-45B-R2B ANTENNA
WEIGHT: 43.70 LBS
SIZE (HxWxD): 72.00x11.90x7.10 IN.

1 COMMSCOPE - NHH-45B-R2B
SCALE: NOT TO SCALE



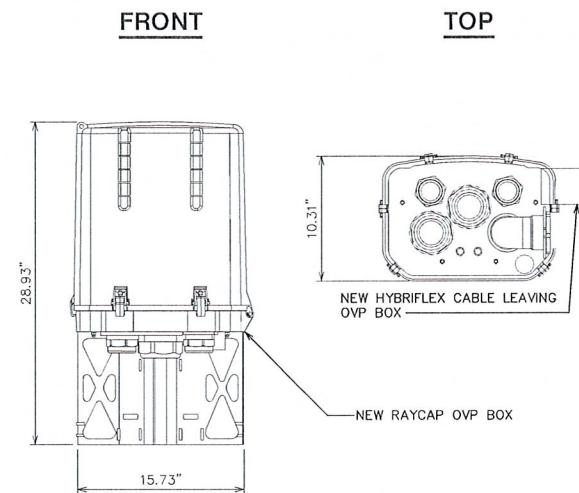
COMMSCOPE - NHHSS-65C-R2BT4 ANTENNA
WEIGHT: 50.93 LBS
SIZE (HxWxD): 71.97x11.85x7.13 IN.

2 COMMSCOPE - NHHSS-65C-R2BT4
SCALE: NOT TO SCALE



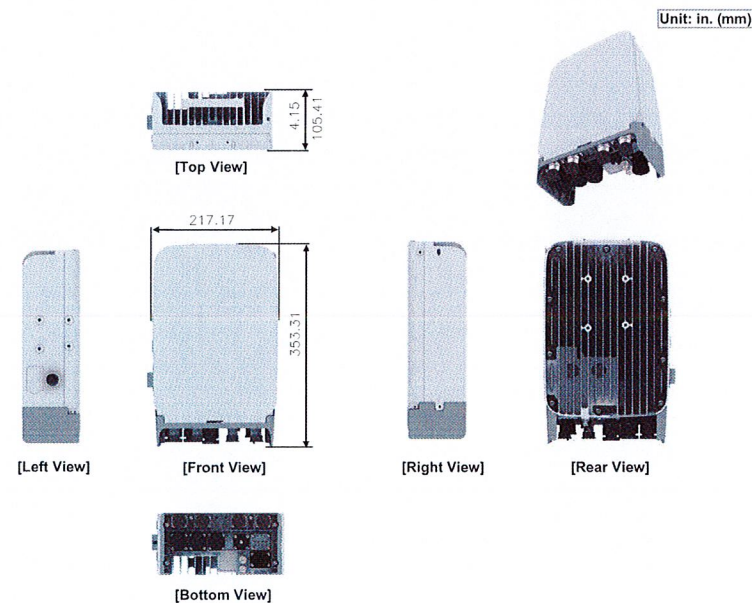
SAMSUNG TELECOMMUNICATIONS - MT6407-77A ANTENNA
WEIGHT: 81.57 LBS
SIZE (HxWxD): 35.06x16.06x5.51 IN.

3 SAMSUNG - MT6407-77A
SCALE: NOT TO SCALE



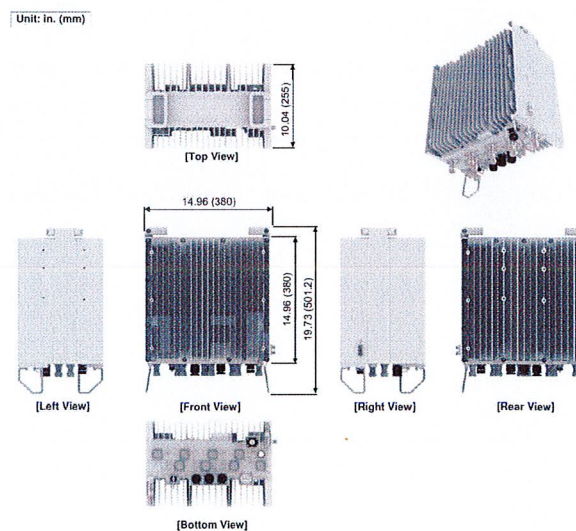
RAYCAP - RVZDC-6627-PF-48
WEIGHT: 32.00 LBS
SIZE (HxWxD): 28.93x15.73x10.31 IN.

4 RAYCAP RVZDC-6627-PF-48
SCALE: NOT TO SCALE



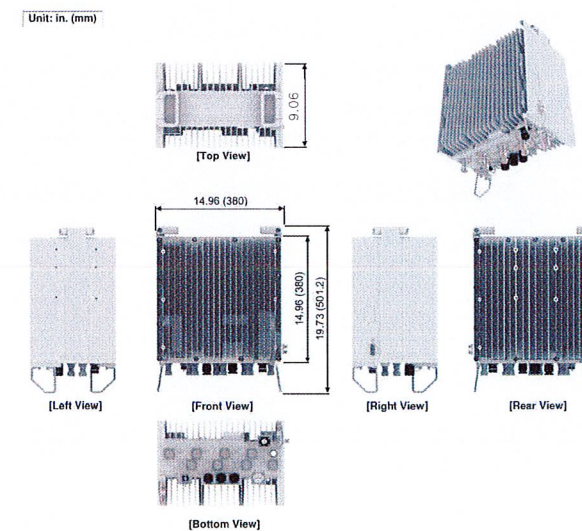
SAMSUNG - CBRS RT4401-48A RRH
WEIGHT: 18.64 LBS
SIZE (HxWxD): 1391x8.55x4.15 IN.

5 SAMSUNG - CBRS RT4401-48A RRH
SCALE: NOT TO SCALE



SAMSUNG - RF4439D-25A RRH
WEIGHT (WITHOUT MOUNTING HARDWARE): 74.70 LBS
SIZE (HxWxD): 14.96x14.96x10.04 IN.

6 SAMSUNG - RF4439D-25A
SCALE: NOT TO SCALE



SAMSUNG - RF4440D-13A RRH
WEIGHT (WITHOUT MOUNTING HARDWARE): 72.50 LBS
SIZE (HxWxD): 14.96x14.96x9.06 IN.

7 SAMSUNG - RF4440D-13A
SCALE: NOT TO SCALE

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326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 25646.702028

VERIZON SITE NUMBER:
468011

BU #: 876382
BERLIN / LAVIANA ORCHARD

1684 CHAMBERLAIN HWY
BERLIN, CT 6037

EXISTING 133'-0" MONOPOLE

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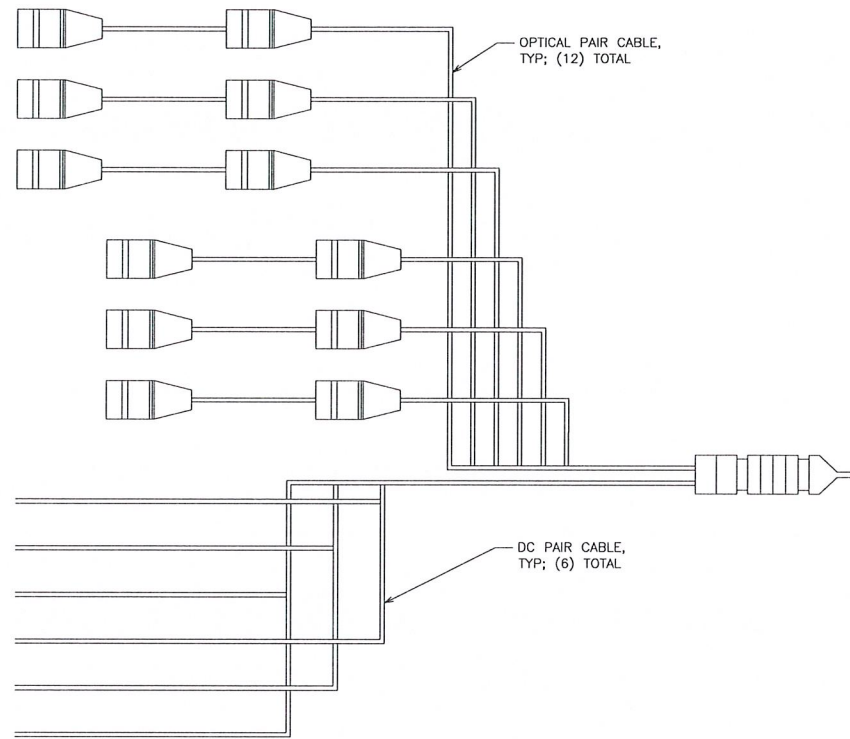


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REVISION:
0



RFS/CELWAVE - HB158-21U6S12-XXXM-01
 WEIGHT: 1.7 LBS/FT
 DIAMETER: 1.99" (±.1")
 COAX EQUIVALENT: 1%

1 HCS DETAIL
 SCALE: NOT TO SCALE

FIBER NAMING CONVENTION	
Technology	(Equipment-Sector-OPTI #)
DUPLEX FIBER RUN	
5GmmW L0	5GmmW-A-0
SIMPLEX FIBER RUN	
CBRS L0	CBRS-A-0
CBRS L1	CBRS-A-1
LAA L0	LAA-A-0
High Band Dual Band L0	HB-A-0
High Band Dual Band L1	HB-A-1
Low Band Dual Band L0	LB-A-0
FDMIMO AWS L0	FDM-AWS-A-0
FDMIMO AWS L1	FDM-AWS-A-1
FDMIMO PCS L0	FDM-PCS-A-0
FDMIMO PCS L1	FDM-PCS-A-1

Rev. 2/23/2021

2 FIBER NAMING CONVENTION CHART
 SCALE: NOT TO SCALE

3 NOT USED
 SCALE: NOT TO SCALE



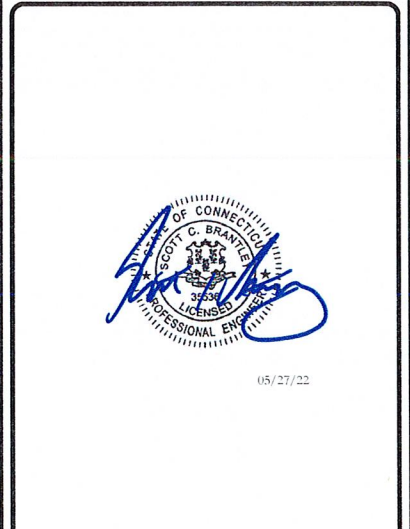
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4 NOT USED
 SCALE: NOT TO SCALE

5 NOT USED
 SCALE: NOT TO SCALE

6 NOT USED
 SCALE: NOT TO SCALE

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 20 ALEXANDER DRIVE, 2ND FLOOR
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 (919) 661-6351
 TEP JOB #: 25646.702028

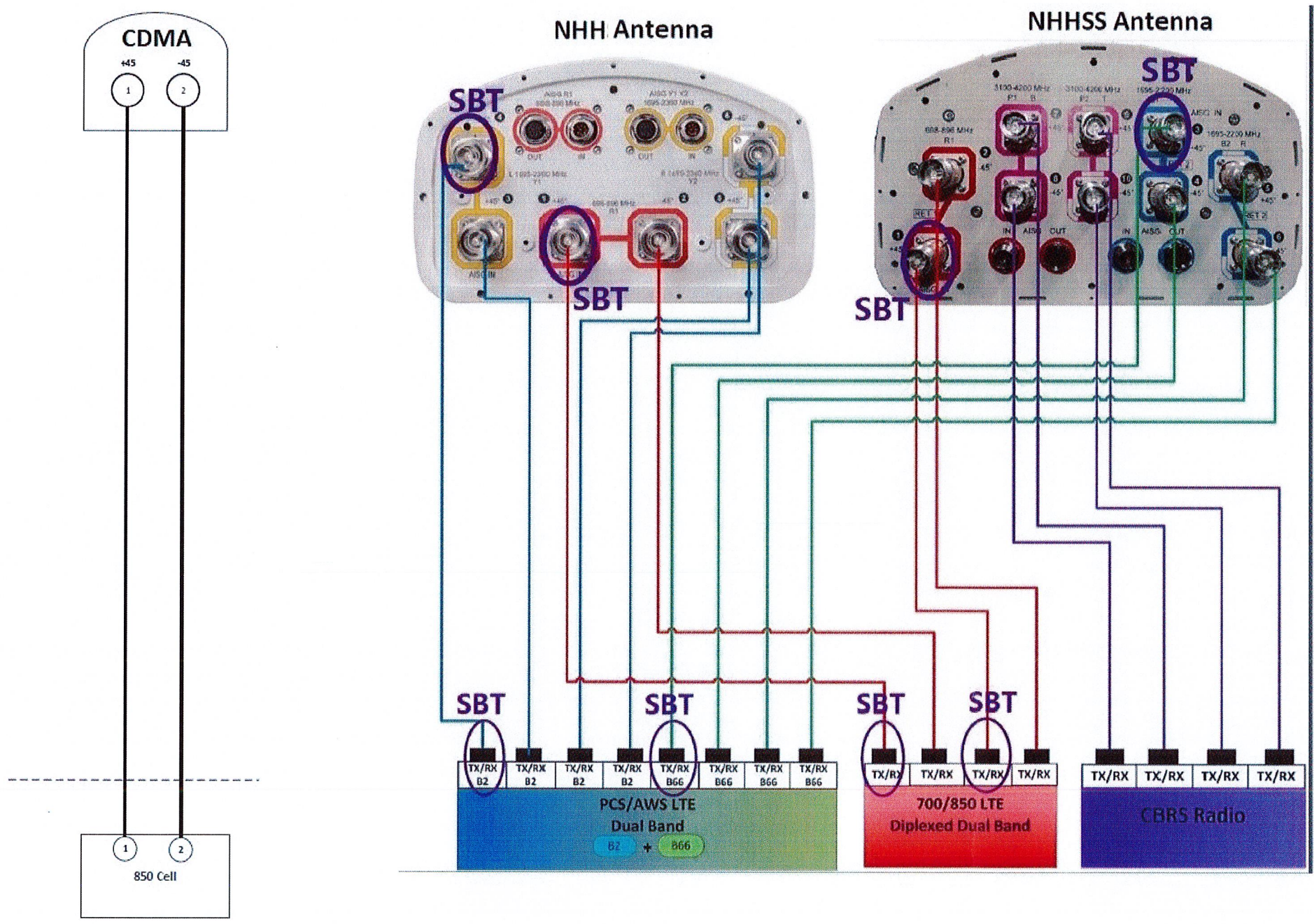
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468011
 BU #: 876382
BERLIN / LAVIANA ORCHARD
 1684 CHAMBERLAIN HWY
 BERLIN, CT 06037
 EXISTING 133'-0" MONOPOLE

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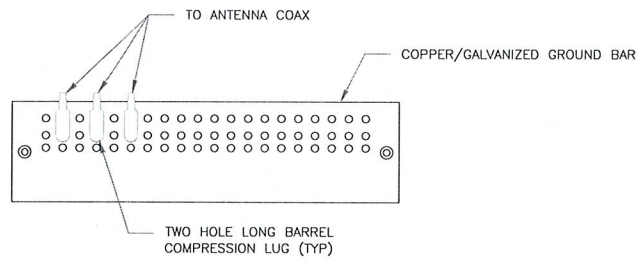
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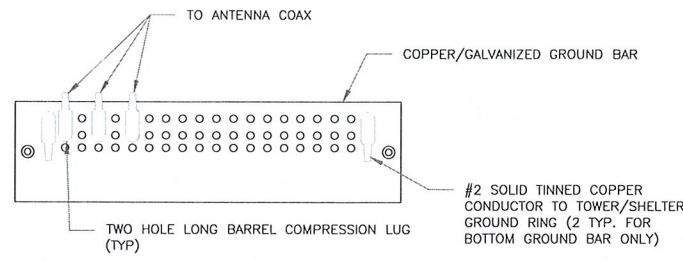
1 PLUMBING DIAGRAM
 SCALE: NOT TO SCALE



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

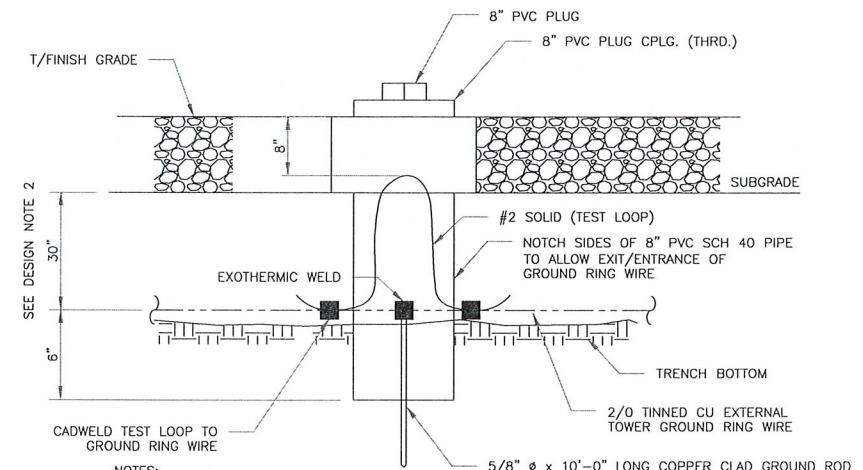
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

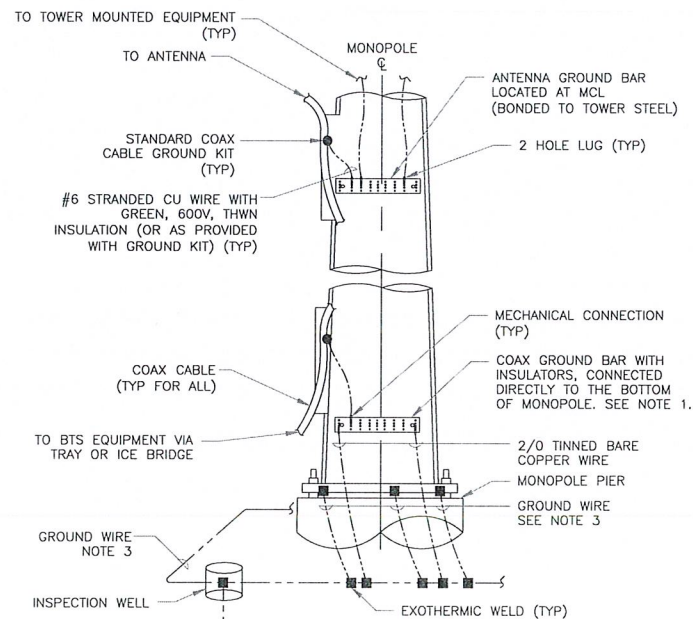
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

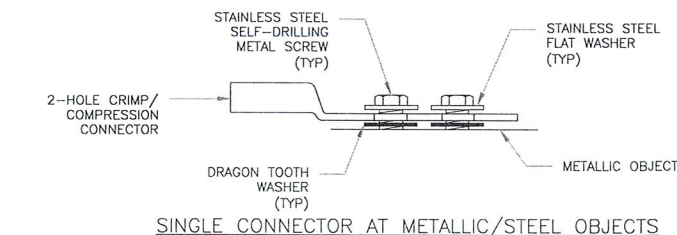
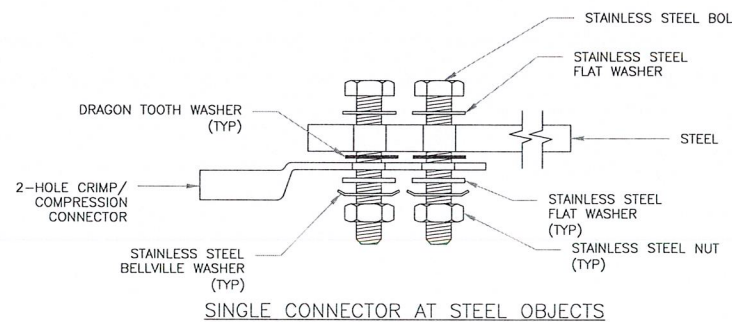
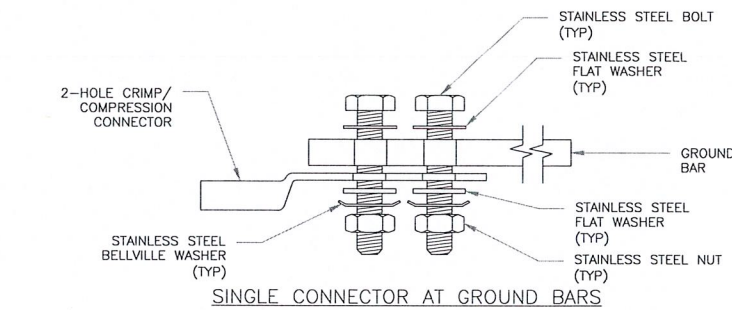
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



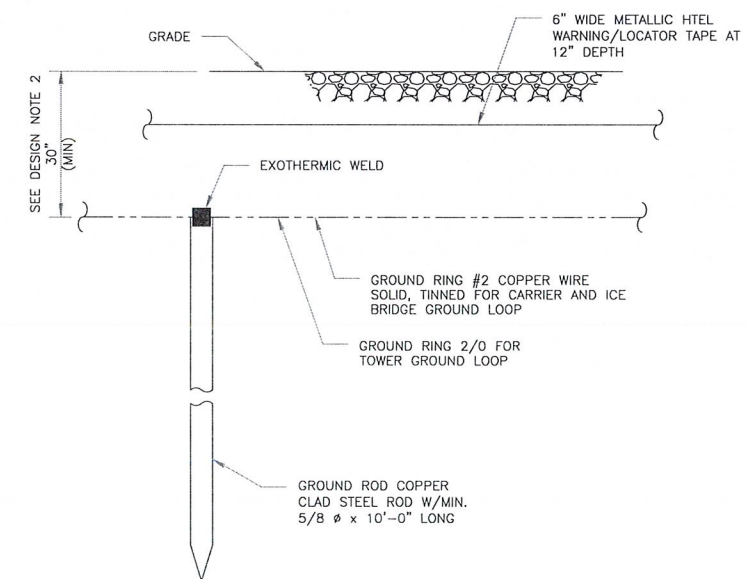
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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326 TRYON RD
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(919) 661-6351
TEP JOB #: 25646.702028

VERIZON SITE NUMBER:
468011

BU #: 876382
BERLIN / LAVIANA ORCHARD

1684 CHAMBERLAIN HWY
BERLIN, CT 06037

EXISTING 133'-0" MONOPOLE

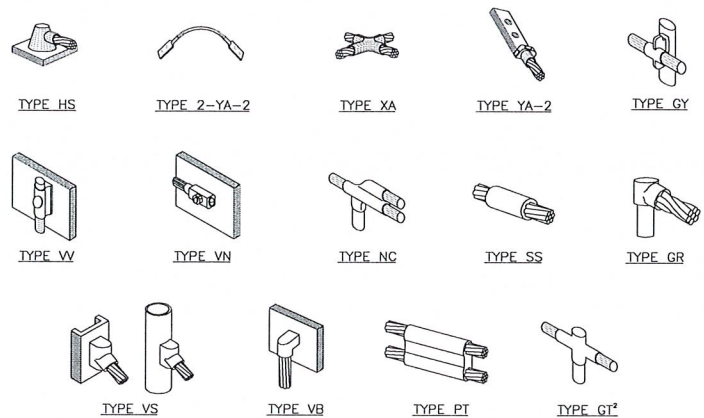
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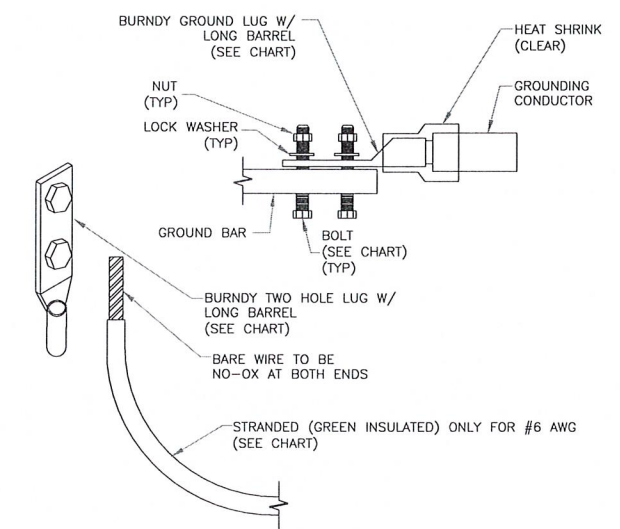


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

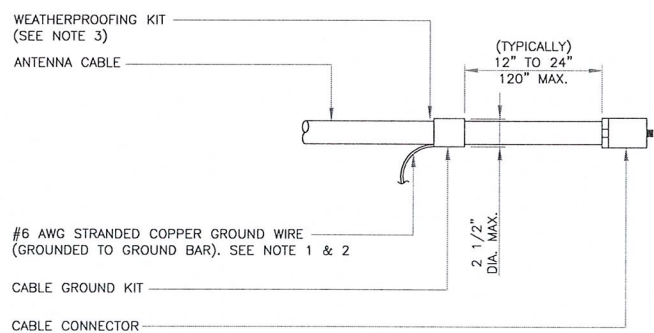
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC3B	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC3B	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC3B	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC3B	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

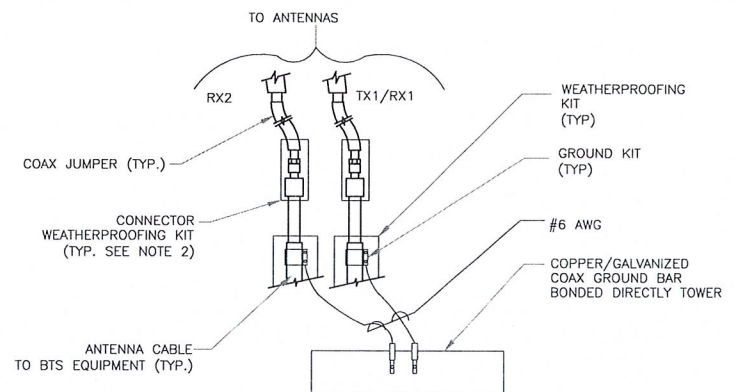
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

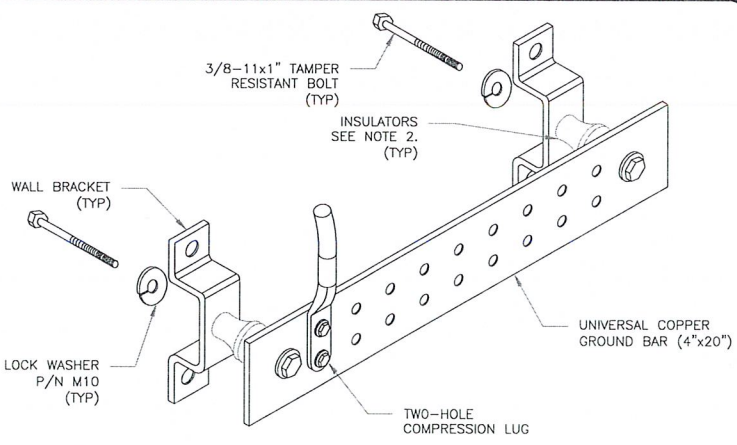
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

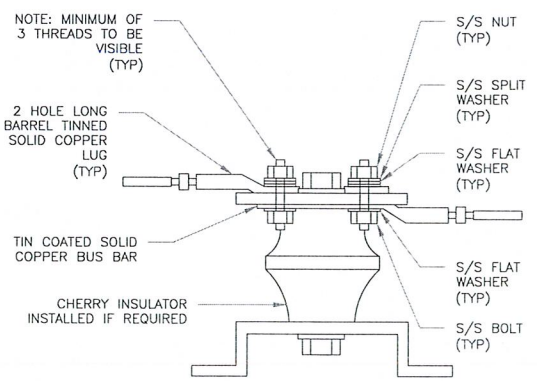
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



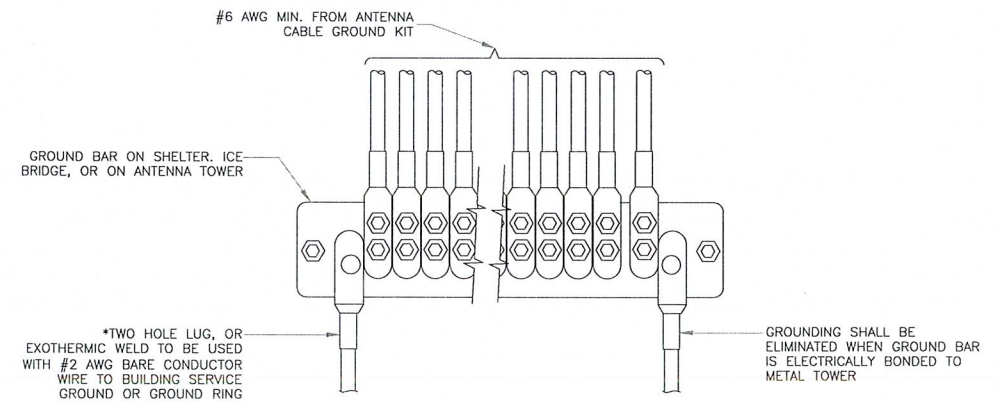
NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY OAS-STO-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

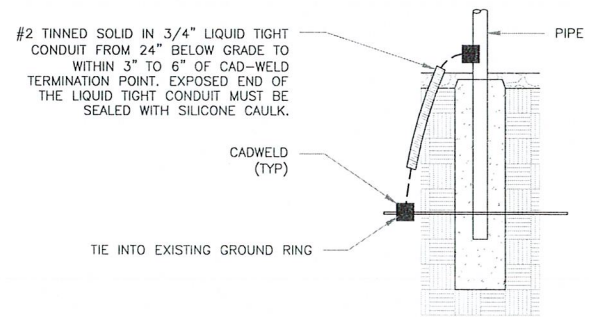
6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE



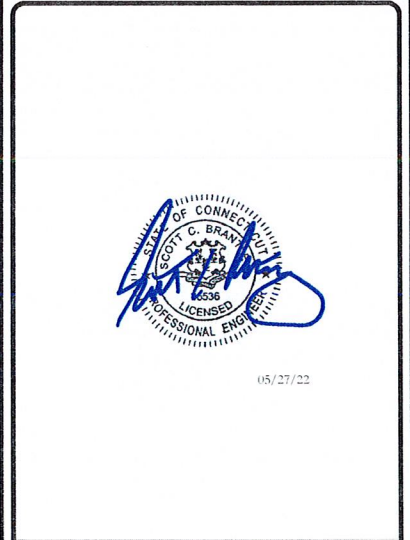
VERIZON SITE NUMBER:
468011

BU #: 876382
BERLIN / LAVIANA ORCHARD

1684 CHAMBERLAIN HWY
BERLIN, CT 6037

EXISTING 133'-0" MONOPOLE

ISSUED FOR:				
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Exhibit D

Structural Analysis Report



MORRISON HERSHFIELD

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Date: June 01, 2022

Subject: Structural Analysis Report

Carrier Designation: Verizon Wireless Co-Locate
Site Number: 468011
Site Name: BERLIN 3 CT

Crown Castle Designation: BU Number: 876382
Site Name: Berlin / Laviana Orchard
JDE Job Number: 717372
Work Order Number: 2115001
Order Number: 617710 Rev. 0

Engineering Firm Designation: Morrison Hershfield Project Number: CN11-646 / 2200039

Site Data: 1684 Chamberlain Highway, Berlin, Hartford County, CT 6037
Latitude 41° 35' 23.07", Longitude -72° 48' 19.2"
133 Foot - Monopole Tower

Morrison Hershfield is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above-mentioned tower.

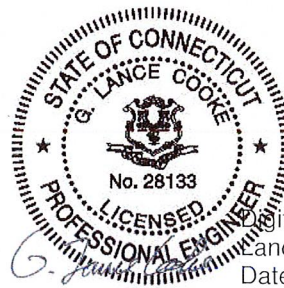
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration Sufficient Capacity – 99.7%

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

G. Lance Cooke, P.E. (CT License No. PEN.0028133)
Senior Engineer



Digitally signed by G. Lance Cooke
Date: 2022.06.02 11:07:19-07'00'

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Table 5 – Tower Component Stresses vs. Capacity – LC7

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 133 ft Summit monopole tower designed by Paul J Ford and Company. A tower mapping was performed by Tower Engineering Professionals, Inc., in August of 2018.

The tower has been modified multiple times in the past to accommodate additional loading. All the modifications have been considered in this analysis per their respective post modification inspection reports.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
 Risk Category: II
 Wind Speed: 118 mph
 Exposure Category: C
 Topographic Factor: 1
 Ice Thickness: 1 in
 Wind Speed with Ice: 50 mph
 Service Wind Speed: 60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
93.0	94.0	2	antel	BXA-171063-12CF-EDIN-X w/ Mount Pipe	7	1-5/8
		1	antel	BXA-171063-8BF-2 w/ Mount Pipe		
		3	commscope	NHH-65B-R2B		
		3	commscope	NHHSS-65B-R2BT4		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		6	rf/celwave	FD9R6004/2C-3L		
		3	samsung telecommunications	CBRS RT4401-48A		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
		2	raycap	RVZDC-6627-PF-48		
	93.0	3	commscope	Side-By-Side Mounting Kit [#BASMNT-SBS-1-2]		
	1	-	Platform Mount [LP 1201-1]			

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
132.0	132.0	3	cci antennas	TPA65R-BU8D_CCIV2 w/ Mount Pipe		
		3	ericsson	RRUS 4415 B25	6	1-1/4
		3	ericsson	RRUS 4449 B5/B12	4	3/4
		3	kaelus	DBC0111F2V62-1	2	3/8
		1	raycap	DC6-48-60-18-8C-EV	2	2C
		1	raycap	DC6-48-60-18-8F		
		1	-	Side Arm Mount [SO 901-3]		
120.0	121.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
	120.0	1	Site Pro 1	12' Platform mount [#RMQP-496-HK]		
111.0	111.0	3	jma wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		
101.0	101.0	3	rfs/celwave	APX16DWV-16DWVS-C w/ Mount Pipe	6	1-5/8
		3	andrew	ETT19VS12UB		
		3	ericsson	KRY 112 144/1		
		1	-	T-Arm Mount [TA 602-3]		
75.0	75.0	3	rfs/celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8
50.0	51.0	1	lucent	KS24019-L112A	1	1/2
	50.0	1	-	Side Arm Mount [SO 901-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1629353	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1629413	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1629384	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	8173364	CCISITES
4-POST-MODIFICATION INSPECTION	8482047	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2611098	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2339268	CCISITES
4-POST-MODIFICATION INSPECTION	5287888	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	133 - 128	Pole	TP14x14x0.375	Pole	4.0	Pass
L2	128 - 123.5	Pole	TP14x14x0.375	Pole	8.6	Pass
L3	123.5 - 123	Pole	TP22x22x0.375	Pole	3.8	Pass
L4	123 - 118	Pole	TP22.75x22x0.1875	Pole	10.8	Pass
L5	118 - 113	Pole	TP23.5x22.75x0.1875	Pole	17.6	Pass
L6	113 - 108	Pole	TP24.251x23.5x0.1875	Pole	26.7	Pass
L7	108 - 103	Pole	TP25.001x24.251x0.1875	Pole	36.1	Pass
L8	103 - 98	Pole	TP25.751x25.001x0.1875	Pole	45.9	Pass
L9	98 - 93	Pole	TP26.501x25.751x0.1875	Pole	55.4	Pass
L10	93 - 88	Pole	TP27.251x26.501x0.1875	Pole	70.0	Pass
L11	88 - 85.75	Pole	TP28.114x27.251x0.1875	Pole	75.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L12	85.75 - 80.75	Pole	TP27.964x27.214x0.25	Pole	57.4	Pass
L13	80.75 - 75.75	Pole	TP28.714x27.964x0.25	Pole	64.6	Pass
L14	75.75 - 70.75	Pole	TP29.465x28.714x0.25	Pole	71.4	Pass
L15	70.75 - 65.75	Pole	TP30.215x29.465x0.25	Pole	77.8	Pass
L16	65.75 - 60.75	Pole	TP30.965x30.215x0.25	Pole	83.8	Pass
L17	60.75 - 57.75	Pole	TP31.415x30.965x0.25	Pole	87.2	Pass
L18	57.75 - 57.5	Pole + Reinf.	TP31.453x31.415x0.4625	Reinf. 2 Tension Rupture	75.7	Pass
L19	57.5 - 52.5	Pole + Reinf.	TP32.203x31.453x0.4563	Reinf. 2 Tension Rupture	80.6	Pass
L20	52.5 - 47.5	Pole + Reinf.	TP32.953x32.203x0.45	Reinf. 2 Tension Rupture	85.3	Pass
L21	47.5 - 45	Pole + Reinf.	TP33.966x32.953x0.45	Reinf. 2 Tension Rupture	87.5	Pass
L22	45 - 40	Pole + Reinf.	TP33.578x32.828x0.4813	Reinf. 2 Tension Rupture	87.8	Pass
L23	40 - 35	Pole + Reinf.	TP34.329x33.578x0.4688	Reinf. 2 Tension Rupture	91.6	Pass
L24	35 - 30	Pole + Reinf.	TP35.079x34.329x0.4688	Reinf. 2 Tension Rupture	95.1	Pass
L25	30 - 29.75	Pole	TP35.116x35.079x0.2813	Pole	99.7	Pass
L26	29.75 - 29.5	Pole + Reinf.	TP35.154x35.116x0.5188	Reinf. 1 Tension Rupture	81.0	Pass
L27	29.5 - 24.5	Pole + Reinf.	TP35.904x35.154x0.5126	Reinf. 1 Tension Rupture	83.9	Pass
L28	24.5 - 19.5	Pole + Reinf.	TP36.654x35.904x0.5063	Reinf. 1 Tension Rupture	86.7	Pass
L29	19.5 - 14.5	Pole + Reinf.	TP37.404x36.654x0.5063	Reinf. 1 Tension Rupture	89.3	Pass
L30	14.5 - 9.5	Pole + Reinf.	TP38.155x37.404x0.4938	Reinf. 1 Tension Rupture	91.7	Pass
L31	9.5 - 4.5	Pole + Reinf.	TP38.905x38.155x0.4938	Reinf. 1 Tension Rupture	94.0	Pass
L32	4.5 - 0	Pole + Reinf.	TP39.58x38.905x0.4876	Reinf. 1 Tension Rupture	95.9	Pass
					Summary	
				Pole	99.7	Pass
				Reinforcement	95.9	Pass
				Overall	99.7	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	123	40.3	Pass
1	Anchor Rods	0	77.9	Pass
1	Base Plate		52.5	Pass
1	Base Foundation (Structure)	0	76.0	Pass
1	Base Foundation (Soil Interaction)		46.9	Pass

Structure Rating (max from all components) =	99.7%*
---	---------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) *Rating per TIA-222-H, Section 15.5.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

Exhibit E

Mount Analysis



Maser Consulting Connecticut
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@colliersengineering.com

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10145263
Maser Consulting Connecticut Project #: 22777019A

April 27, 2022

Site Information

Site ID: 468011-VZW / BERLIN 3 CT
Site Name: BERLIN 3 CT
Carrier Name: Verizon Wireless
Address: 1684 Chamberlain Hwy
Berlin, Connecticut 06037
Hartford County
Latitude: 41.589917°
Longitude: -72.805333°

Structure Information

Tower Type: 138-Ft Monopole
Mount Type: 13.67-Ft Platform

FUZE ID # 16092564

Analysis Results

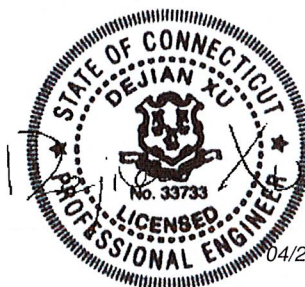
Platform: 63.5% **Pass w/ Modifications***

*Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.

***Contractor PMI Requirements:

Included at the end of this MA report
Available & Submitted via portal at <https://pmi.vzwsmart.com>
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

Report Prepared By: Prasanna Dhakal



04/28/2022

Executive Summary:

The objective of this report is to summarize the analysis results of the antenna support mount including the proposed modifications at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 674828, dated March 25, 2022
Mount Mapping Report	Onsight Services, Site ID: 468011, dated April 10, 2022
Previous Mount Analysis	Maser Consulting Connecticut, Project #: 22777019A, dated April 15, 2022
Mount Modification Drawings	Maser Consulting Connecticut, Project #: 22777019A, dated April 27, 2022

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 118 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.00 in Risk Category: II Exposure Category: C Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.987
Seismic Parameters:	S_s : 0.200 g S_1 : 0.055 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Live Load, L_v : 250 lbs. Maintenance Live Load, L_m : 500 lbs.
Analysis Software:	RISA-3D (V17)

Final Loading Configuration:

The following equipment has been considered for the analysis of the mount:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
94.00	95.00	3	Samsung	MT6407-77A	Added
		3	Commscope	NHH-65B-R2B	
		3	Commscope	NHHSS-65B-R2BT4	
		3	Samsung	RF4439d-25A	
		3	Samsung	RF4440d-13A	
		3	Samsung	CBRS RRH - RT4401-48A	
		2	Raycap	RVZDC-6627-PF-48	
		3	Antel	BXA-70063-4CF	Retained

It is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required unless replacing an existing OVP.

Model Number	Ports	AKA
DB-B1-6C-12AB-0Z	6	OVP-6
RVZDC-6627-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Maser Consulting Connecticut and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Maser Consulting Connecticut to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontal	63.5%	Pass
Crossmember	18.4%	Pass
Grating Support	10.5%	Pass
Standoff Horizontal	18.2%	Pass
Mount Pipe	29.9%	Pass
Mod Mount Pipe	25.5%	Pass
Mod Support Rail	27.8%	Pass
Mod V-Bracing Kit	10.5%	Pass
Mount Connection	18.0%	Pass

Structure Rating – (Controlling Utilization of all Components)	63.5%
---	--------------

Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	34.0	34.0	47.5	47.5
0.5	42.5	42.5	61.4	61.4
1	50.7	50.7	75.0	75.0

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sectors.
- Ka factors included in (EPA)a calculations

Requirements:

The existing mount will be **SUFFICIENT** for the final loading configuration (attachment 2) after the modifications detailed in attachment 3 are successfully completed.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. **Contractor Required PMI Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Modification Drawings
4. Mount Photos
5. Mount Mapping Report (for reference only)
6. Analysis Calculations

Exhibit F

Power Density/RF Emissions Report

Site Name: Berlin 3 CT
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW 700	751	4	710	2840	95	0.0113	0.5007	2.26%
VZW CDMA	869	2	402	804	95	0.0032	0.5793	0.55%
VZW Cellular	869	4	679	2716	95	0.0108	0.5793	1.87%
VZW PCS	1980	4	1422	5688	95	0.0227	1.0000	2.27%
VZW AWS	2125	4	1496	5984	95	0.0238	1.0000	2.38%
VZW CBAND	3730	4	6531	26124	95	0.1041	1.0000	10.41%
Total Percentage of Maximum Permissible Exposure								19.74%

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

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

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

Exhibit G

Mount Modification Drawings



MOUNT MODIFICATION DRAWINGS
EXISTING 13.67' PLATFORM

TOWER OWNER: CROWN CASTLE
TOWER OWNER SITE NUMBER: 876382

CARRIER SITE NAME: BERLIN 3 CT
CARRIER SITE NUMBER: 468011
FUZE ID: 16092564

1684 CHAMBERLAIN HWY
BERLIN, CT 06037
HARTFORD COUNTY

LATITUDE: 41.589917° N
LONGITUDE: 72.805333° W

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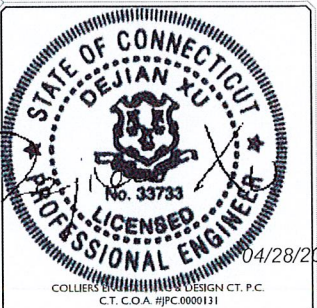
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SCALE: AS SHOWN JOB NUMBER: 22777019A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	04/27/22	ISSUED FOR CONSTRUCTION	PD	DA



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468011
1684 CHAMBERLAIN HWY
BERLIN, CT 06037
HARTFORD COUNTY

Colliers Engineering & Design
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
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SHEET TITLE: TITLE SHEET

SHEET NUMBER: ST-1

DESIGN CRITERIA
<p>WIND LOADS</p> <p>BASIC WIND SPEED (3 SECOND GUST), V = 118 MPH EXPOSURE CATEGORY C TOPOGRAPHIC CATEGORY 1 MEAN BASE ELEVATION (AMSL) = 355.76'</p> <p>ICE LOADS</p> <p>ICE WIND SPEED (3 SECOND GUST), V = 50 MPH ICE THICKNESS = 1.00 IN</p> <p>SEISMIC LOADS</p> <p>SEISMIC DESIGN CATEGORY B SHORT TERM MCER GROUND MOTION, S_s = .200 LONG TERM MCER GROUND MOTION, S_l = .055</p>

PROJECT INFORMATION
<p>APPLICANT/LESSEE</p> <p>COMPANY: VERIZON WIRELESS</p> <p>CLIENT REPRESENTATIVE</p> <p>COMPANY: VERIZON WIRELESS</p> <p>PROJECT MANAGER</p> <p>COMPANY: COLLIERS ENGINEERING & DESIGN CONTACT: PETER ALBANO PHONE: 856.797.0412 E-MAIL: PETER.ALBANO@COLLIERSENGINEERING.COM</p>
<p>CONTRACTOR PMI REQUIREMENTS</p> <p>PMI LOCATION: HTTPS://PMI.VZWSMART.COM SMART TOOL PROJECT #: 10145263 VZW LOCATION CODE (PSLC): 468011 ANALYSIS DATE: 4/27/2022</p>
PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT

SHEET INDEX
SHEET DESCRIPTION
ST-1 TITLE SHEET
SBOM-1 BILL OF MATERIALS
SGN-1 GENERAL NOTES
SCF-1 CLIMBING FACILITY DETAIL
SS-1 MODIFICATION DETAILS
SS-2 MOUNT PHOTOS
SPECIFICATION SHEETS

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BILL OF MATERIALS

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SECTION 1 - VZWSMART KITS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
3	VZWSMART	VZWSMART-P40-27BX072	72" LONG. PIPE 2 1/2 STD (2.875"OD X 0.203" THK)		35	104
3		VZWSMART-PLK6	V-BRACING KIT FOR MONOPOLE	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1.	109	327
6		VZWSMART-MSK7	ANGLE TO ANGLE CROSSOVER KIT		7	42
12		VZWSMART-MSK1	CROSSOVER PLATE		14	168
1		VZWSMART-PLK7	MONOPOLE COLLAR MOUNT ASSEMBLY		150	150

SECTION 2 - OTHER REQUIRED PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
3	-	-	156" LONG. P2 STD	GALVANIZED	48	143
-	-	-	1/2" DIA. U-BOLT	GALVANIZED	-	-
TOTAL:						934

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D:	04/27/22	ISSUED FOR CONSTRUCTION:	PD:	DV:
REV:	DATE	DESCRIPTION	DRAWN BY:	CHECKED BY:

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SHEET NUMBER

SBOM-1

NOTES:

1. THE MANUFACTURERS LISTED ARE THE APPROVED VENDORS FOR THE VZW MOUNT KITS. EACH MANUFACTURER WILL BE AWARE OF WHICH KITS HAVE BEEN THROUGH THE VZW APPROVAL PROCESS AND THEY ARE IN TURN APPROVED TO SELL. PLEASE NOTE THAT THE MATERIAL UTILIZED ON THE MOUNT MODIFICATIONS WILL BE REVIEWED AS A PART OF THE DESKTOP PMI COMPLETED BY THE SMART TOOL VENDOR. IT WILL BE REQUIRED THAT THE VZW KITS SPECIFIED ARE UTILIZED IN THE MODIFICATIONS.
2. ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

VZWSMART KITS - APPROVED VENDORS

COMMSCOPE	
CONTACT	SALVADOR ANGUIANO
PHONE	(817) 304-7492
EMAIL	SALVADOR.ANGUIANO@COMMSCOPE.COM
WEBSITE	WWW.COMMSCOPE.COM
METROSITE FABRICATORS, LLC	
CONTACT	KENT RAMEY
PHONE	(706) 335-7045 (O), (706) 982-9788 (M)
EMAIL	KENT@METROSITELLC.COM
WEBSITE	METROSITEFABRICATORS.COM
PERFECTVISION	
CONTACT	WIRELESS SALES
PHONE	(844) 887-6723
EMAIL	WWW.PERFECT-VISION.COM
WEBSITE	WIRELESSALES@PERFECT-VISION.COM
SABRE INDUSTRIES, INC.	
CONTACT	ANGIE WELCH
PHONE	(866) 428-6937
EMAIL	AKWELCH@SABREINDUSTRIES.COM
WEBSITE	WWW.SABRESITESOLUTIONS.COM
SITE PRO 1	
CONTACT	PAULA BOSWELL
PHONE	(972) 236-9843
EMAIL	PAULA.BOSWELL@VALMONT.COM
WEBSITE	WWW.SITEPRO1.COM

VZWSMART KITS - APPROVED VENDORS

NEWAVE	
CONTACT	NEWAVE SALES TEAM
PHONE	(971) 239-4762
EMAIL	SALES@NEWAVETC.COM
WEBSITE	WWW.NEWAVETC.COM
BETTER METAL, LLC	
CONTACT	DAVID STANSBERRY
PHONE	(615) 535-0990 (O), (615) 631-2520 (M)
EMAIL	DLS@BETTERMETAL.COM
WEBSITE	WWW.BETTERMETAL.COM

PROJECT NOTES

- SEE MODIFICATION NOTES
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- SINCE THE CELL SITE MAY BE 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 REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
- NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).

GENERAL NOTES

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
- CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK, ORDERING MATERIAL, AND PREPARING OF SHOP DRAWINGS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
- ALL CONSTRUCTION MEANS AND METHODS, INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSITIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSITIA-322 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
- WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE

- CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
- ALL INSTALLATIONS PERFORMED ON THIS STRUCTURE SHALL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, ANSITIA-322.
 - CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
 - CONNECTIONS BETWEEN ITEMS SUPPORTED BY THE STRUCTURE AND THE STRUCTURE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH CONNECTIONS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS DURING SHOP DRAWING REVIEW.
 - DO NOT SCALE DRAWINGS.
 - DO NOT USE THESE DRAWINGS FOR ANY OTHER SITE.
 - ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZE AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
 - THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.

STRUCTURAL STEEL

- DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
 - SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
 - AISC CODE OF STANDARD PRACTICE
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE
- ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
 - SUBMIT SHOP DRAWINGS TO
PETER.ALBANO@COLLIERSENGINEERING.COM
 - PROVIDE MASER CONSULTING PROJECT # AND MASER CONSULTING PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
- DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- CONTRACTOR SHALL PROTECT CUT ENDS OF ALL FIELD-CUT STEEL WITH TWO (2) COATS OF COLD GALVANIZATION (ZINGA OR ZINC COTE).
- ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.
- WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
- FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.

- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINGA OR ZINC COTE), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
- ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

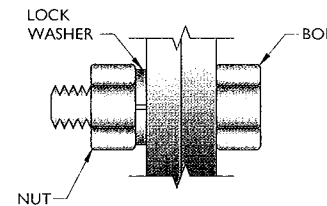
WELDING NOTES

- ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.0 (LATEST EDITION). THIS SHALL INCLUDE A CERTIFIED WELD INSPECTION (CWI) FOR ACCEPTANCE OR REJECTION OF ALL WELDING OPERATIONS, PRE, DURING, AND POST INSTALLATION, USING THE ACCEPTANCE CRITERIA OF AWS D1.1.
- CONTRACTOR IS RESPONSIBLE FOR COMMISSIONING A THIRD PARTY CERTIFIED WELD INSPECTOR (CWI) THROUGHOUT THE ENTIRETY OF THE PROJECT. A PASSING CWI REPORT SHALL BE PROVIDED TO THE ENGINEER UPON COMPLETION OF THE PROJECT.
- THE CERTIFIED WELD INSPECTOR SHALL INDICATE, IN A WRITTEN CWI REPORT, THAT ALL WELDING OPERATIONS PRE, DURING, AND POST INSTALLATION WERE CONDUCTED IN ACCORDANCE WITH AWS D1.1 WITH PHOTOGRAPHS AND DOCUMENTATION SUPPORTING THE ACCEPTANCE OR REJECTION OF ALL WELDING. ALL CWI WELD INSPECTION DOCUMENTATION AND PHOTOS SHALL BE SUBMITTED DURING THE PMI.
- IN CASES WHERE A WELD IS SPECIFIED BETWEEN TWO MEMBERS IN WHICH THERE IS A GAP IN BETWEEN, THE WELD IS TO BE BUILT-UP SUCH THAT THE SIZE OF WELD ON THE MEMBER IS EQUAL TO THAT SHOWN IN THE DRAWINGS.
- OXY FUEL GAS WELDING OR BRAZING IS STRICTLY PROHIBITED. SPECIFICALLY, NO TORCH CUTTING IS PERMITTED ON SITE. ALL HOLES SHALL BE CUT WITH A GRINDER.
- CONTRACTOR SHALL EXERCISE CAUTION WHEN WELDING A GALVANIZED SURFACE.
- CONTRACTOR SHALL HAVE A FIRE PROTECTION PLAN IN PLACE THAT CONFORMS WITH ALL OSHA, ANSII/ASSP A10.48, ANSI Z49.1, AND LOCAL JURISDICTIONAL REQUIREMENTS.

BOLT SCHEDULE (IN.)				
BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 11/16	7/8	1 1/2
5/8	11/16	11/16 x 7/8	1 1/8	1 7/8
3/4	13/16	13/16 x 1	1 1/4	2 1/4
7/8	15/16	15/16 x 1 1/8	1 1/2	2 5/8
1	1 1/16	1 1/16 x 1 5/16	1 3/4	3

WORKABLE GAGES (IN.)

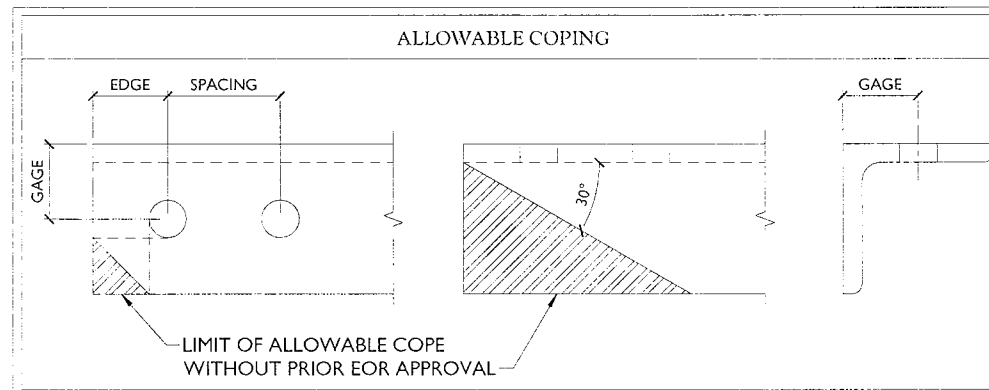
LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8



TYP. BOLT ASSEMBLY

NOTES:

- ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
- MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.



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DATE: 04/27/22	ISSUED FOR CONSTRUCTION				
REV	DATE	DESCRIPTION	PD	DR	CHKD BY

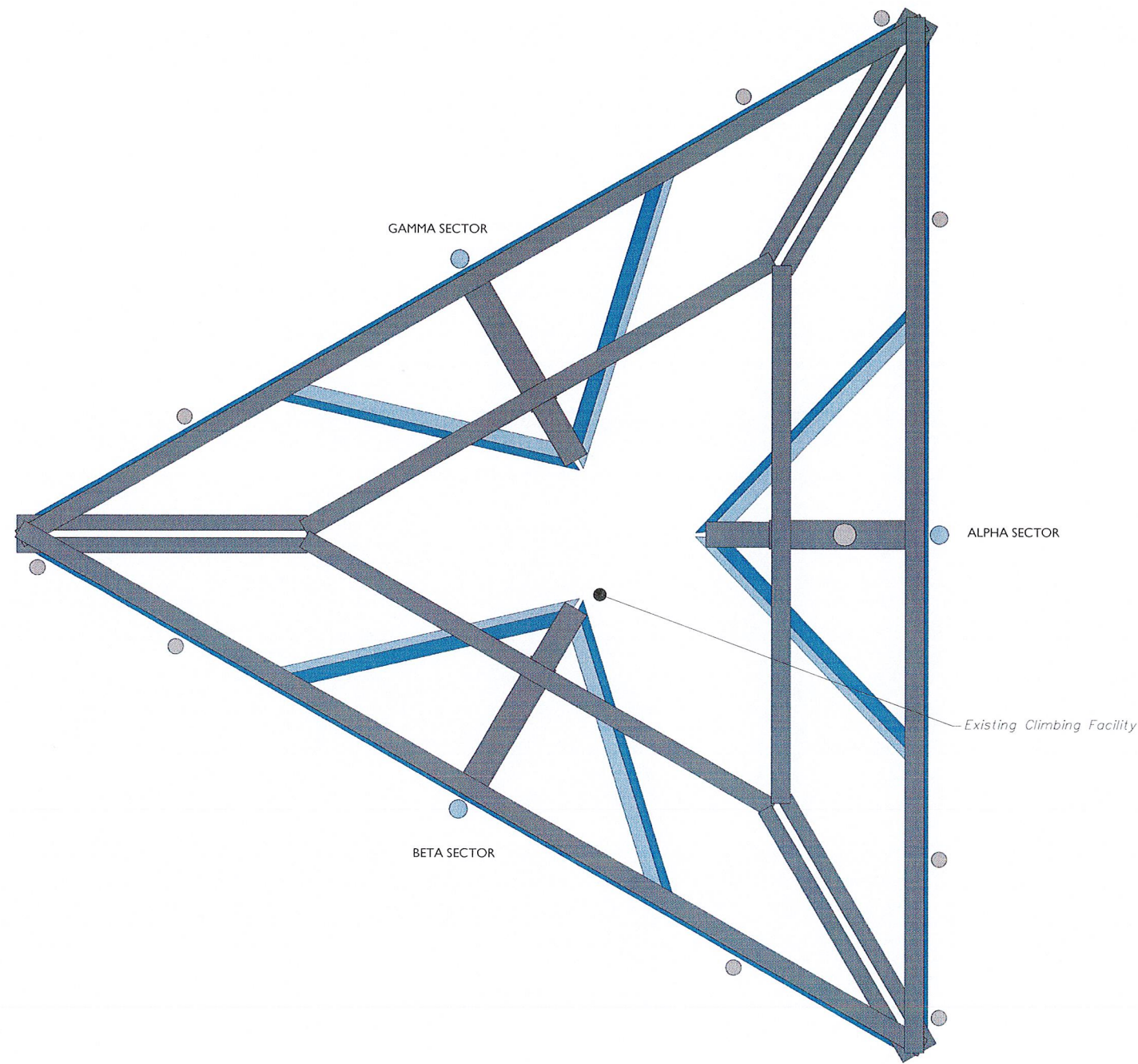


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BERLIN 3 CT
468011
1684 CHAMBERLAIN HWY
BERLIN, CT 06037
HARTFORD COUNTY

Colliers Engineering & Design
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.326.0800
100 JAMES HUGHES DRIVE, SUITE 200, STAMFORD, CT 06901
PHONE: 203.326.0800

GENERAL NOTES
SHEET NUMBER: SGN-1



1

CLIMBING FACILITY LOCATION

SCALE: N.T.S.

STRUCTURAL NOTES:

1. PER THE MOUNT MAPPING COMPLETED BY ONSIGHT SERVICES ON 4/10/2022, THE SAFETY CLIMB AND CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (94'-0") ARE IN GOOD CONDITION. COLLIERS ENGINEERING & DESIGN DOES NOT WARRANT THIS INFORMATION.
2. INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB, OR ANY SYSTEM INSTALLED ON THE STRUCTURE. TIMELY NOTICE AND DOCUMENTATION SHALL BE PROVIDED BY CONTRACTORS TO THE EOR (OF STRUCTURAL DESIGN) IF AN OBSTRUCTION WAS REQUIRED TO MEET THE RF SYSTEM DESIGN REQUIREMENTS AND PERFORMANCES.



CLIMBING FACILITY PHOTO

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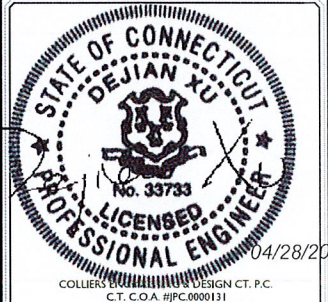
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 HARTFORD COUNTY

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 1055 Washington Boulevard
 Stamford, CT 06901
 Phone: 203.324.0800
 COLLIERS ENGINEERING & DESIGN CT, P.C.
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SHEET TITLE:
CLIMBING FACILITY DETAIL

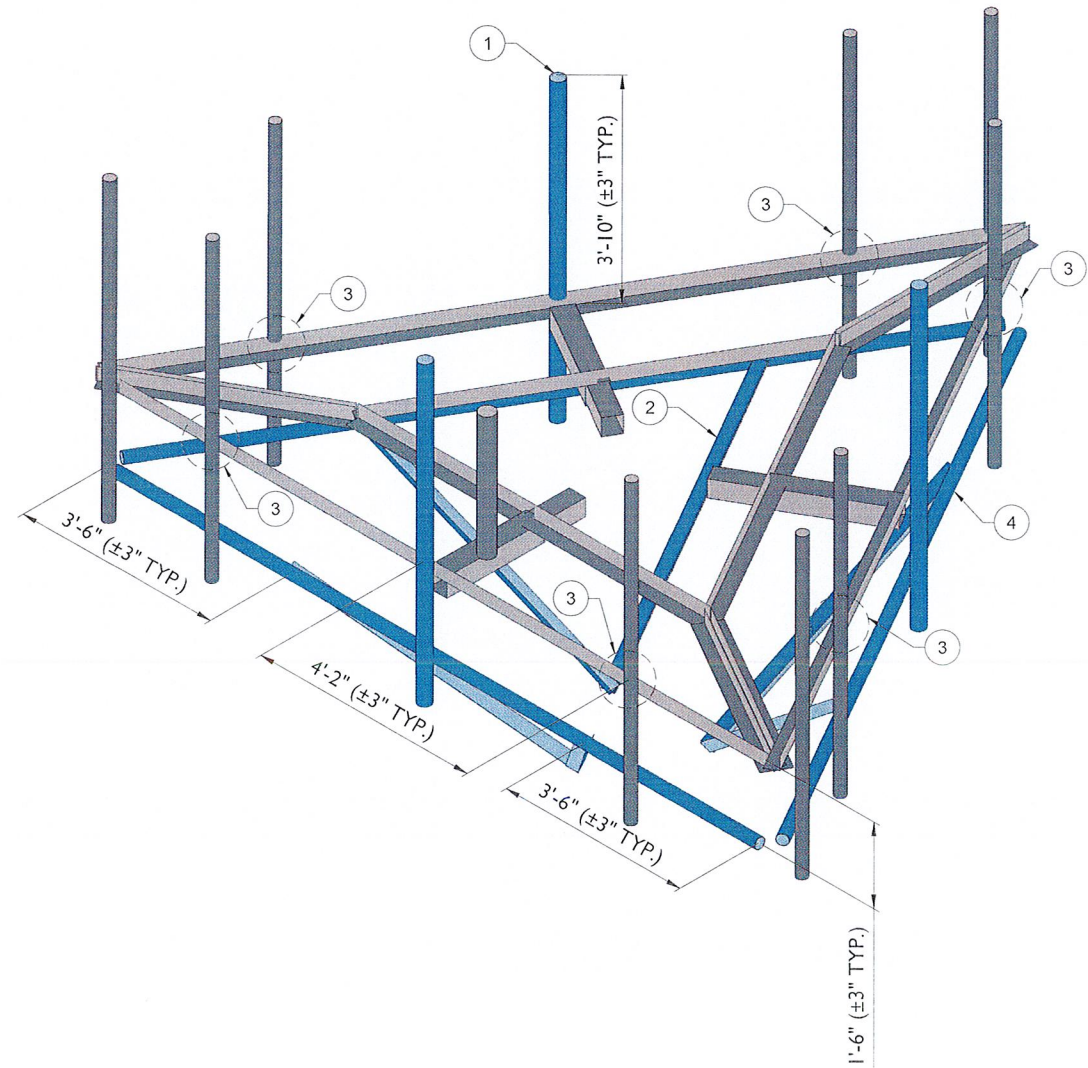
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SCF-1

LEGEND:

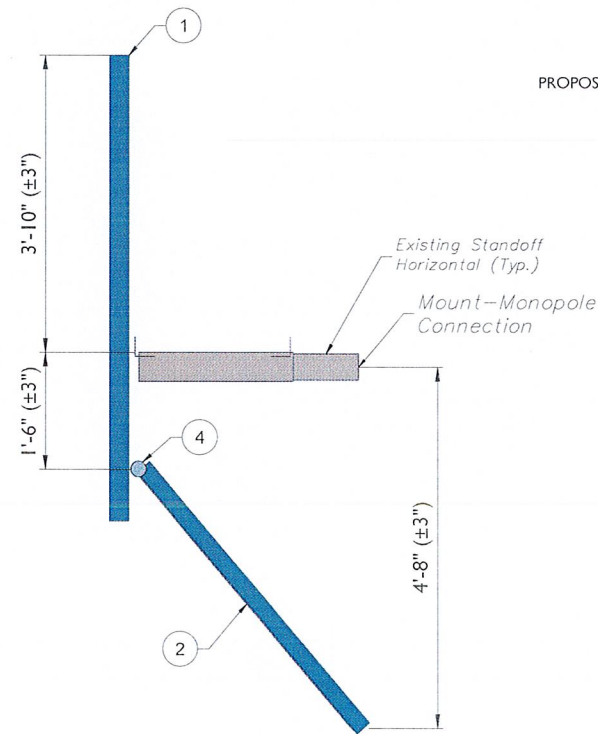
- PROPOSED
- RELOCATED
- EXISTING

MOUNT MODIFICATION SCHEDULE				
NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1	94'-0"	3	PROPOSED 72" LONG, P2 1/2 STD (PART #: VZWSMART-P40-278X072)	CONTRACTOR SHALL REMOVE AND REPLACE EXISTING MOUNT PIPE AT POSITION 2 (AS SEEN FROM BEHIND THE MOUNT) IN ALL SECTORS. CONNECT NEW MOUNT PIPE TO EXISTING WELDED PLATE ON FACE HORIZONTAL WITH (2) 1/2" DIA. U-BOLTS.
2		3	PROPOSED V-BRACING KIT FOR MONOPOLE (PART #: VZWSMART-PLK6)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1. CONNECT OTHER END OF V-BRACING KIT TO MONOPOLE COLLAR MOUNT ASSEMBLY (PART #: VZWSMART-PLK7).
3		6	PROPOSED ANGLE TO ANGLE CROSSOVER KIT (PART #: VZWSMART-MSK7)	CONTRACTOR SHALL REMOVE AND REPLACE EXISTING FACE HORIZONTAL TO MOUNT PIPE CONNECTION ASSEMBLY AT POSITION 1 AND 3 (AS SEEN FROM BEHIND THE MOUNT) IN ALL SECTORS. INSTALL PROPOSED ANGLE TO ANGLE CROSSOVER KIT (PART #: VZWSMART-MSK7) AS SHOWN IN DETAIL 3/SS-1. CONTRACTOR SHALL DRILL HOLES ON FACE HORIZONTAL AS REQUIRED.
4		3	156" LONG, P2 STD SUPPORT RAIL	CONNECT NEW SUPPORT RAIL TO ALL EXISTING AND PROPOSED VERTICAL MOUNT PIPES WITH CROSSOVER PLATES (PART #: VZWSMART-MSK1).

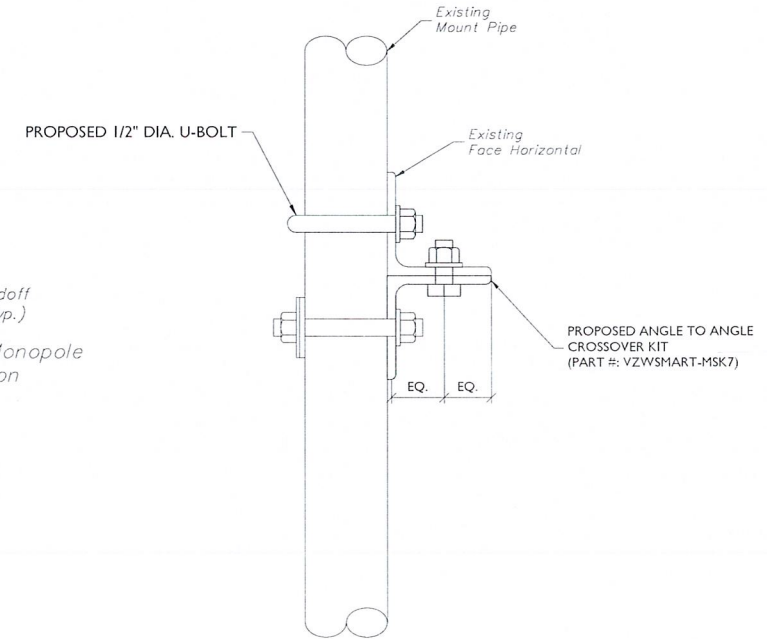
NOTES:
 MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.
 THREADED ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINGA OR ZINC KOTE).



1 PROPOSED ISOMETRIC VIEW
SCALE : N.T.S.



2 PROPOSED SIDE ELEVATION VIEW (TYP. ALL SECTORS)
SCALE : N.T.S.



3 MOUNT PIPE CONNECTION DETAIL (TYP. POSITION 1 AND 3)
SCALE : N.T.S.

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REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY

STATE OF CONNECTICUT
 DEJIAN XU
 No. 33733
LICENSED PROFESSIONAL ENGINEER
 04/28/2022
 COLLIER ENGINEERING & DESIGN CT, P.C.
 C.T. C.O.A. #PC 000131

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SHEET TITLE:
MODIFICATION DETAILS

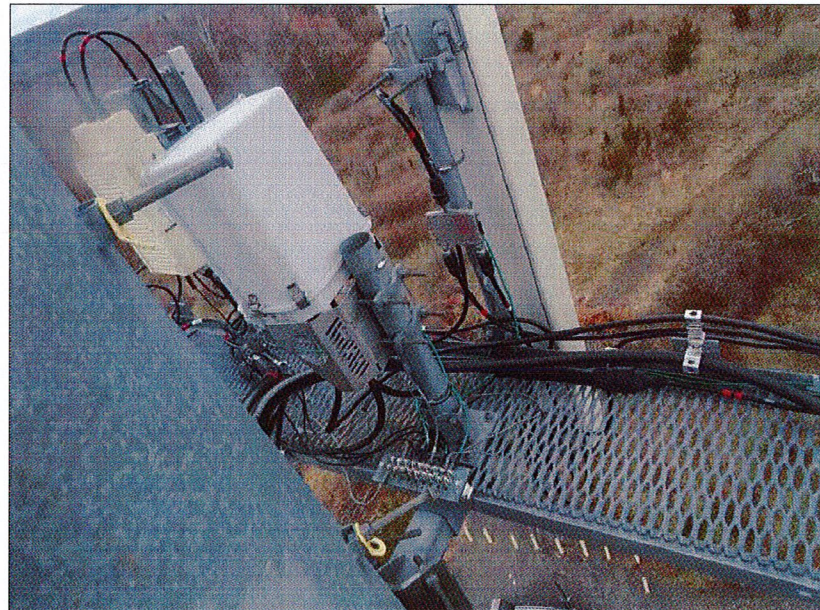
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SS-1



MOUNT PHOTO 1



MOUNT PHOTO 2



MOUNT PHOTO 3

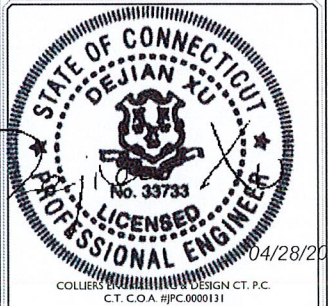


MOUNT PHOTO 4



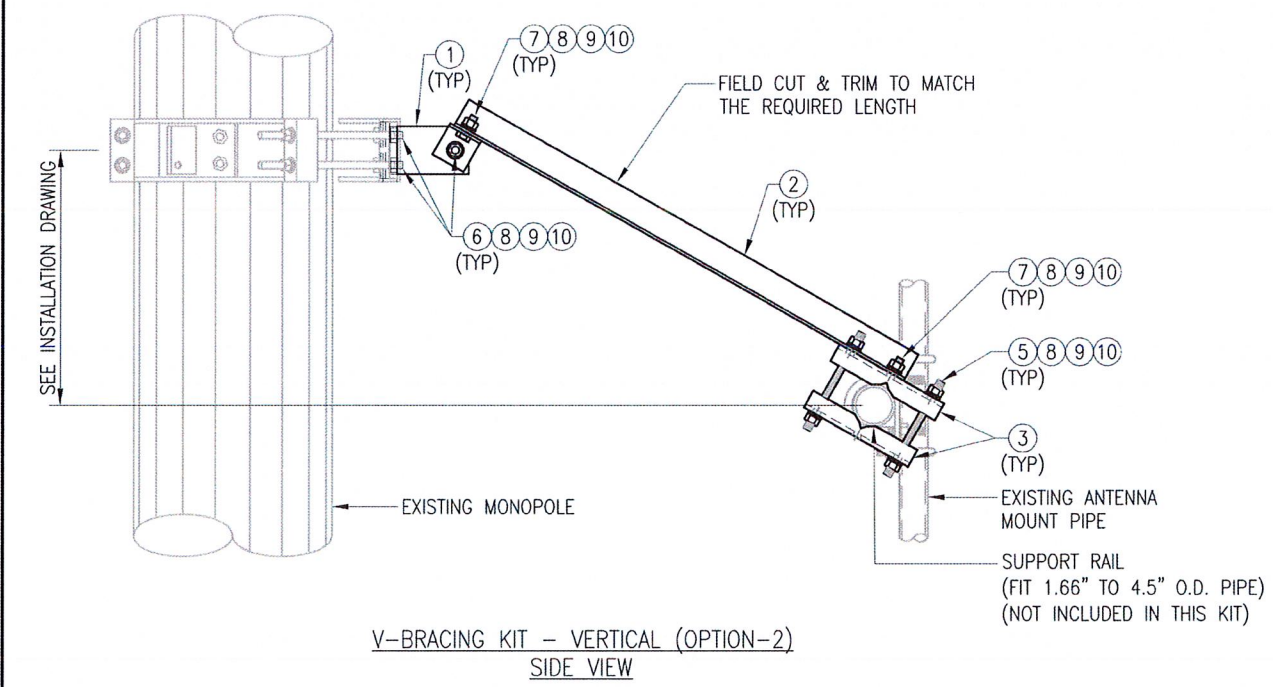
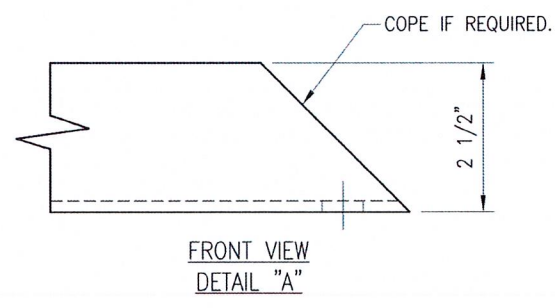
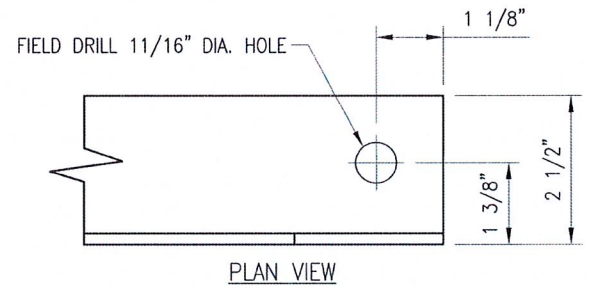
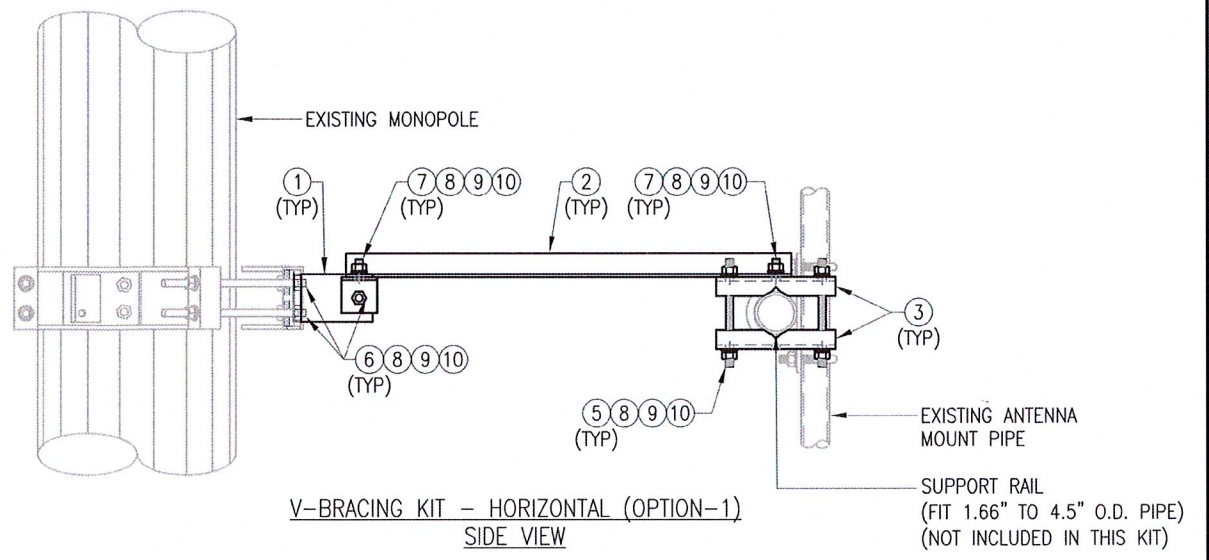
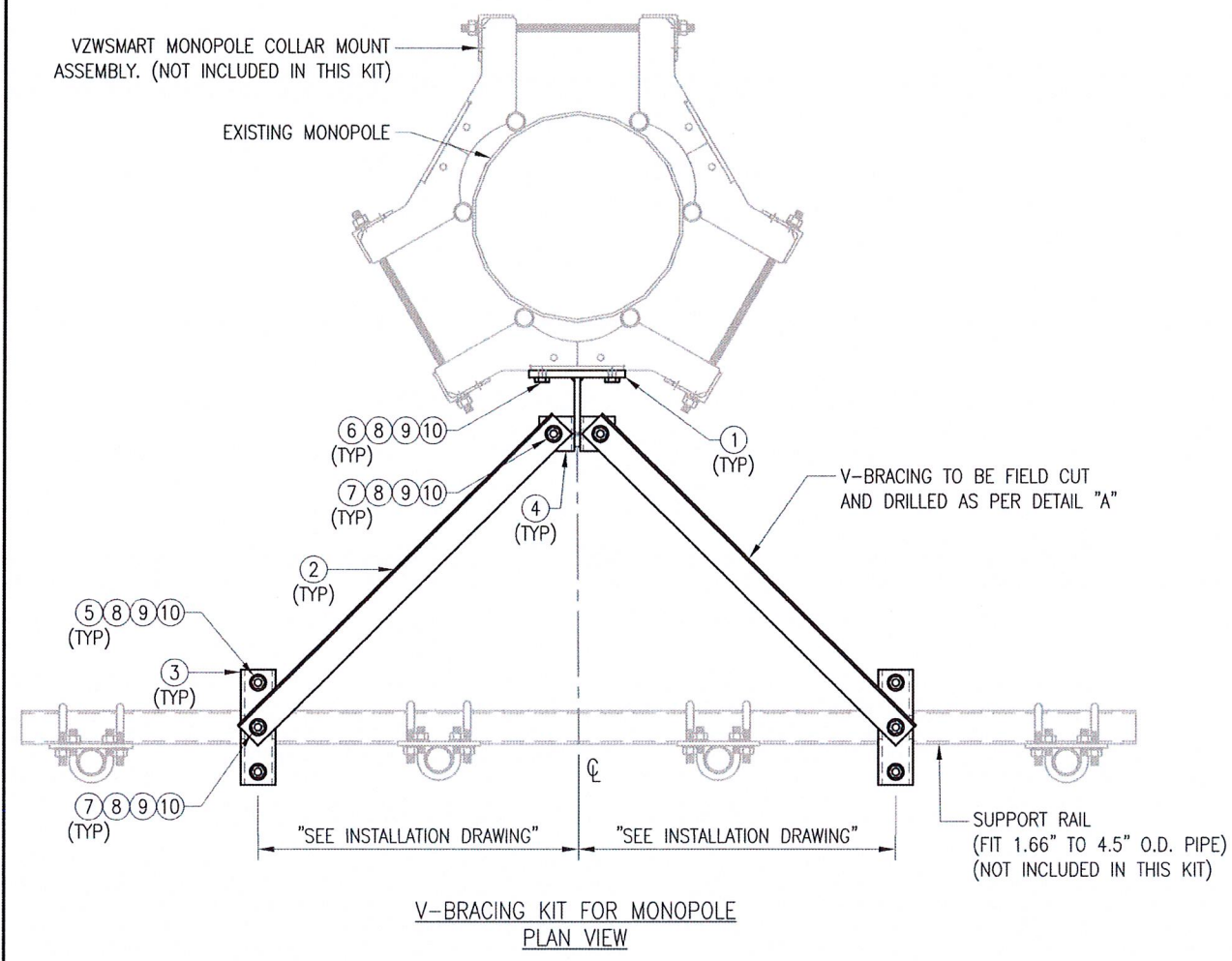
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0	04/27/22	ISSUED FOR CONSTRUCTION	PD DR



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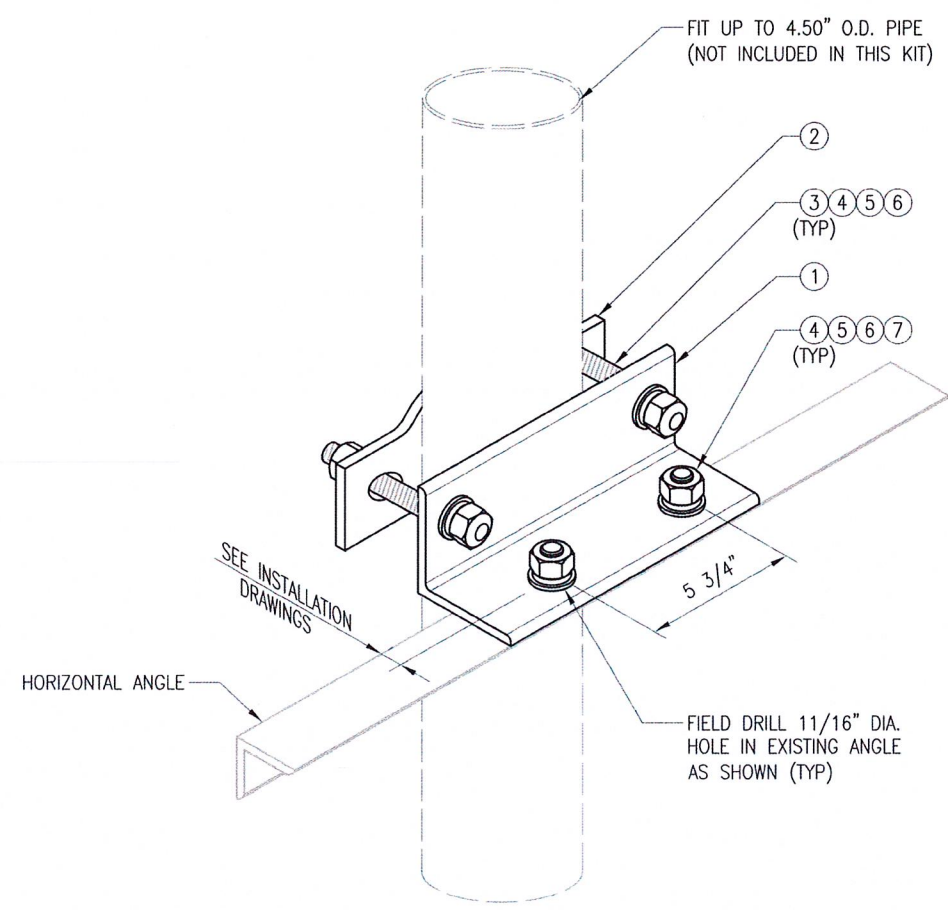
SITE NAME:
 BERLIN 3 CT
 468011
 1684 CHAMBERLAIN HWY
 BERLIN, CT 06037
 HARTFORD COUNTY



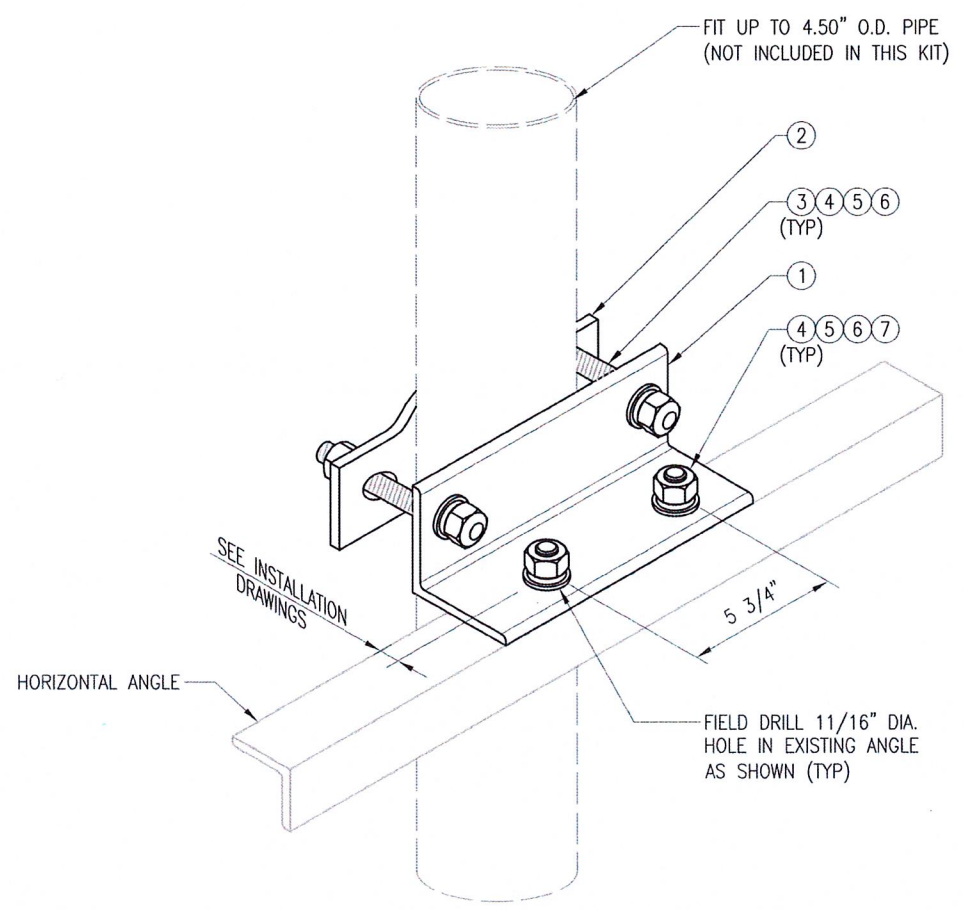
VZWSMART-PLK6 (V-BRACING KIT FOR MONOPOLE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	BRKW-6A	WELDMENT BRACKET	PLK6-F1	16
2	2	L252525-8	L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36	PLK6-F2	67
3	4	BP6875-10	PL 3/8" X 6 7/8" X 10" A36 BENT PLATE	PLK6-F2	20
4	2	AL-333	L 3" X 3" X 1/4" X 3" A36	PLK6-F2	3
5	4	---	THREADED ROD 5/8" DIA. X 10" F1554-36 HDG	---	---
6	5	---	BOLT 5/8" X 2 1/4" A325	---	---
7	4	---	BOLT 5/8" X 1 3/4" A325	---	---
8	17	FW-625	5/8" HDG USS FLAT WASHER	---	2
9	17	LW-625	5/8" HDG LOCK WASHER	---	0
10	17	NUT-625	5/8" HDG HEX NUT	---	2
GALVANIZED WT					109

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.

DRAWN BY: FL		CHECKED BY: KL/BT	
REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	FL	04/13/21
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SHEET TITLE:			
VZWSMART-PLK6 V-BRACING KIT FOR MONOPOLE			
SHEET NUMBER:		REV #:	
VZWSMART-PLK6		0	



OPTION 1



OPTION 2

ANGLE TO ANGLE CROSSOVER KIT

VZSMART-MSK7 (ANGLE TO ANGLE CROSSOVER KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	L3325-0.7	L 3" X 3" X 1/4" X 0'-8" A36	MSK7-F2	3.33
2	1	VCP	PL 1/2" X 2" X 8 5/8" A36 BENT PLATE	MSK7-F1	2.4
3	2	---	BOLT 5/8" DIA. X 6" FULL THREAD SAE GR 5	---	---
4	4	NUT-625	5/8" HDG HEX NUT	---	0
5	6	FW-625	5/8" HDG USS FLAT WASHER	---	0
6	4	LW-625	5/8" HDG LOCK WASHER	---	0
7	2	---	BOLT 5/8" X 2" A325	---	0
GALVANIZED WT					7

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. USE PROVIDED ADDITIONAL FLAT WASHERS FOR CONNECTING TO 3/16" THICK HORIZONTAL ANGLE

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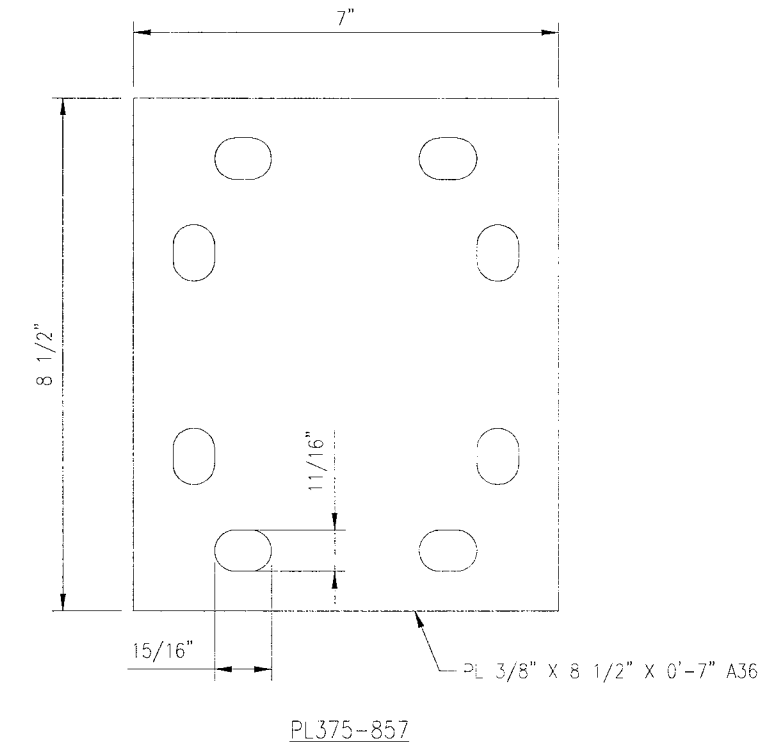
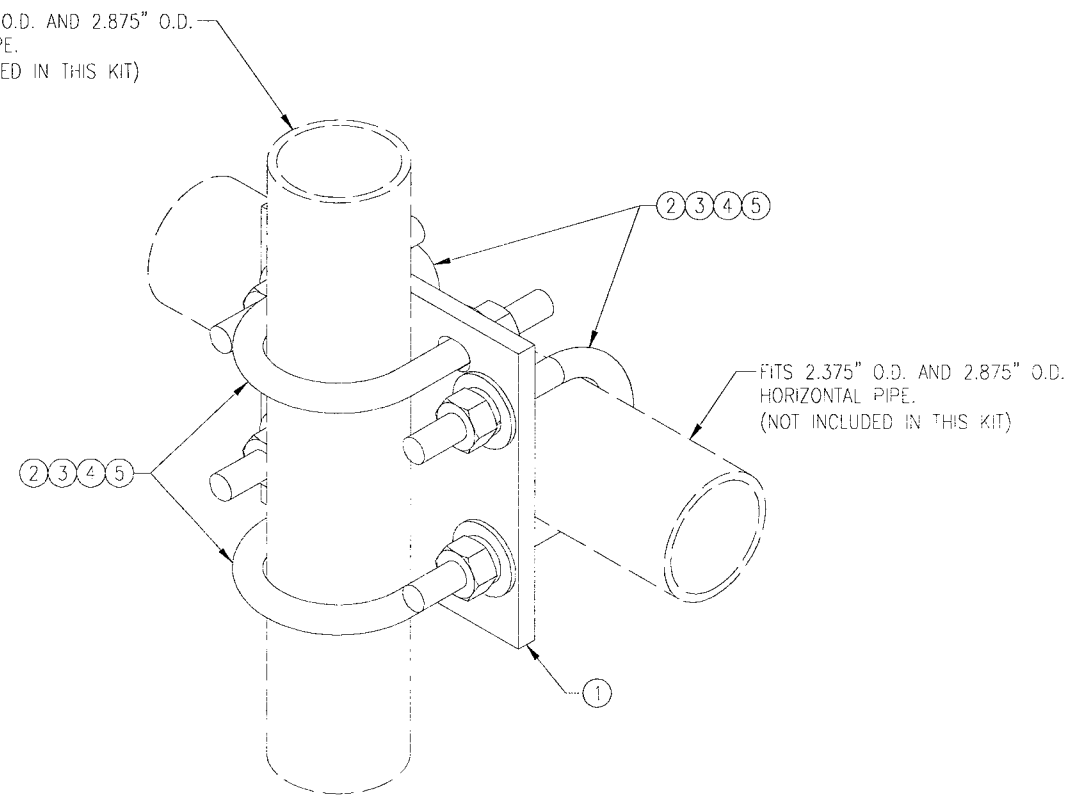
REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	SK	05/08/20
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SHEET TITLE:
VZSMART-MSK7
ANGLE TO ANGLE
CROSSOVER KIT

SHEET NUMBER: VZSMART-MSK7
REV #: 0



FITS 2.375" O.D. AND 2.875" O.D.
VERTICAL PIPE.
(NOT INCLUDED IN THIS KIT)

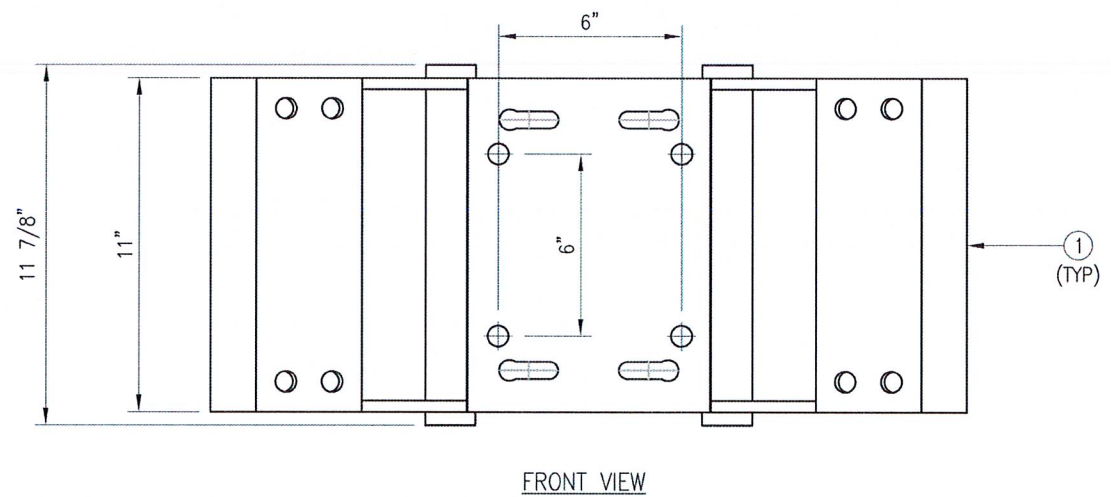
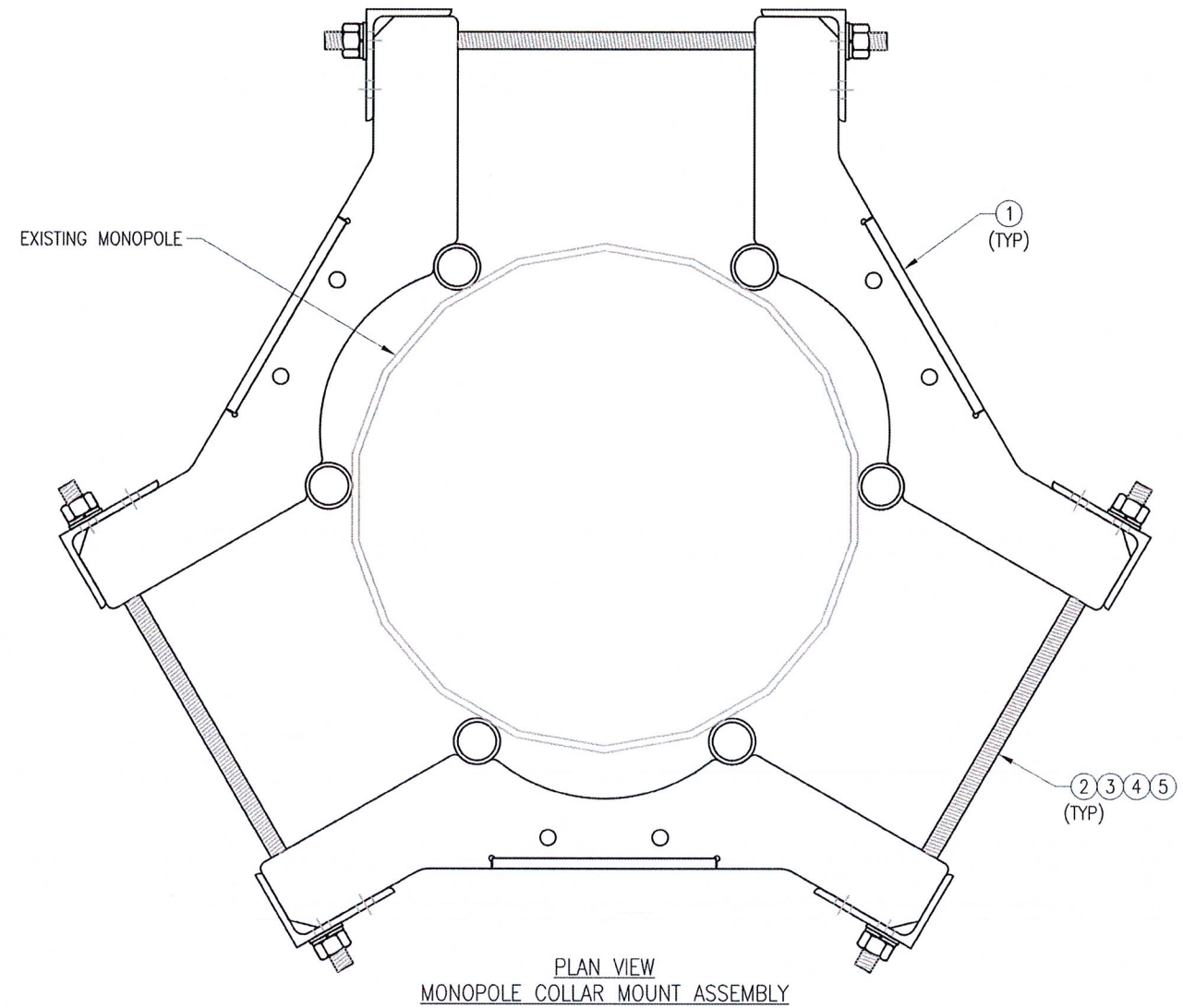


DRAWN BY: H.R.		CHECKED BY: HMA	
REV	DESCRIPTION	BY	DATE
△	FIRST ISSUE	H.R.	05/08/20
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VZSMART-MSK1 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-857	PL 3/8" X 8 1/2" X 0'-7" A36	MSK1-F1	6
2	4	MS02-625-300-500	RU-BOLT 5/8" X 3" LW. X 5" LL. A36 (OR EQUIV.)	RBC-1	5
3	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	8	LW-625	5/8" HDG LOCK WASHER	---	0
5	8	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					14

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.

SHEET TITLE:	
VZSMART-MSK1 CROSSOVER PLATE	
SHEET NUMBER:	REV #:
VZSMART-MSK1	0



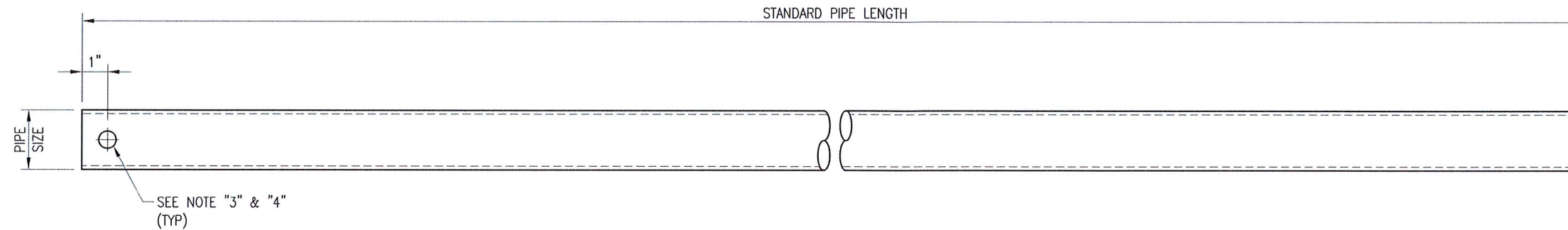
- NOTES:
1. FIT 12" TO 45" DIA MONOPOLE.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT	
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147	
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---	---	
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1	
4	12	LW-625	5/8" HDG LOCK WASHER	---	0	
5	12	NUT-625	5/8" HDG HEX NUT	---	1	
					GALVANIZED WT	150

DRAWN BY: BT		CHECKED BY: HMA/KW	
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/11/20
2			
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SHEET TITLE:
 VZSMART-PLK7
 MONOPOLE COLLAR
 MOUNT ASSEMBLY

SHEET NUMBER: VZSMART-PLK7	REV #: 0
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VZWSMART Standard Pipe		
VZWSMART Number	Size	Length
P40-238X048	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	48"
P40-238X072	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	72"
P40-238X096	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	96"
P40-238X120	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	120"
P40-238X126	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	126"
P40-238X150	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	150"
P40-238X174	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	174"
P40-278X048	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	48"
P40-278X072	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	72"
P40-278X096	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	96"
P40-278X120	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	120"
P40-278X126	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	126"
P40-278X150	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	150"
P40-278X174	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	174"
P40-312X048	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	48"
P40-312X072	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	72"
P40-312X126	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	126"
P40-312X150	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	150"
P40-312X174	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	174"

NOTE:
APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION
PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE.
SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

- NOTES:
1. ALL PIPE GRADE A53-B OR BETTER.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.
 3. ALL HOLES ARE 11/16" DIA. U.N.O
 4. HOLES MAY OR MAY NOT BE PRESENT, DEPEND UPON MANUFACTURE DISCRETION.
 5. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA OR ZINC COTE PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	08/04/21
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SHEET TITLE:

VZWSMART
STANDARD PIPE

SHEET NUMBER: REV #:

VZWSMART-PIPE 0