



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: HIGHWAY 441 NORTH

ATC SITE NUMBER: 97139

VERIZON WIRELESS SITE NAME: HIGHWAY 441

VERIZON WIRELESS SITE NUMBER: 228804

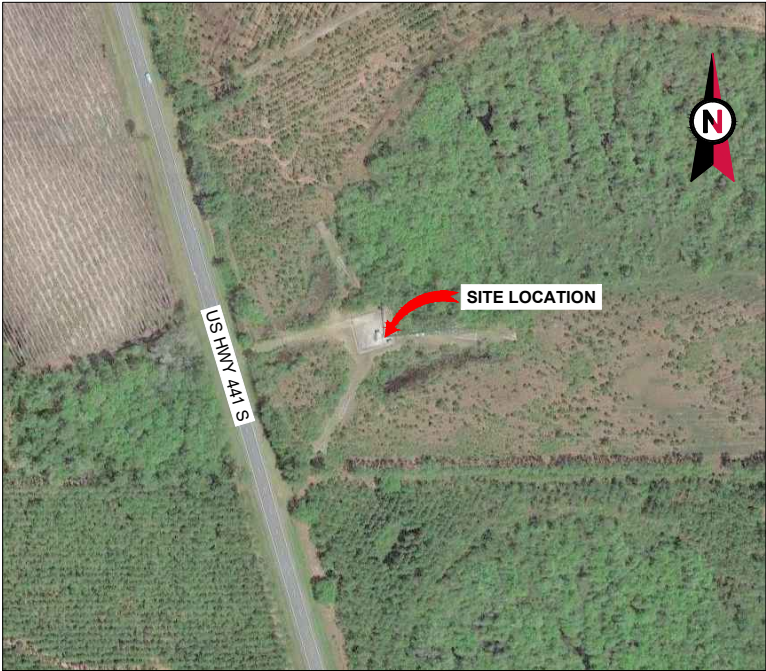
VERIZON WIRELESS FUZE PID: 16276872

VERIZON WIRELESS MDG LOCATION CODE:

5000125492

SITE ADDRESS: 22535 N US HWY 441

WHITE SPRINGS, FL 32096-7100



LOCATION MAP

VERIZON WIRELESS
ANTENNA AMENDMENT DRAWINGS

COMPLIANCE CODE		PROJECT SUMMARY		PROJECT DESCRIPTION		SHEET INDEX				
<p>ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.</p> <p>1. 2023 FLORIDA BUILDING CODE, 8TH EDITION 2. ANSI/TIA-222-H 3. 8TH EDITION FLORIDA FIRE PREVENTION CODE 4. 2020 NATIONAL ELECTRICAL CODE (NFPA 70) 5. CITY/COUNTY ORDINANCES</p> <p>DESIGN CRITERIA FOR TOWER STRUCTUAL ANALYSIS BY ATC DATED AUGUST 30, 2024:</p> <p>ULTIMATE WIND SPEED: 117 MPH (3-SECOND GUST) SERVICE WIND SPEED: 60 MPH RISK CATEGORY: II EXPOSURE CATEGORY: B TOPOGRAPHIC CATEGORY: 1</p>	<p><u>SITE ADDRESS:</u> 22535 N US HWY 441 WHITE SPRINGS, FL 32096-7100 COUNTY: COLUMBIA <u>REGISTERED COORDINATES:</u> LATITUDE: 30° 30' 24.001" N NAD LONGITUDE: 82° 39' 59" W <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 30.506667 LONGITUDE: -82.666389 GROUND ELEVATION: 122' AMSL <u>ZONING INFORMATION:</u> JURISDICTION: COLUMBIA COUNTY PARCEL ID: 121N1601511000</p>		<p>VERIZON WIRELESS IS PROPOSING THE FOLLOWING WORK TO BE COMPLETED ON AN EXISTING 300' GUYED TOWER:</p> <p><u>TOWER WORK:</u> REMOVE (9) ANTENNA(S), (6) TMA(s), AND (2) 1-5/8" COAX CABLE(S).</p> <p>RELOCATE (3) 4449 RRU(s) FROM GROUND TO TOWER.</p> <p>INSTALL MOUNT MODIFICATION(S), (9) ANTENNA(S), (3) RRU(s), (1) OVP(s), AND (2) 6x12 HYBRID (1.43" HYBRID) CABLE(S).</p> <p>EXISTING (2) OMNI ANTENNA(S), (3) DISH(ES), (2) EW52 ELLIPTICAL CABLE(S), (2) EW90 ELLIPTICAL CABLE(S), (12) 1-5/8" COAX CABLE(S) TO REMAIN.</p> <p><u>GROUND WORK:</u> REMOVE (1) CDMA CABINET(S), (1) 6201 CABINET(S), AND BATTERY(IES).</p> <p>INSTALL (1) GE INFINITY M DC POWER PLANT(S), (1) OVP12(s), (1) 19" RACK(S), (1) BATTERY STRING(S), AND (1) UPCONVERTER(S).</p>	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:		
	G-001	TITLE SHEET		1	10/02/24	BJO				
	G-002	GENERAL NOTES		1	10/02/24	BJO				
	C-001	OVERALL SITE PLAN		1	10/02/24	BJO				
	C-101	EXISTING DETAILED SITE PLAN		1	10/02/24	BJO				
	C-102	PROPOSED DETAILED SITE PLAN		1	10/02/24	BJO				
	C-201	TOWER ELEVATION		1	10/02/24	BJO				
	C-401	ANTENNA INFORMATION & SCHEDULE		1	10/02/24	BJO				
	C-501	CONSTRUCTION DETAILS		1	10/02/24	BJO				
	E-101	EXISTING PANEL SCHEDULE		1	10/02/24	BJO				
E-102	PROPOSED PANEL SCHEDULE	1	10/02/24	BJO						
E-103	ONE-LINE DIAGRAM	1	10/02/24	BJO						
E-104	ELECTRICAL DETAILS	1	10/02/24	BJO						
E-105	ELECTRICAL DETAILS	1	10/02/24	BJO						
E-501	GROUNDING DETAILS	1	10/02/24	BJO						
				R-601 - R-604	SUPPLEMENTAL					
					MOUNT MODIFICATION DRAWINGS					
				CONTRACTOR PMI REQUIREMENTS						
				PMI ACCESSED AT:		HTTPS://PMI.VZWSMART.COM				
				SMART TOOL VENDOR PROJECT NUMBER:		10241954				
				VZW LOCATION CODE (PSLC):		228804				
				***PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT						
				MOUNT MODIFICATION REQUIRED:		YES				
				VZW APPROVED SMART KIT VENDORS:		REFER TO MOUNT MODIFICATION DRAWINGS PAGES FOR VZW SMART KIT APPROVED VENDORS				

<p>UTILITY COMPANIES</p> <p>POWER COMPANY: SUWANNEE VALLEY ELEC COOP PHONE: (800) 447-4509</p> <p>TELEPHONE COMPANY: AT&T PHONE: (800) 331-0500</p>		<p><u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801</p> <p><u>ENGINEER:</u> TEP OPCO, LLC 326 TRYON ROAD RALEIGH, NC 27603</p>		<p><u>APPLICANT:</u> VERIZON WIRELESS</p> <p><u>PROPERTY OWNER:</u> CARTER SARA JANE 177 NW MADISON ST LAKE CITY, FL 32055</p>	
		PROJECT LOCATION DIRECTIONS			
		IN FL ON I-10: TAKE EXIT 303 AND TRAVEL NORTH APP. 18.7 MILES TO TOWER ON THE RIGHT.			

Always call 811 two full business days before you dig

Sunshine811.com

www.sunshine811.com



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO, LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO, LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
D	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC
FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

TITLE SHEET

SHEET NUMBER: G-001	REVISION: 1
-------------------------------	-----------------------

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, VERIZON WIRELESS "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL

A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)

B. AC/TELCO INTERFACE BOX (PPC)

C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)

D. TOWERS, MONOPOLES

E. TOWER LIGHTING

F. GENERATORS & LIQUID PROPANE TANK

G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING

H. ANTENNAS (INSTALLED BY OTHERS)

I. TRANSMISSION LINE

J. TRANSMISSION LINE JUMPERS

K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS

L. TRANSMISSION LINE GROUND KITS

M. HANGERS

N. HOISTING GRIPS

O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF VERIZON WIRELESS TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE VERIZON WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON WIRELESS REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON WIRELESS REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH VERIZON WIRELESS AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL

INSTALL ALL ITEMS PROVIDED.

22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY VERIZON WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT. IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29. COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
31. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
32. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON WIRELESS REP. ANY WORK FOUND BY THE VERIZON WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
33. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
34. VERIZON WIRELESS FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON WIRELESS WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
35. VERIZON WIRELESS OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO VERIZON WIRELESS OR THEIR ARCHITECT/ENGINEER.
- SPECIAL CONSTRUCTION
- ANTENNA INSTALLATION NOTES:
1. WORK INCLUDED:

A. ANTENNA AND COAXIAL/HYBRID CABLES ARE FURNISHED BY VERIZON WIRELESS UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.

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

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

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.

E. INSTALL COAXIAL/HYBRID CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL/HYBRID CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
2. ANTENNA AND COAXIAL/HYBRID CABLE GROUNDING:

A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE

WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

- B. ALL COAXIAL/HYBRID CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL/HYBRID CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

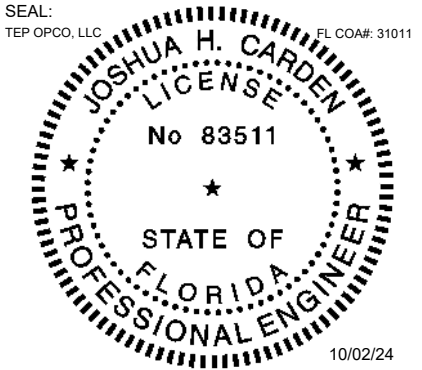
TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
<div>A</div>	PRELIMINARY	PSG	08/30/24
<div>B</div>	90% CONSTRUCTION	SSP	09/19/24
<div>0</div>	100% CONSTRUCTION	BJO	09/30/24
<div>1</div>	100% CONSTRUCTION	BJO	10/02/24
<div></div>			

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



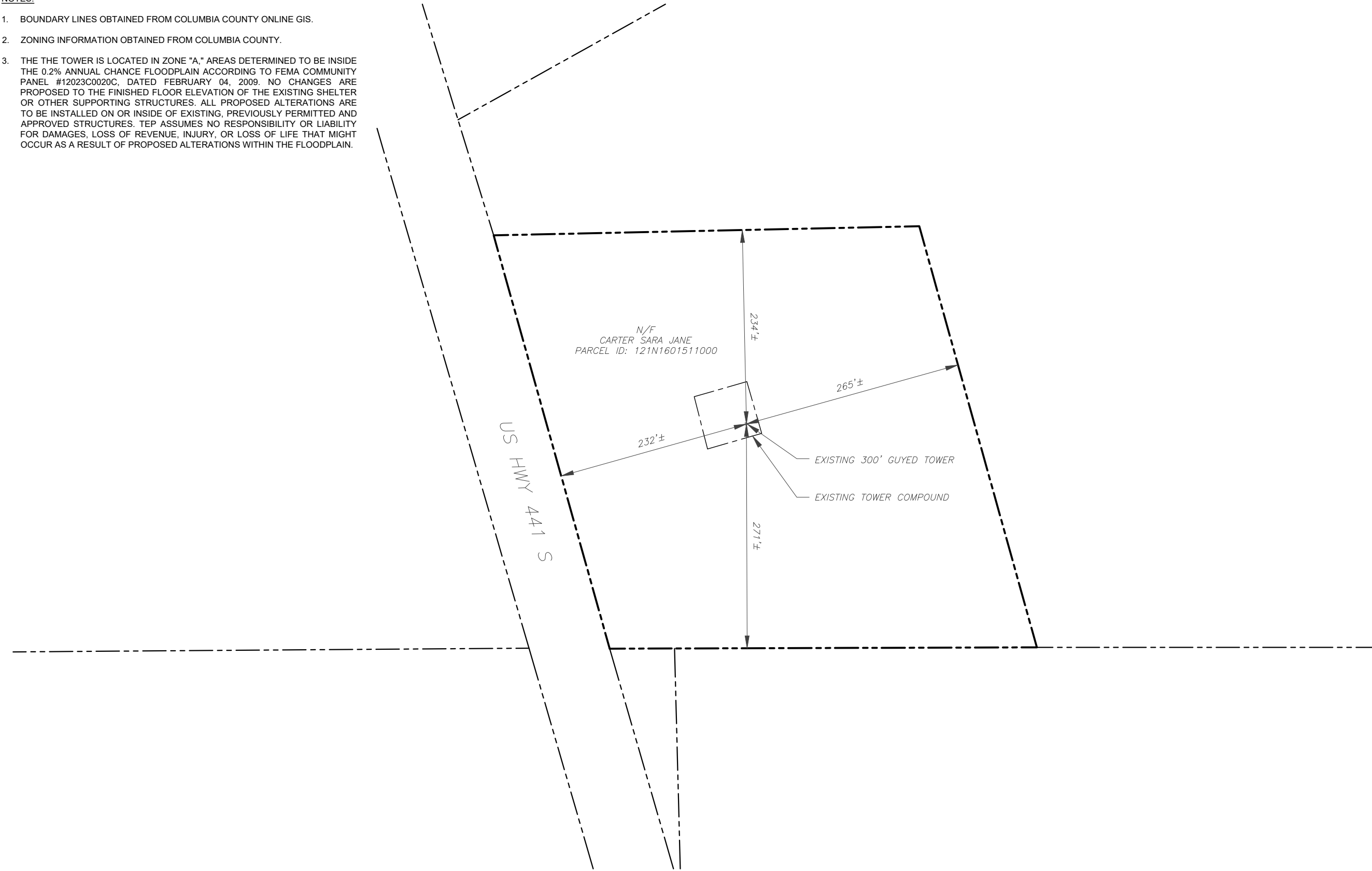
DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

GENERAL NOTES

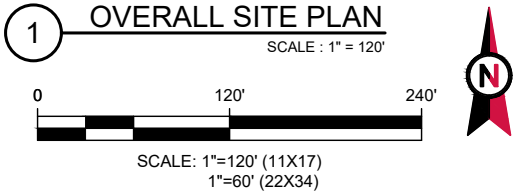
SHEET NUMBER: G-002	REVISION: 1
------------------------	----------------

NOTES:

- BOUNDARY LINES OBTAINED FROM COLUMBIA COUNTY ONLINE GIS.
- ZONING INFORMATION OBTAINED FROM COLUMBIA COUNTY.
- THE THE TOWER IS LOCATED IN ZONE "A," AREAS DETERMINED TO BE INSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #12023C0020C, DATED FEBRUARY 04, 2009. NO CHANGES ARE PROPOSED TO THE FINISHED FLOOR ELEVATION OF THE EXISTING SHELTER OR OTHER SUPPORTING STRUCTURES. ALL PROPOSED ALTERATIONS ARE TO BE INSTALLED ON OR INSIDE OF EXISTING, PREVIOUSLY PERMITTED AND APPROVED STRUCTURES. TEP ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE, INJURY, OR LOSS OF LIFE THAT MIGHT OCCUR AS A RESULT OF PROPOSED ALTERATIONS WITHIN THE FLOODPLAIN.



LEGEND	
	EXISTING PROPERTY LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING LEASE AREA



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

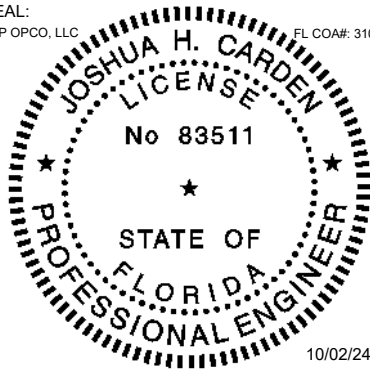
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC
FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

OVERALL SITE PLAN

SHEET NUMBER:
C-001
REVISION:
1

SITE PLAN NOTES:

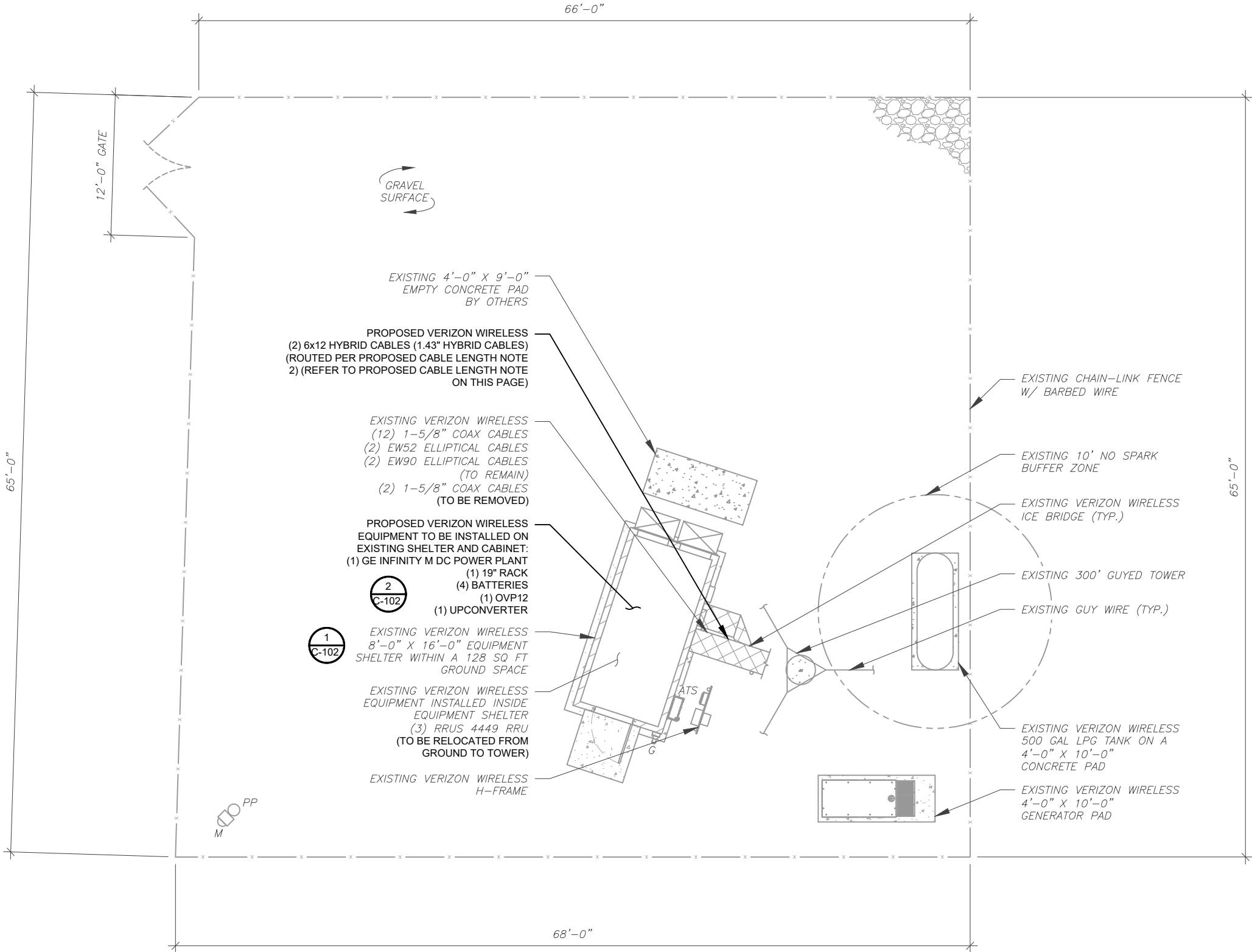
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE VERIZON WIRELESS REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACLE
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
— x —	CHAINLINK FENCE

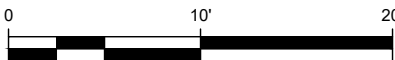
PROPOSED CABLE NOTES:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **360'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).



EXISTING DETAILED SITE PLAN

SCALE: 1" = 10'



SCALE: 1"=10' (11X17)
1"=5' (22X34)



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

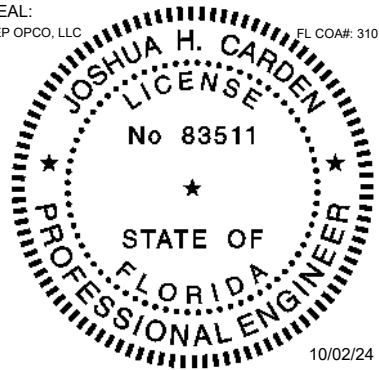
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC
FL COA#: 31011



verizon

DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

DETAILED SITE PLAN

SHEET NUMBER:

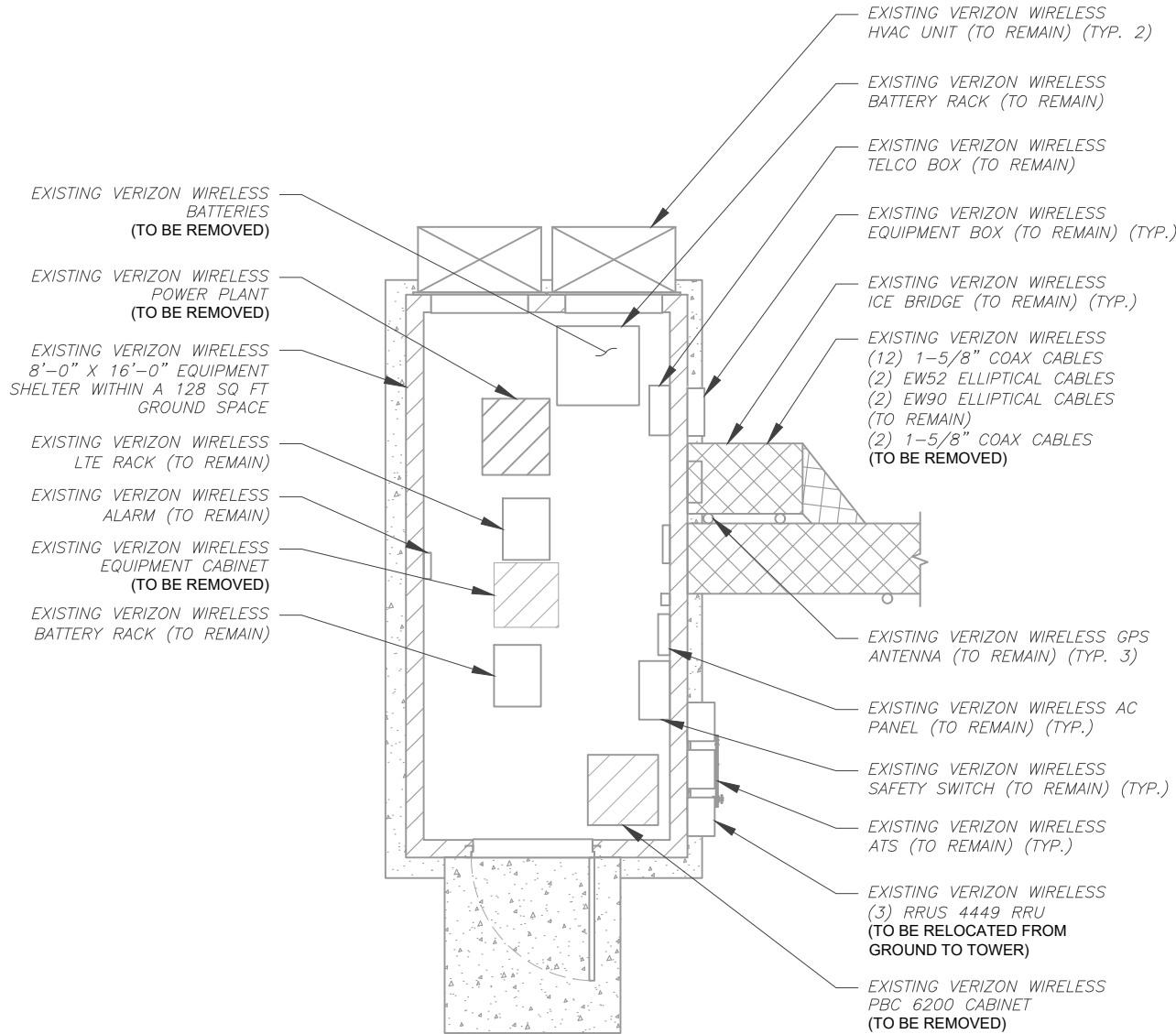
C-101

REVISION:

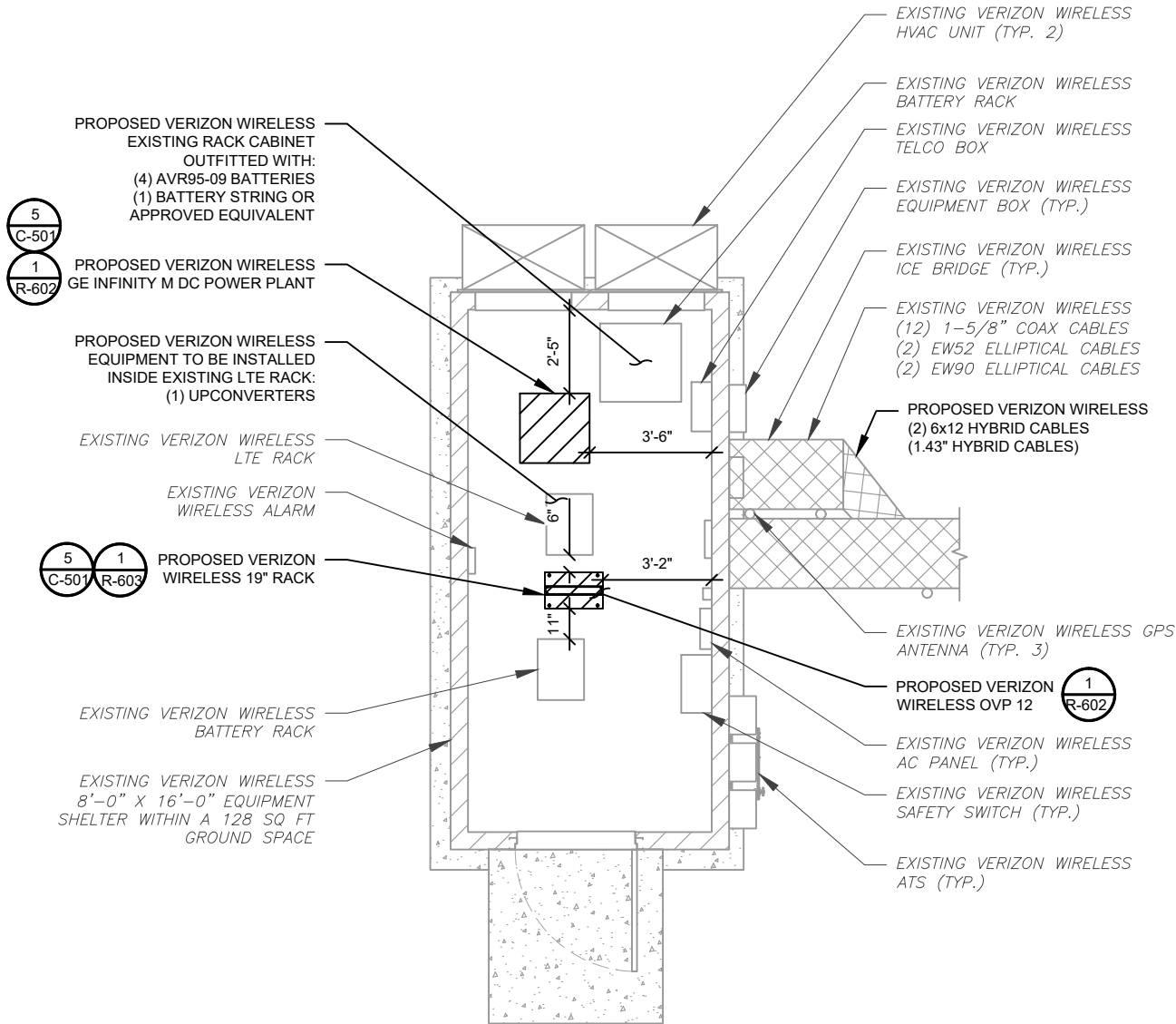
1

SITE PLAN NOTES:

- CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
- REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
- ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
- ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.



1 EXISTING GROUND EQUIPMENT LAYOUT
SCALE: 1" = 5'
0 5' 10'
SCALE: 1"=5' (11X17)
1"=2.5' (22X34)



2 PROPOSED GROUND EQUIPMENT LAYOUT
SCALE: 1" = 5'
0 5' 10'
SCALE: 1"=5' (11X17)
1"=2.5' (22X34)



TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

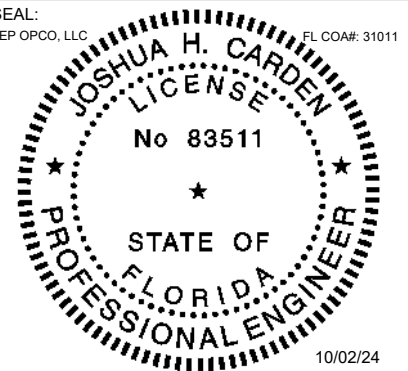
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
D	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

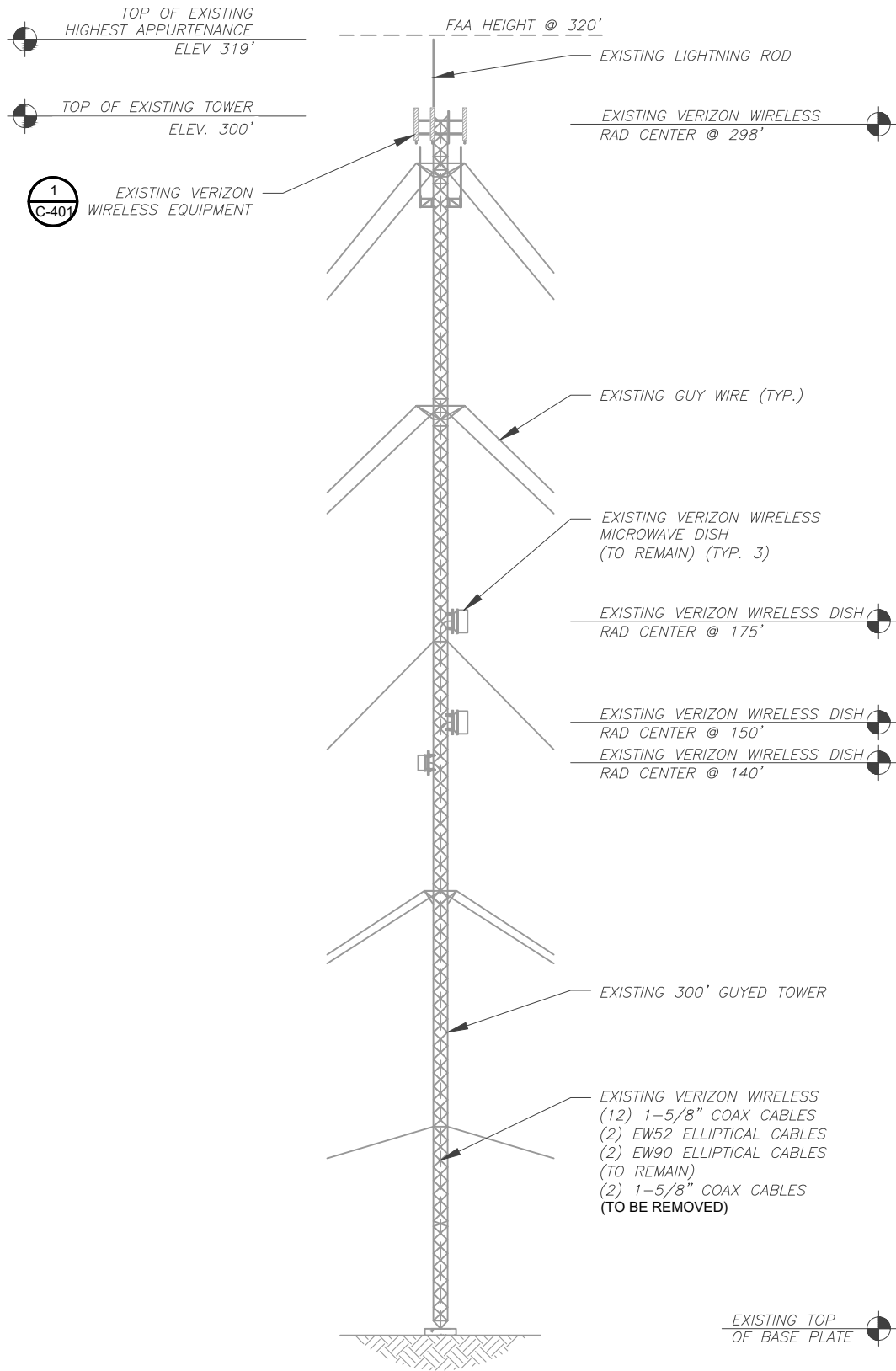
SEAL:
TEP OPCO, LLC
FL COA#: 31011



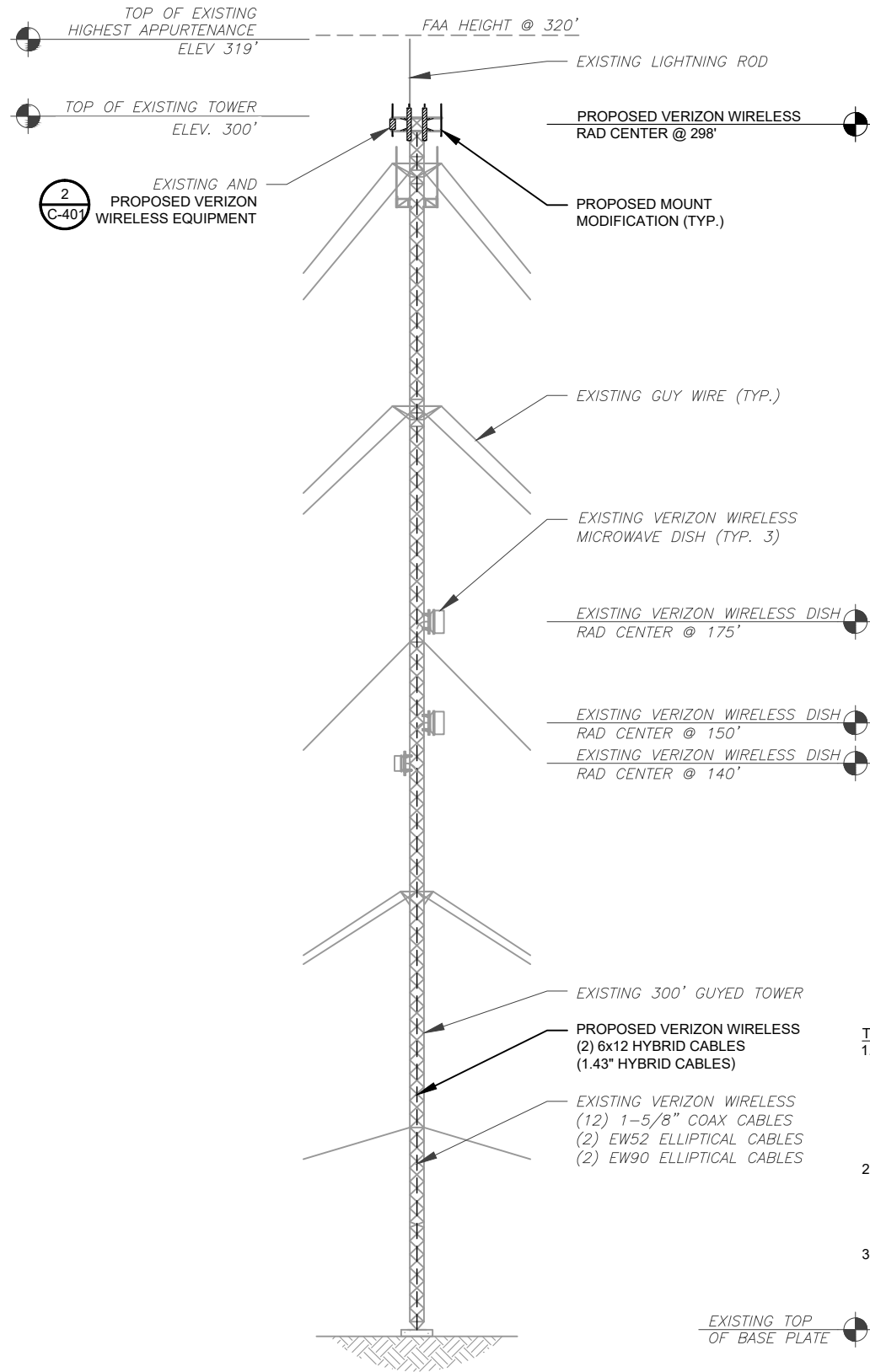
DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

DETAILED EQUIPMENT LAYOUT

SHEET NUMBER: C-102	REVISION: 1
------------------------	----------------



1 EXISTING TOWER ELEVATION
SCALE: N.T.S.



2 PROPOSED TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, DATED JULY 18, 2024, THE EXISTING MOUNT **MUST BE MODIFIED** TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION DETAILED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

ATC IS CURRENTLY FILED FOR HEIGHT HIGHER THAN THE TOP OF TOWER.

- TOWER NOTES:**
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
 - WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
 - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
 - TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

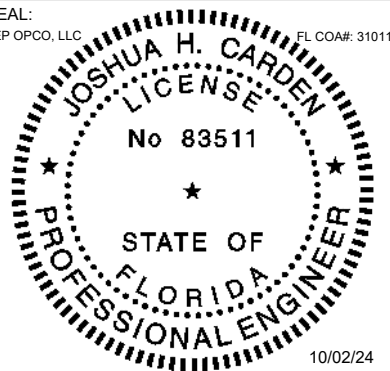
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

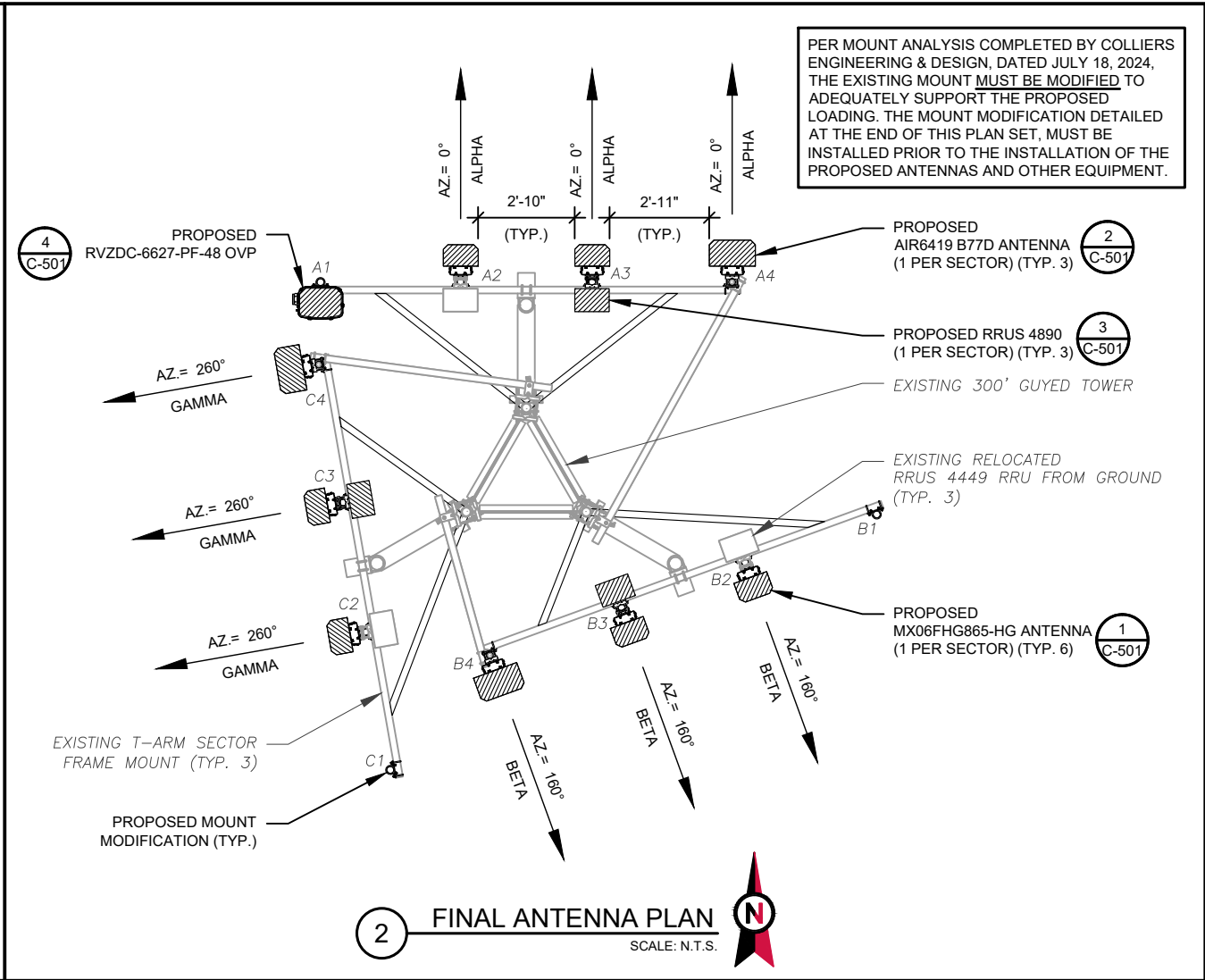
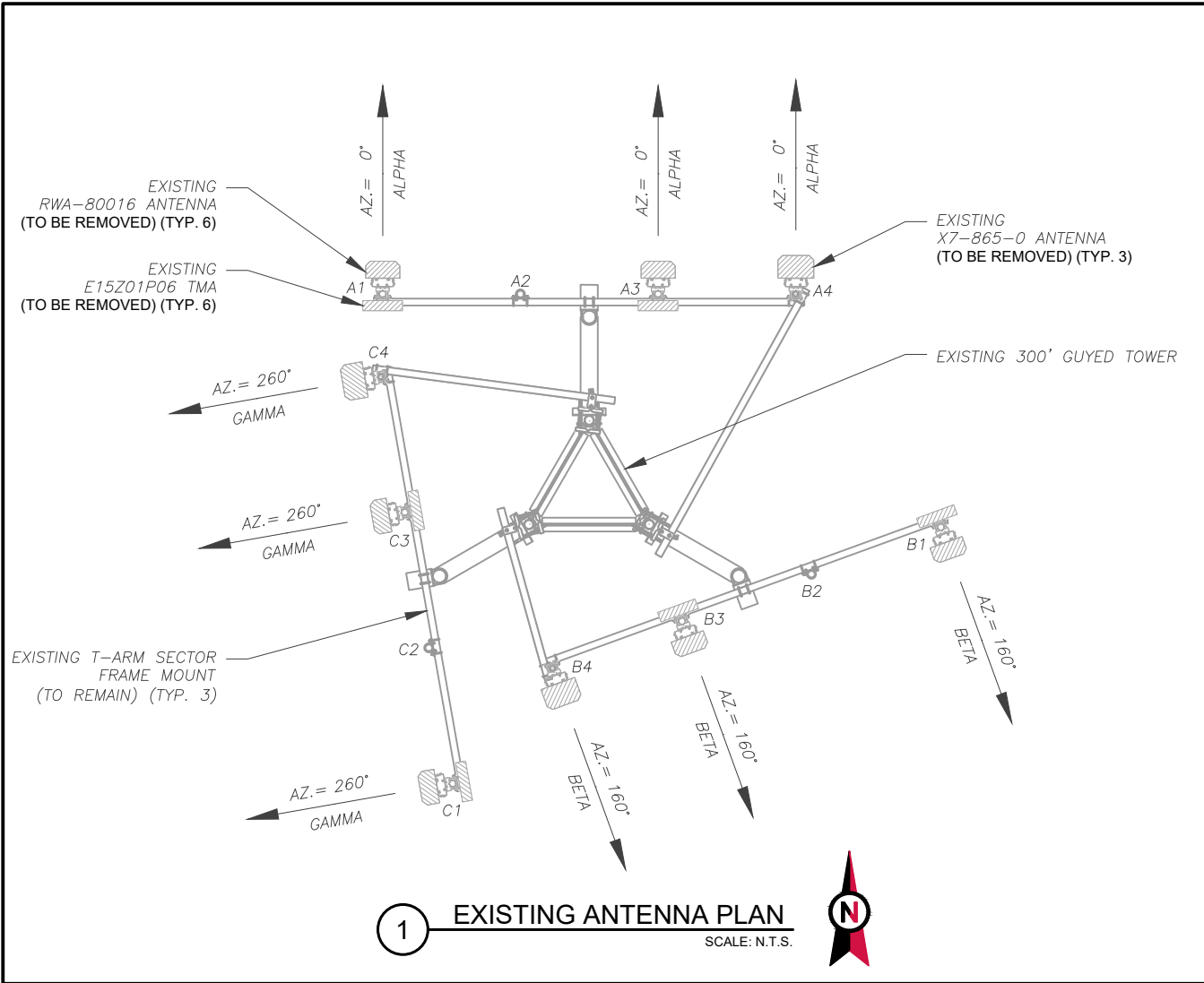
SEAL:
TEP OPCO, LLC
FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

TOWER ELEVATION

SHEET NUMBER:
C-201
REVISION:
1



EXISTING ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	298'	0°	A1	RWA-80016	LTE 850/5G 850	*	RMV	(1) E15Z01P06	RMV
			A2	-	-	-	-	-	-
			A3	RWA-80016	LTE 850/5G 850	*	RMV	(1) E15Z01P06	RMV
			A4	X7-865-0	LTE 700	-	-	-	-
BETA	298'	160°	B1	RWA-80016	LTE 850/5G 850	*	RMV	(1) E15Z01P06	RMV
			B2	-	-	-	-	-	-
			B3	RWA-80016	LTE 850/5G 850	*	RMV	(1) E15Z01P06	RMV
			B4	X7-865-0	LTE 700	-	-	-	-
GAMMA	298'	260°	C1	RWA-80016	LTE 850/5G 850	*	RMV	(1) E15Z01P06	RMV
			C2	-	-	-	-	-	-
			C3	RWA-80016	LTE 850/5G 850	*	RMV	(1) E15Z01P06	RMV
			C4	X7-865-0	LTE 700	-	-	-	-

* - SEE RFDS FOR VALUES

NOTES
1. CONFIRM WITH VERIZON WIRELESS REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
3. TEP DID NOT VERIFY THE EXISTING LOADING. LOADING DATA PROVIDED BY ATC AND VERIZON.
STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS
JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	298'	0°	A1	-	-	-	-	-	-
			A2	MX06FHG865-HG	LTE 700/LTE1900/5G 850/LTE 850/LTE AWS/LTE AWS3	*	ADD	(1) RRUS 4449	RMN
			A3	MX06FHG865-HG	LTE 700/LTE1900/5G850/LTE 850/LTE AWS/LTE AWS3	*	ADD	(1) RRUS 4890	ADD
			A4	AIR 6419 B77D	5G L-SUB6	*	ADD	-	-
BETA	298'	160°	B1	-	-	-	-	-	-
			B2	MX06FHG865-HG	LTE 700/LTE1900/5G 850/LTE 850/LTE AWS/LTE AWS3	*	ADD	(1) RRUS 4449	RMN
			B3	MX06FHG865-HG	LTE 700/LTE1900/5G850/LTE 850/LTE AWS/LTE AWS3	*	ADD	(1) RRUS 4890	ADD
			B4	AIR 6419 B77D	5G L-SUB6	*	ADD	-	-
GAMMA	298'	260°	C1	-	-	-	-	-	-
			C2	MX06FHG865-HG	LTE 700/LTE1900/5G 850/LTE 850/LTE AWS/LTE AWS3	*	ADD	(1) RRUS 4449	RMN
			C3	MX06FHG865-HG	LTE 700/LTE1900/5G850/LTE 850/LTE AWS/LTE AWS3	*	ADD	(1) RRUS 4890	ADD
			C4	AIR 6419 B77D	5G L-SUB6	*	ADD	-	-

* - SEE RFDS FOR VALUES

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRIFLEX	STATUS
-	-	(10) 1-5/8"	-	RMN
-	-	(2) 1-5/8"	-	RMV

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(10) 1-5/8"	-	RMN
(1) RVZDC-6627-PF-48	ADD	-	(2) 6x12 (1.43" HYBRID)	ADD

3 EQUIPMENT SCHEDULES



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

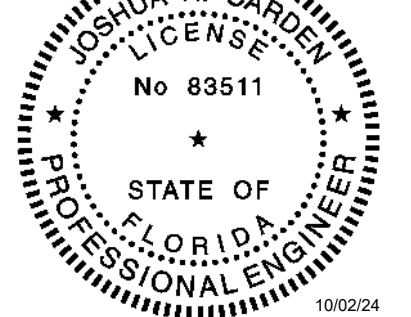
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
D	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

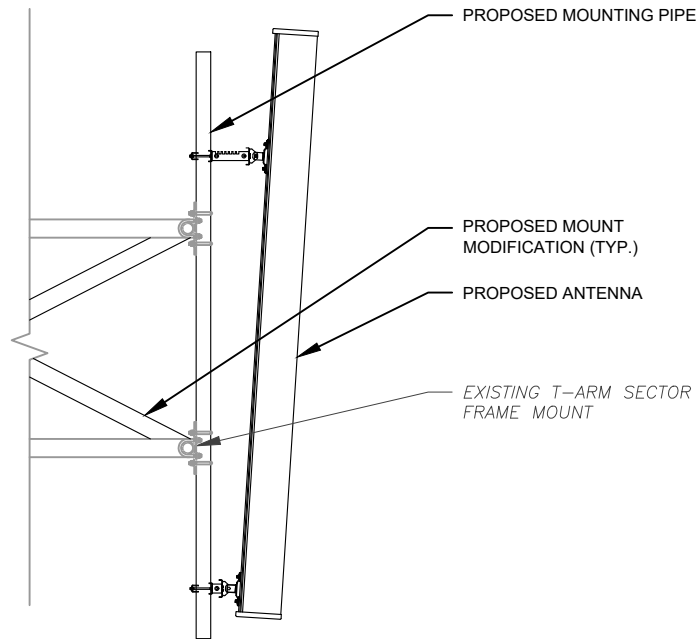
SEAL:
TEP OPCO, LLC
FL COA#: 31011



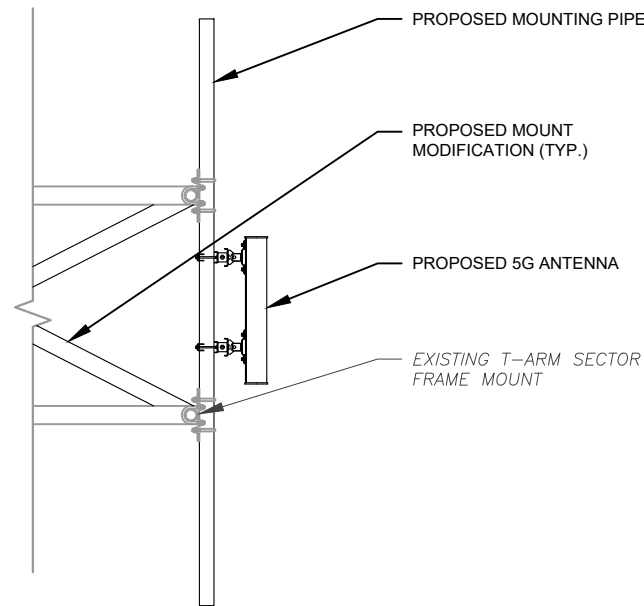
DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

ANTENNA INFORMATION & SCHEDULE

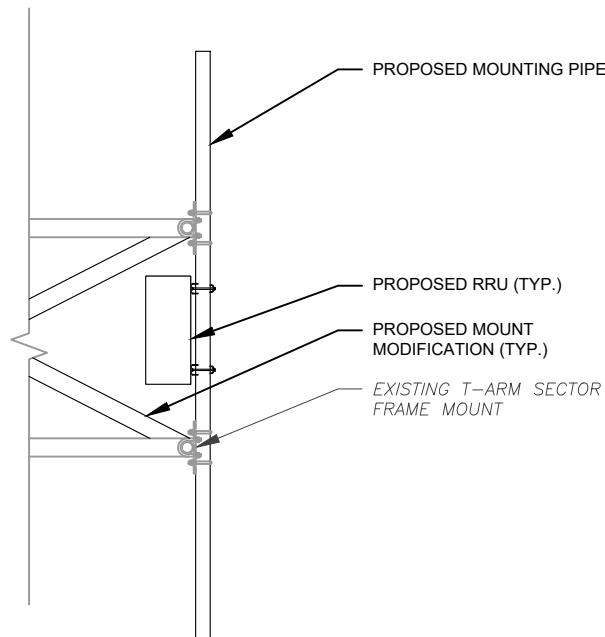
SHEET NUMBER: C-401	REVISION: 1
-------------------------------	-----------------------



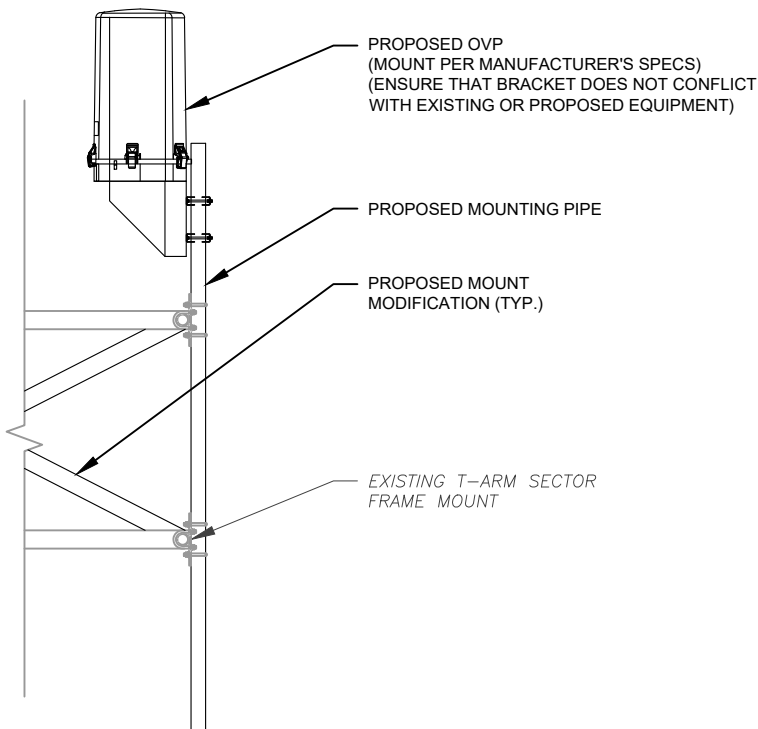
1 PROPOSED ANTENNA MOUNTING DETAIL
SCALE: N.T.S.



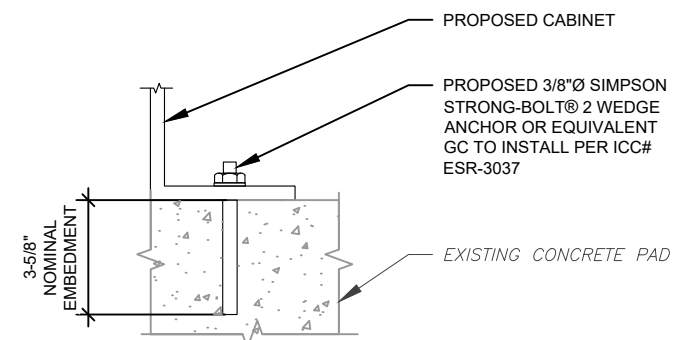
2 PROPOSED ANTENNA MOUNTING DETAIL
SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL
SCALE: N.T.S.



4 PROPOSED OVP MOUNTING DETAIL
SCALE: N.T.S.



NOTE:

INSTALL SIMPSON STRONG-TIE® STRONG-BOLT® 2 WEDGE ANCHOR(S) STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.STRONGTIE.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

5 PROPOSED CABINET ATTACHMENT DETAIL
SCALE: N.T.S.



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO, LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO, LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

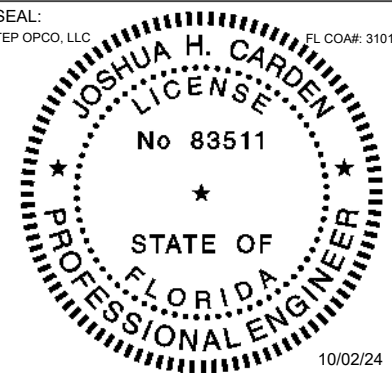
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC
FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

CONSTRUCTION
DETAILS

SHEET NUMBER:	REVISION:
C-501	1

NOTES:

1. ALL CONDUCTORS ARE TYPE THWN (75%) COPPER.
2. MAXIMUM LENGTH OF RUN FOR RECTIFIER CIRCUITS IS 50–FT.
3. INTERSECT/GENERAC INTEGRATED LOAD CENTER INCLUDES 200A MAIN DISCONNECT AND TRANSFER SWITCH FOR PORTABLE OR PERMANENT GENERATOR.
4. RECTIFIER LOADS ARE CONSIDERED TO BE NON–CONTINUOUS.
5. IF ADDITIONAL FUTURE LOADS ARE ADDED WHICH CAUSE TOTAL DEMAND TO EXCEED GENERATOR BREAKER SIZE, BACKUP POWER SYSTEM SHALL BE EVALUATED AND UPGRADED AS NECESSARY.

200A 120/240V 1Ø 3W VERIZON POWER PANEL SCHEDULE												
LOAD SERVED	UNCOMPENSATED VOLT AMPERES		TRIP	CKT #	PHASE			CKT #	TRIP	UNCOMPENSATED VOLT AMPERES		LOAD SERVED
	L1	L2								L1	L2	
RECEPT.	180		20A	1		A		2	20A	500		LIGHTS
RECEPT.		180	20A/20A	3		B		4	30A		415	A/C UNIT
A/C UNIT	415		30A	5		A		6		415		
		415		7		B		8	70A		500	TOWER LIGHTS
*LTE AC 1	1000		20A	9		A		10		500		
		1000		11		B		12	20A		1000	
*LTE AC 2	1000		20A	13		A		14		1000		****RECTIFIER
		1000		15		B		16	40A		414	
*LTE AC 3	1000		20A	17		A		18		414		****RECTIFIER
		1000		19		B		20	40A		414	
****RECTIFIER	414		40A	21		A		22		414		****RECTIFIER
		414		23		B		24	40A		414	
LINEAGE POWER 1	3840		40A	25		A		26		414		****RECTIFIER
		3840		27		B		28	40A		3840	
UNKNOWN	1920		20A	29		A		30		3840		LINEAGE POWER 2
VOLT AMPS	9769	7849								7497	6997	VOLT AMPS
L1 VOLT AMPERES				17266		14846		L2 VOLT AMPERES				
				143.88		123.72		L2 AMPS				
				179.85		154.65		L2 DEMAND AMPS				
				179.85		MAX DEMAND AMPS						

*BREAKER TO BE REMOVED
**GEN. BATTERY CHARGED LOAD IS 0 VA DURING GENERATOR OPERATION.
***LOADING VALUES BASED ON INFORMATION PROVIDED BY LOCAL UTILITY COMPANY.
****LOADING VALUES BASED ON INFORMATION PROVIDED BY VERIZON WIRELESS.



TEP OPCO, LLC

326 TRYON ROAD

RALEIGH, NC 27603-3530

OFFICE: (919) 661-6351

www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

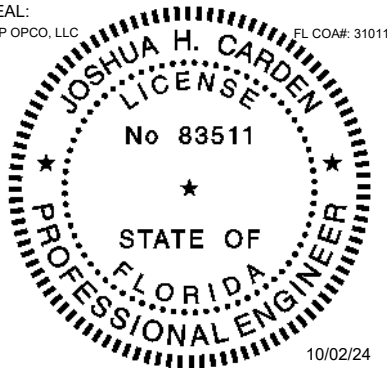
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC



FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

EXISTING PANEL
SCHEDULE

SHEET NUMBER:	REVISION:
E-101	1

NOTES:

1. ALL CONDUCTORS ARE TYPE THWN (75%) COPPER.
2. MAXIMUM LENGTH OF RUN FOR RECTIFIER CIRCUITS IS 50–FT.
3. INTERSECT/GENERAC INTEGRATED LOAD CENTER INCLUDES 200A MAIN DISCONNECT AND TRANSFER SWITCH FOR PORTABLE OR PERMANENT GENERATOR.
4. RECTIFIER LOADS ARE CONSIDERED TO BE NON–CONTINUOUS.
5. IF ADDITIONAL FUTURE LOADS ARE ADDED WHICH CAUSE TOTAL DEMAND TO EXCEED GENERATOR BREAKER SIZE, BACKUP POWER SYSTEM SHALL BE EVALUATED AND UPGRADED AS NECESSARY.

200A 120/240V 1Ø 3W VERIZON POWER PANEL SCHEDULE														
LOAD SERVED	UNCOMPENSATED VOLT AMPERES		TRIP	CKT #	PHASE			CKT #	TRIP	UNCOMPENSATED VOLT AMPERES		LOAD SERVED		
	L1	L2								L1	L2			
RECEPT.	180		20A	1		A		2	20A	500		LIGHTS		
RECEPT.		180	20A/20A	3		B		4	30A		415	A/C UNIT		
A/C UNIT	415		30A	5		A		6		415				
		415		7		B		8	70A		500	TOWER LIGHTS		
***RECTIFIER	621		30A	9		A		10	70A	500				
		621		11		B		12	30A		621	***RECTIFIER		
***RECTIFIER	621		30A	13		A		14	30A	621				
		621		15		B		16	30A		621	***RECTIFIER		
***RECTIFIER	621		30A	17		A		18	30A	621				
		621		19		B		20	30A		621	***RECTIFIER		
***RECTIFIER	621		30A	21		A		22	30A	621				
		621		23		B		24	30A		621	***RECTIFIER		
LINEAGE POWER 1	3840		40A	25		A		26	30A	621				
		3840		27		B		28	40A		3840	LINEAGE POWER 2		
UNKNOWN	1920		20A	29		A		30	40A	3840				
VOLT AMPS	8839	6919								7739	7239	VOLT AMPS		
L1 VOLT AMPERES				16578		14155		L2 VOLT AMPERES						
				L1 AMPS				138.15		117.96		L2 AMPS		
				L1 DEMAND AMPS				172.69		147.45		L2 DEMAND AMPS		
								172.69				MAX DEMAND AMPS		

*GEN. BATTERY CHARGED LOAD IS 0 VA DURING GENERATOR OPERATION.
**LOADING VALUES BASED ON INFORMATION PROVIDED BY LOCAL UTILITY COMPANY.
***LOADING VALUES BASED ON INFORMATION PROVIDED BY VERIZON WIRELESS.



TEP OPCO, LLC

326 TRYON ROAD

RALEIGH, NC 27603-3530

OFFICE: (919) 661-6351

www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

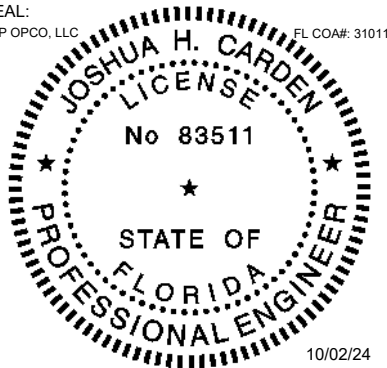
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC



FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

PROPOSED PANEL SCHEDULE

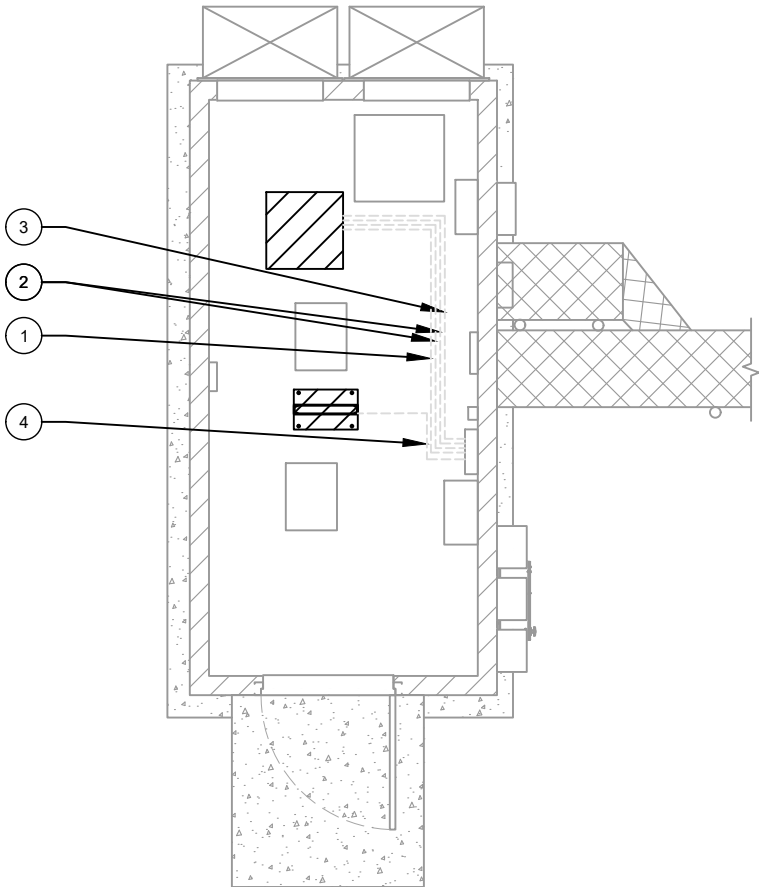
SHEET NUMBER: E-102	REVISION: 1
------------------------	----------------

LABEL LIST:

- (1)-3/4" CONDUIT FOR GFI IN THE NEW POWER PLANT AND POWER CABINET
- (2)-2" CONDUITS FOR THE RECTIFIERS IN THE NEW POWER PLANT AND POWER CABINET
- (1)-1" CONDUIT FOR GENERATOR AND ILC ALARM FROM ILC TO POWER PLANT AND POWER CABINET
- (1)-1½" CONDUIT FOR PROPOSED EQUIPMENT RACK FROM ILC TO EQUIPMENT RACK.

NOTES:

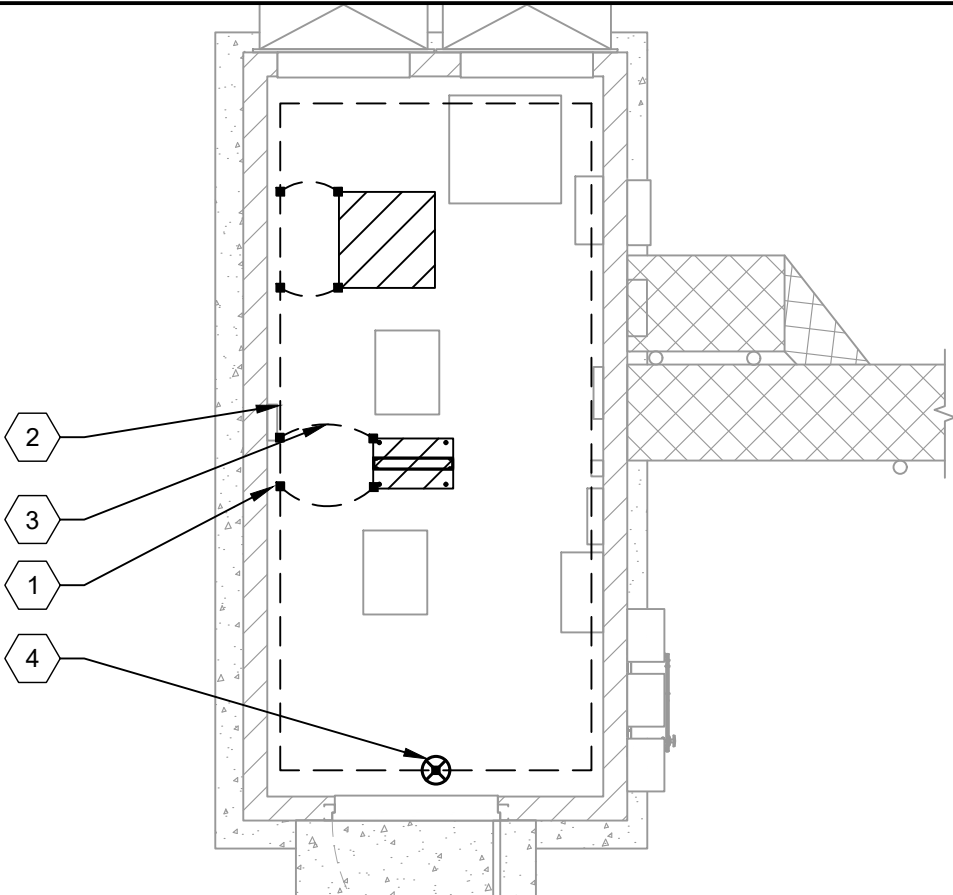
- POWER AND TELCO CONDUITS RECEIVING CONDUCTORS BY OTHERS TO HAVE PULL ROPES.
- ALL TELCO CONDUITS ARE TO BE STUBBED IN D-MARC LOCATION.
- ALL POWER CONDUITS ARE TO BE TERMINATED AT THE METER CENTER.
- THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO TRENCHING. ANY DAMAGE CAUSED TO THE EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- ALL CONDUITS SHALL BE INSTALLED PRIOR TO FINISH GRADING, GEOFABRIC, AND STONE INSTALLATION.
- CONTRACTOR SHALL INSTALL SWEEPS AT ALL CONDUIT DIRECTION CHANGES UNLESS NOTED OTHERWISE.
- RUN CONDUITS FROM ILC TO GENERATOR UNDERGROUND AND STUB UP CONDUITS MINIMUM 6" HIGH INSIDE GENERATOR BASE AND TERMINATE WITH MALE ADAPTER AND THREADED BUSHING.
- WHEN ALL RRUs ARE GROUND MOUNTED, OMIT OVPs AND RUN FIBER/POWER FROM CONSOLIDATED EQUIPMENT AND POWER CABINET DIRECTLY TO RRUs.



1 POWER ROUTING PLAN

GROUNDING KEYED NOTES:

- GROUNDING ELECTRODE CONDUCTOR PER NEC
- SHELTER GROUNDING SYSTEM
- GROUNDING ELECTRODE (TYP.)
- GROUNDING ELECTRODE WITH TEST WELL



2 GROUNDING PLAN



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

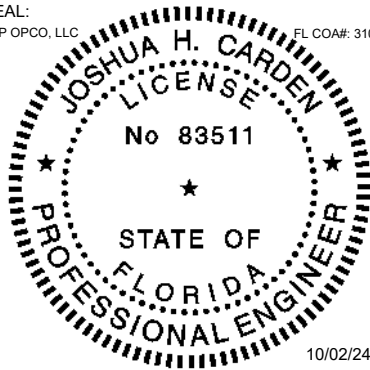
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
0	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

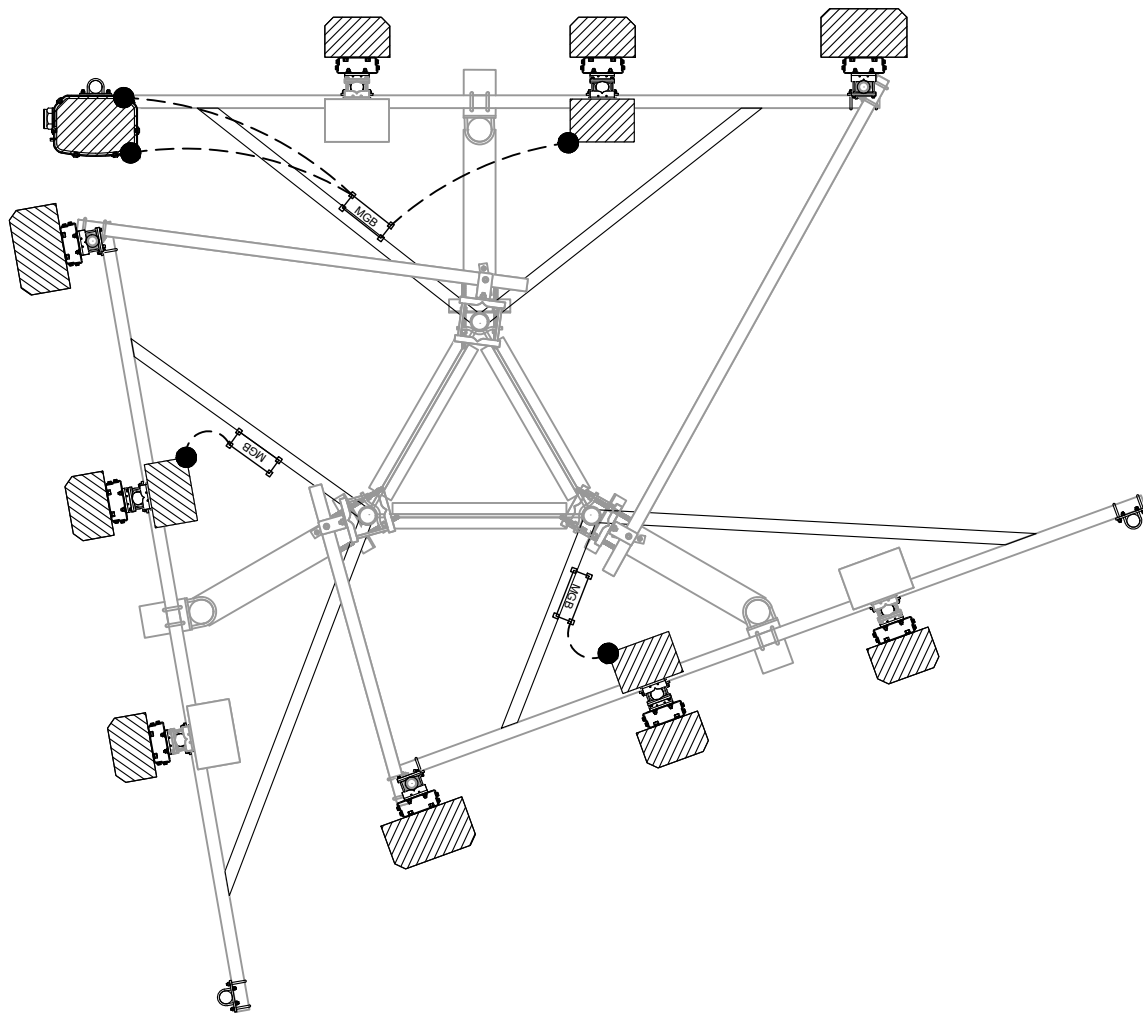
SEAL:
TEP OPCO, LLC
FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

ELECTRICAL DETAILS

SHEET NUMBER: E-104	REVISION: 1
------------------------	----------------



LEGEND	
	MECHANICAL CONNECTION
	MASTER GROUND BAR

1 ANTENNA GROUNDING PLAN
SCALE: N.T.S.



TEP OPCO, LLC
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net

TEP IS A FAMILY OF COMPANIES LICENSED TO PROVIDE DIFFERENT SERVICES IN DIFFERENT JURISDICTIONS. DEPENDING ON THE JURISDICTION, PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES ARE PROVIDED BY TEP OPCO, LLC, A DELAWARE LIMITED LIABILITY COMPANY, TEP ENGINEERING, LLC, A NORTH CAROLINA PROFESSIONAL LIMITED LIABILITY COMPANY, OR M&H ENGINEERING, LLC, A NEW YORK PROFESSIONAL LIMITED LIABILITY COMPANY. GENERAL CONTRACTOR SERVICES ARE PROVIDED BY TEP OPCO, LLC, A DELAWARE LIMITED LIABILITY COMPANY. WE ACQUIRE THE REQUISITE LICENSES IN EACH STATE. ADDITIONAL INFORMATION CAN BE OBTAINED FROM THE COMPANY.

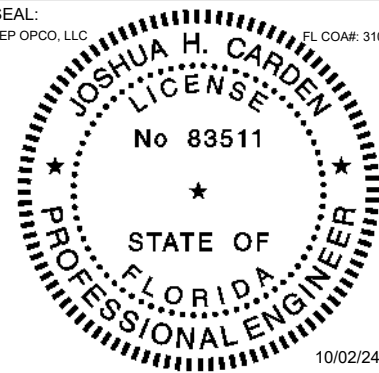
ATC SITE NUMBER:
97139
ATC SITE NAME:
HIGHWAY 441 NORTH
VERIZON WIRELESS SITE NAME:
HIGHWAY 441
SITE ADDRESS:
22535 N US HWY 441
WHITE SPRINGS, FL 32096-7100

REV.	DESCRIPTION	BY	DATE
0	PRELIMINARY	PSG	08/30/24
B	90% CONSTRUCTION	SSP	09/19/24
0	100% CONSTRUCTION	BJO	09/30/24
1	100% CONSTRUCTION	BJO	10/02/24

DIGITAL/ELECTRONIC SEAL:
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY JOSHUA H. CARDEN, P.E. ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SEAL:
TEP OPCO, LLC
JOSHUA H. CARDEN
FL COA#: 31011



DATE DRAWN:	10/02/24
ATC JOB NO:	14859906
CUSTOMER NAME:	HIGHWAY 441
CUSTOMER ID:	228804

ELECTRICAL DETAILS

SHEET NUMBER: E-105	REVISION: 1
-------------------------------	-----------------------



- ### TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.



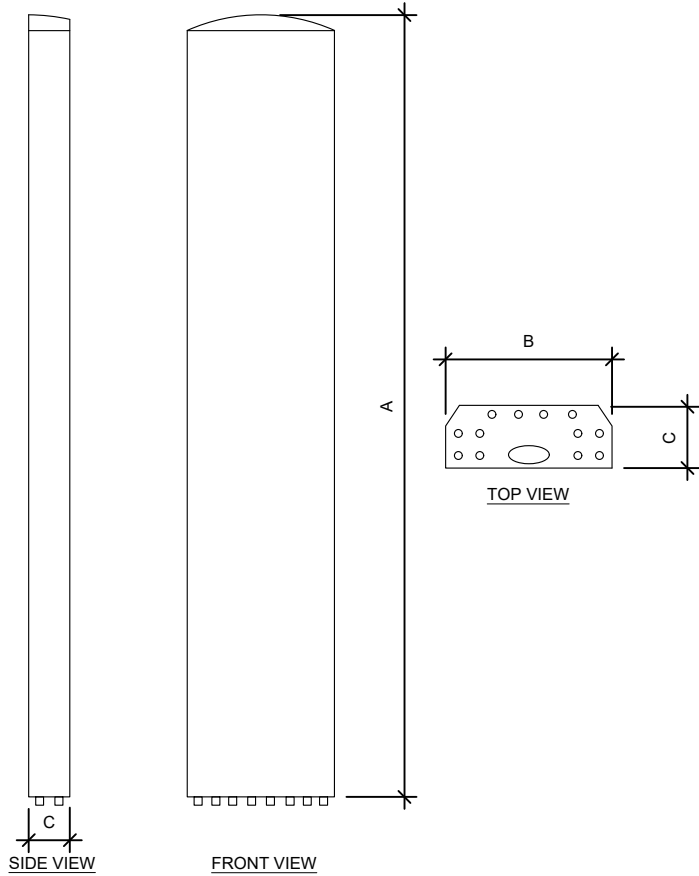
- ### 2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

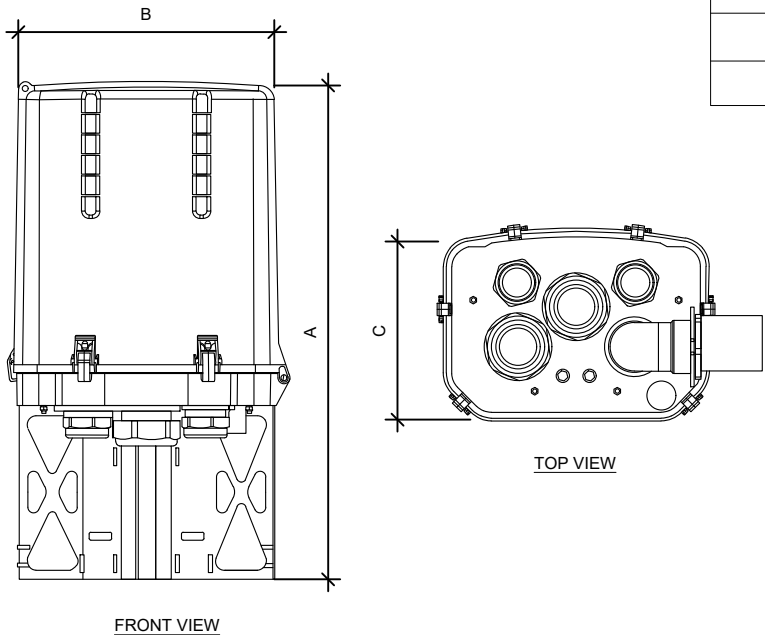


- ② TOWER GROUND BAR DETAIL

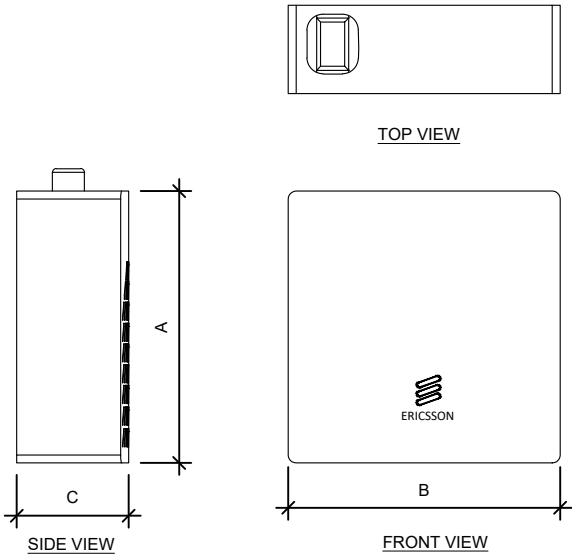
SCALE: N.T.S.



ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
MX06FHG865-HG	95.9"	12.2"	7.5"	51.0
AIR 6419 B77D	31.2"	16.1"	9.1"	63.1



OVP SPECIFICATIONS				
RAYCAP MODEL	A	B	C	WEIGHT (LBS)
RVZDC-6627-PF-48	28.9"	15.7"	10.3"	32.0



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RRUS 4890	20.6"	15.7"	7.2"	69.5

Infinity M System



Infinity M may be configured as a +24V or -48V single voltage power system or as a dual voltage power system that supports rectifiers and converters. The primary voltage is supported by +24V or -48V rectifiers and battery reserve, while secondary voltage is supported by DC-DC converters. Infinity-M includes dedicated 24V, 48V and return buses. The primary voltage capacity is 1,600A at 24V and 1,600A at 48V. Secondary voltage capacity is up to 600A. The system includes low voltage battery disconnect option for the primary voltage. A low voltage load disconnect option can be used for load shedding to maintain critical loads.

Applications

- Wireless Telecom Networks
 - Central Office
- Indoor/Outdoor Wireless
 - Remote Radio Sites
- Data Networks
 - Off-Grid/On-Grid Renewable Energy Sites

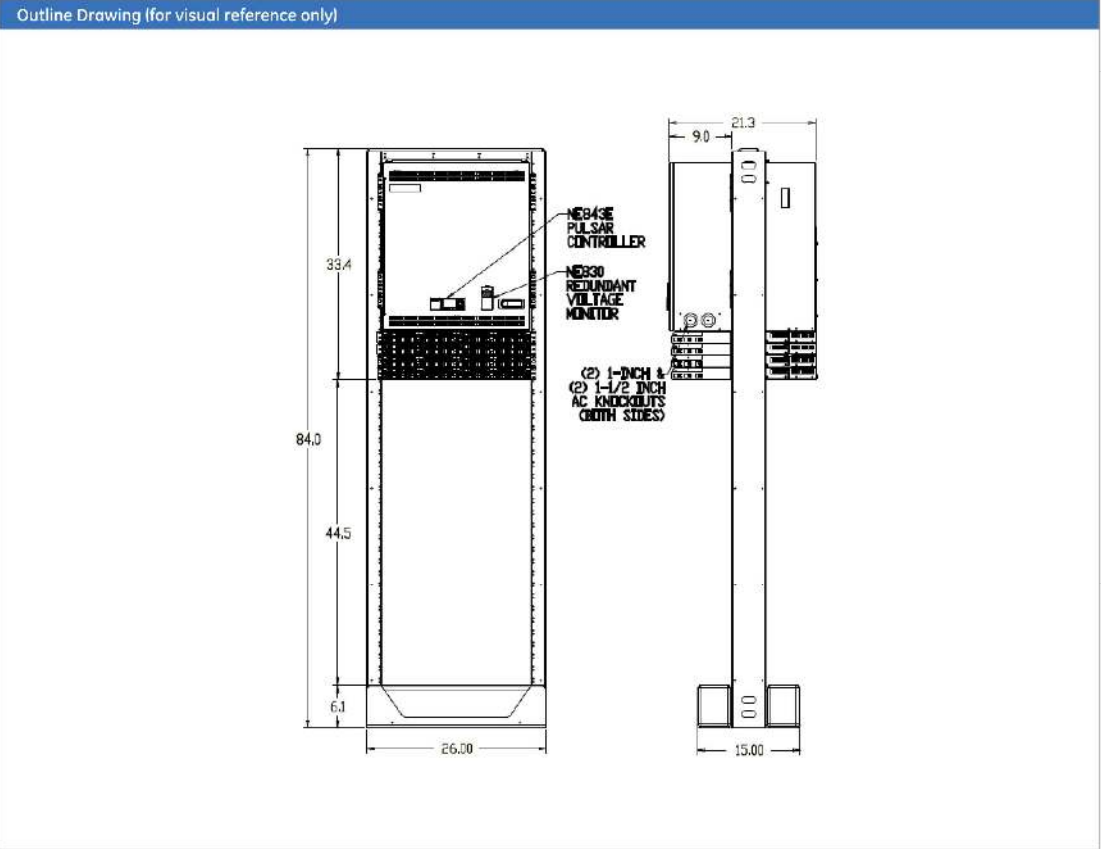
Key Features

- Dual Voltage Flexibility
 - Redundant fan cooling
 - Front panel LED indicators
- 1U height, high power density
 - 220/110 V AC input
 - Digital load sharing
- Hot pluggable
 - RoHS compliant
 - ECO Priority ready

Specifications

Input	Min	Typ	Max
Voltage Range			
- High-Line	175Vac	220Vac	275Vac
- Low-Line	85Vac	110Vac	140Vac
Frequency	45Hz	60Hz	66Hz
Power Factor	98%	99.5%	
Total Harmonic Distortion			5%
Primary Output			
Nominal Voltage	24Vdc		-48Vdc
Output Current	1,600A		1,600A
Vo Setpoint (factory)	27.2Vdc±1%		-54.5Vdc±1%
Vo Range	+21Vdc to +29Vdc		-42Vdc to -58Vdc
Regulation		±0.5%	
Secondary Output			
Nominal Voltage	-48Vdc		24Vdc
Output Current	600A		600A
Vo Setpoint (factory)	-54.5Vdc±1%		27.2Vdc±1%
Vo Range	-42Vdc to -58Vdc		+21Vdc to +29Vdc
Regulation		±0.5%	
Mechanical			
Height (in./mm)	31.5 / 800 (Base system with 4 power shelves)		
Width (in./mm)	23 / 584.2 (Standard Frame)		
Depth (in./mm)	21 / 533.4		
Weight (lb / Kg)	350 / 159 (Base System with 4 power shelves and 7ft frame, no rectifiers)		

Environmental	
Operating Temperature	-40°C to +75°C (-40°F to 167°F)
Storage Temperature	-40°C to +85°C (-40°F to 185°F)
Relative Humidity	95% max, non-condensing
Altitude	4000M (for altitudes above 2000M, peak operating temperature de-rates 0.656° C./100M; 4000M peak temperature rating is 62° C)
Safety and Standards Compliance	
NEBS	Evaluated by independent NRTL test lab to Telcordia GR63, Issue 3 and GR1089-CORE, Issue 5
Safety	CSA C22.2 No. 60950-1-03 Certified for Canada and U.S.; UL60950-1 1st Ed.
RoHS	Compliant to RoHS EU Directive 2002/95/EC RoHS 5/6
EMC	European Directive 2004/108/EC; EN55022, Class A; EN55024; FCC, Class A; GR1089-CORE, Issue 5
Agency Certifications	
CSA	CSA C22.2 No 60950-1-03 and UL 60950-1 1st Ed
EMI/EMC	European Directive 2004/108/EC; EN55022 (CISPR22), Class A; EN55024 (CISPR24)
NEBS LEVEL 3	GR1089-CORE, Issue 5

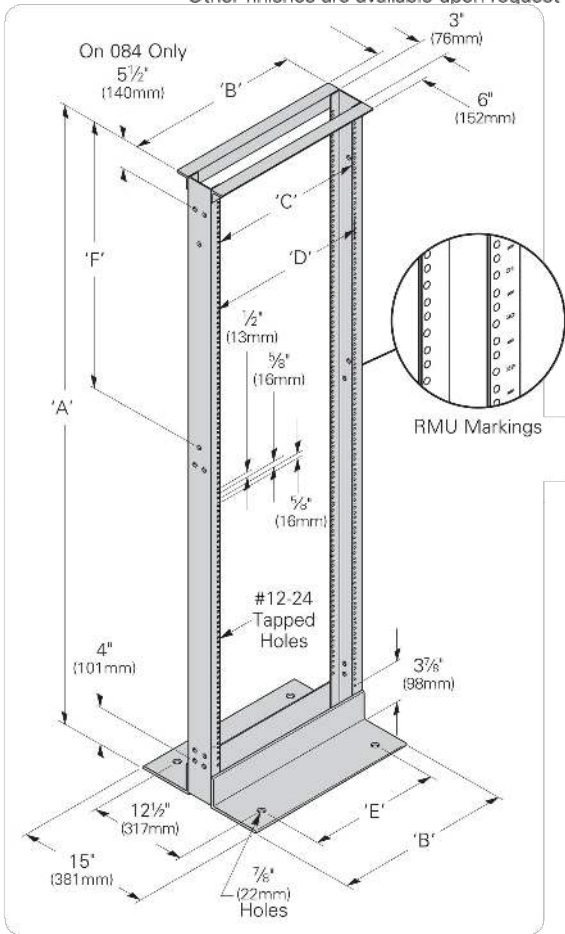
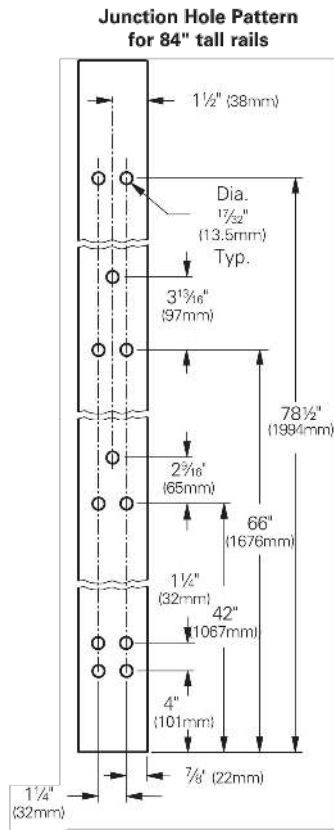


Network Equipment Racks & Accessories

Two-Post Rack

Two-Post Network Equipment Rack
3" Uprights, 19" & 23" Panel Mounting, Customer Premise

- Universal junction hole pattern matches most manufacturers racks
- #12-24 panel mounting holes
- Conformance to EIA/ECA-310-E
- Load Rating: 1200 lbs. (544kg) for up to 84" (2133mm) height or 1000 lbs. (453kg) for 96" (2438mm) and 108" (2743mm) weight capacity when evenly distributed along the height of the rack
- Permanently stamped rack mount unit (RMU) markings included
- Packaged unassembled in protective carton suitable for parcel shipment
- Assembles in about ten (10) minutes using standard hand tools
- Includes thirty (30) dog point combo head (Phillips and flat blade) mounting screws
- Double sided universal [5/8" (16mm), 3/8" (16mm), 1/2" (13mm)] mounting spacing
- Twin 1 1/2" (58mm) x 1 1/4" (50mm) top angles for rigidity
- Tapped assembly holes eliminate the need for nuts and simplifies assembly and squaring
- UL Listed (File No. E171936) as a communications circuit accessory
- Material: Aluminum uprights with steel top/bottom angles
- See page ii for link to OPM approvals
- See SB588A page 44 for anchor kits
- Finish ____: Aluminum - brushed (AL) uprights with silver powder coated top & bottom angles
Flat black powder coat (FB)
Telco gray powder coat (TG)
Other finishes are available upon request



Network Equipment Racks & Accessories

Two-Post Rack

Two-Post Network Equipment Rack
3" Uprights, 19" & 23" Panel Mounting, Customer Premise

	Dimensions			
	19" (482mm) Rack Width		23" (594mm) Rack Width	
	In.	(mm)	In.	(mm)
'A' Overall Height	36" - 108"	(914 - 2743)	36" - 108"	(914 - 2743)
'B' Overall Width	20 5/16"	(516)	24 5/16"	(617)
'C' Panel Mounting	18 5/16"	(465)	22 5/16"	(567)
'D' Usable Inside Width	17 3/4"	(451)	21 3/4"	(552)
'E' Base Anchor Spacing	16"	(400)	20"	(508)

Universal Spacing [5/8" (16mm), 3/8" (16mm), 1/2" (13mm)]

Part Number	'A' Height In.	(mm)	'F' Spacing In.	(mm)	Mounting Spaces	Shipping Weight	
						Lbs.	(kg)
19" (482mm) Rack Width							
SB556036XU	36"	(914)	6"	(152)	17	22.0	(10.0)
SB556048XU	48"	(1219)	3 3/16"	(87)	24	24.0	(10.9)
SB556072XU	72"	(1829)	27 1/16"	(697)	38	27.5	(12.5)
SB556084XU	84"	(2133)	39 7/16"	(1001)	45	30.0	(13.6)
SB556096XU	96"	(2438)	51 7/16"	(1306)	51	31.5	(14.3)
SB556108XU	108"	(2743)	54 3/16"	(1376)	58	33.5	(15.2)
23" (594mm) Rack Width							
SB558036XU	36"	(914)	6"	(152)	17	24.5	(11.1)
SB558048XU	48"	(1219)	3 3/16"	(87)	24	26.5	(12.0)
SB558072XU	72"	(1829)	27 1/16"	(697)	38	30.0	(13.6)
SB558084XU	84"	(2133)	39 7/16"	(1001)	45	32.0	(14.5)
SB558096XU	96"	(2438)	51 7/16"	(1306)	51	34.0	(15.4)
SB558108XU	108"	(2743)	54 3/16"	(1376)	58	36.0	(16.3)

Specify part number and finish when ordering.



Colliers Engineering & Design
5141 Virginia Way, Suite 420
Brentwood, TN 37027
615.686.2575
ashley.sustek@collierseng.com

Mount Post-Modification Analysis Report
(3) 12.50-Ft T-Arms

July 18, 2024
Site ID: 5000125492-VZW / HIGHWAY 441
Page | 5

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10241954
Colliers Engineering & Design Project #: 21944609 (Rev 1)

July 18, 2024

Site Information

Site ID: 5000125492-VZW / HIGHWAY 441
Site Name: HIGHWAY 441
Carrier Name: Verizon Wireless
Address: SR-6 Hwy 441
White Springs, Florida 32055
Columbia County
Latitude: 30.506667°
Longitude: -82.666389°

Structure Information

Tower Type: 300-Ft Guyed
Mount Type: 12.50-Ft T-Frame

FUZE ID # 16276872

Analysis Results

T-Frame: 67.7% 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: Jared Adkins



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	18.8	6.8	30.2	18.2
0.5	25.5	9.5	41.7	25.7
1	31.7	11.5	52.7	32.5

Notes:
- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The existing mounts 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:

- Contractor Required PMI Report Deliverables
- Antenna Placement Diagrams
- Mount Modification Drawings
- Mount Photos
- Mount Mapping Report (for reference only)
- Analysis Calculations

BILL OF MATERIALS						
SECTION 1 - VZWSMART KITS						
QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
6	VZWSMART	VZWSMART-SFK3	V-BRACING KIT	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1.	122	732
6		VZWSMART-AL333	CLIP ANGLE		3	18
24		VZWSMART-MSK I	CROSSOVER PLATE		14	336
12		VZWSMART-P40-238X096	96" LONG, PIPE 2 SCH40 (2.375"OD X 0.154" THK)		29	348
SECTION 2 - OTHER REQUIRED PARTS						
QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
SECTION 3 - REQUIRED SAFETY CLIMB PARTS						
QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
TOTAL:						1434

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	WIRELESSSALES@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



Engineering & Design

www.colliersengineering.com

Copyright © 2024, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

Doing Business as 





PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

Know what's below.
Call before you dig.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT:
WWW.CALL811.COM

SCALE: AS SHOWNJOB NUMBER: 21944609

0	07/18/24	ISSUED FOR CONSTRUCTION	JRA	DK	
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	



Dejian Xu

Digitally signed by Dejian Xu
COLLIERS ENGINEERING & DESIGN, INC.
F.L. License #: LB7388

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

SITE NAME:

HIGHWAY 441
5000125492

SR-6 HWY 441
WHITE SPRINGS, FL 32055
COLUMBIA COUNTY



Engineering & Design

NASHVILLE
5141 Virginia Way,
Suite 420
Brentwood, TN 37027
Phone: 615.686.2575
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER:
SBOM-1

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 ANSI/TIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-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, ANSI/TIA-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:

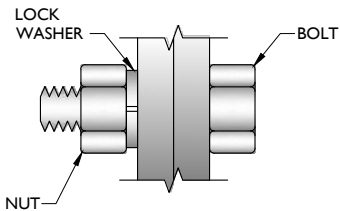
CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE
- ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING 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
ASHLEY.SUSTEK@COLLIERSENG.COM
 - PROVIDE COLLIERS ENGINEERING & DESIGN PROJECT # AND COLLIERS ENGINEERING & DESIGN 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.
- 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.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- 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 NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINC COTE, OR EOR APPROVED EQUAL), 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.

BOLT SCHEDULE (IN.)

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 1 1/16	7/8	1 1/2
5/8	1 1/16	1 1/16 x 7/8	1 1/8	1 7/8
3/4	1 3/16	1 3/16 x 1	1 1/4	2 1/4
7/8	1 5/16	1 5/16 x 1 1/8	1 1/2	2 5/8
1	1 7/16	1 7/16 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

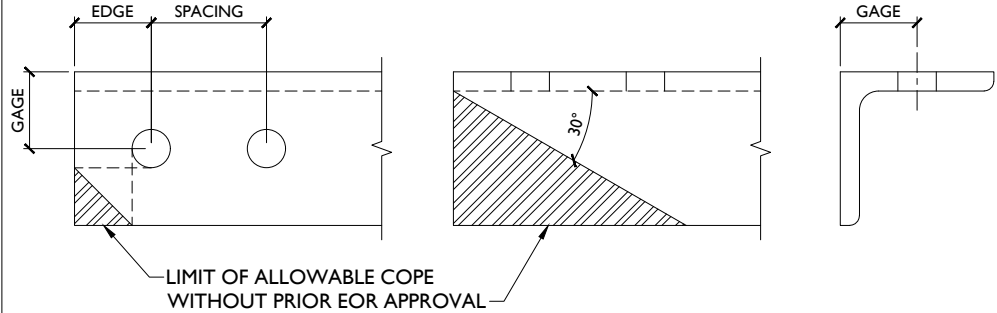


TYP. BOLT ASSEMBLY

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.

ALLOWABLE COPING



Engineering & Design

www.colliersengineering.com

Copyright © 2024, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is verified. This drawing may not be copied, revised, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

Doing Business as

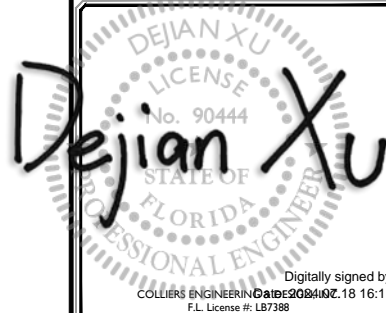


Know what's below.
Call before you dig.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT:
WWW.CALL811.COM

SCALE: AS SHOWN JOB NUMBER: 21944609

0	07/18/24	ISSUED FOR CONSTRUCTION	JRA	DK	
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	



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

SITE NAME:

HIGHWAY 441
5000125492

SR-6 HWY 441
WHITE SPRINGS, FL 32055
COLUMBIA COUNTY



Engineering & Design

NASHVILLE
5141 Virginia Way,
Suite 420
Brentwood, TN 37027
Phone: 615.686.2575
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

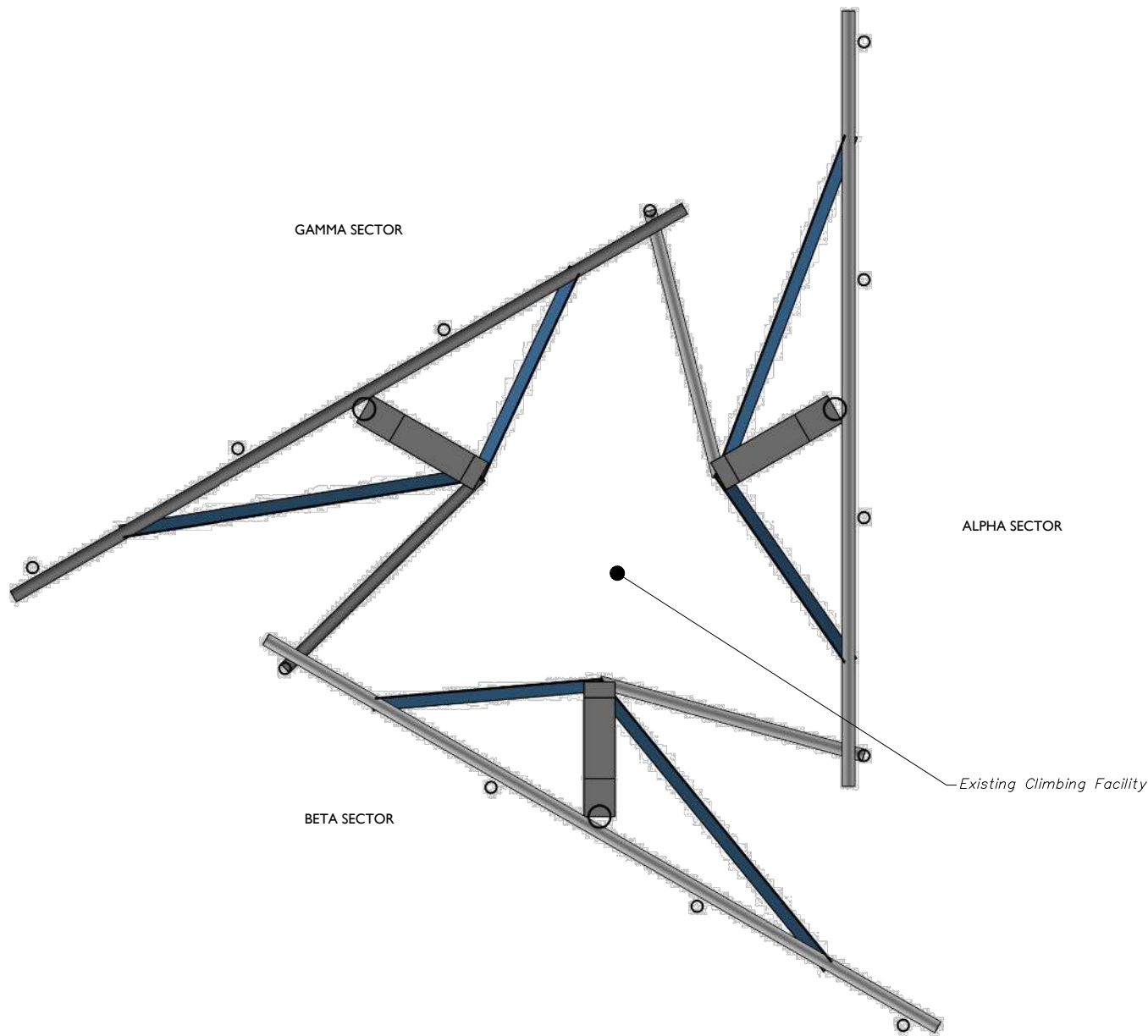
SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

SGN-I

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



1 CLIMBING FACILITY LOCATION
SCALE : N.T.S.

STRUCTURAL NOTES:

- PER THE MOUNT MAPPING COMPLETED BY TEP ON 3/31/2021, THE SAFETY CLIMB AND CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (295'-6") ARE IN GOOD CONDITION. COLLIERS ENGINEERING & DESIGN DOES NOT WARRANT THIS INFORMATION.
- 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.

Existing Safety Climb
Existing Climbing Facility



CLIMBING FACILITY PHOTO



Know what's below.
Call before you dig.

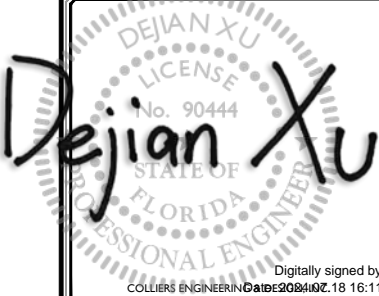
PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN JOB NUMBER: 21944609

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	07/18/24	ISSUED FOR CONSTRUCTION	JRA	DX



Digitally signed by Dejian Xu
COLLIERS ENGINEERING & DESIGN, INC.
F.L. License #: LB7388

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

SITE NAME:

HIGHWAY 441
5000125492

SR-6 HWY 441
WHITE SPRINGS, FL 32055
COLUMBIA COUNTY



Engineering & Design

NASHVILLE
5141 Virginia Way,
Suite 420
Brentwood, TN 37027
Phone: 615.686.2575
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
CLIMBING FACILITY DETAIL

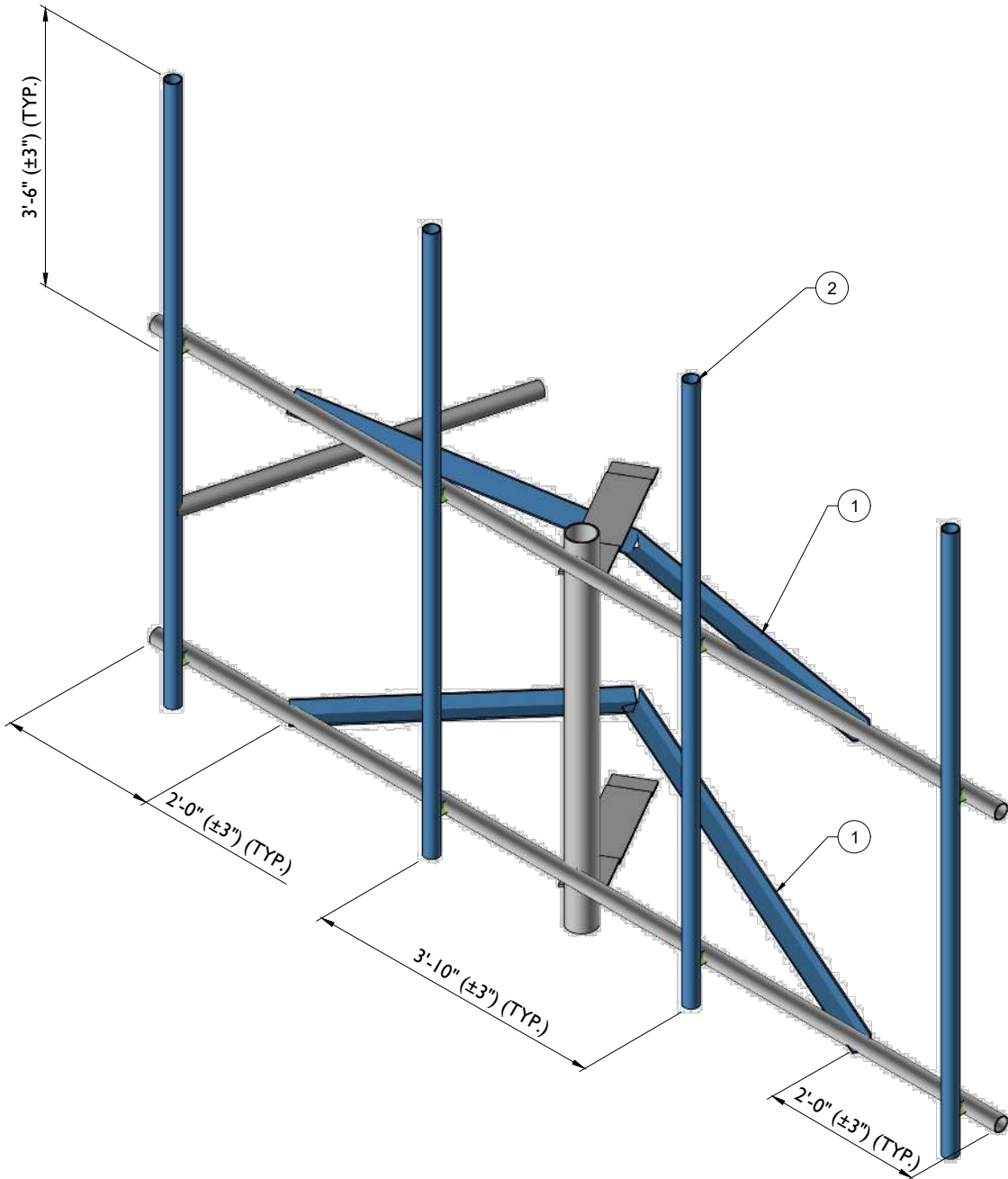
SHEET NUMBER:
SCF-I

LEGEND:

- PROPOSED
- RELOCATED
- EXISTING

TOTAL VERTICAL ENVELOPE:

CONTRACTOR SHALL VERIFY AND CONFIRM IN FIELD THAT VERIZON'S OVERALL TIP TO TIP VERTICAL SPACE CONFIGURATION (EQUIPMENT AND STEEL COMBINED) DOES NOT EXCEED THE VERTICAL ENVELOPE LISTED IN THESE DRAWINGS. IF THE SITE'S EXISTING OR PROPOSED CONFIGURATION EXCEEDS THE ALLOWED VERTICAL ENVELOPE LISTED IN THESE DRAWINGS, CONTRACTOR SHALL CONTACT EOR IMMEDIATELY FOR A SOLUTION ON HOW TO CORRECT THE ISSUE PRIOR TO LEAVING THE SITE.



PROPOSED ISOMETRIC VIEW (TYP. ALL SECTORS)

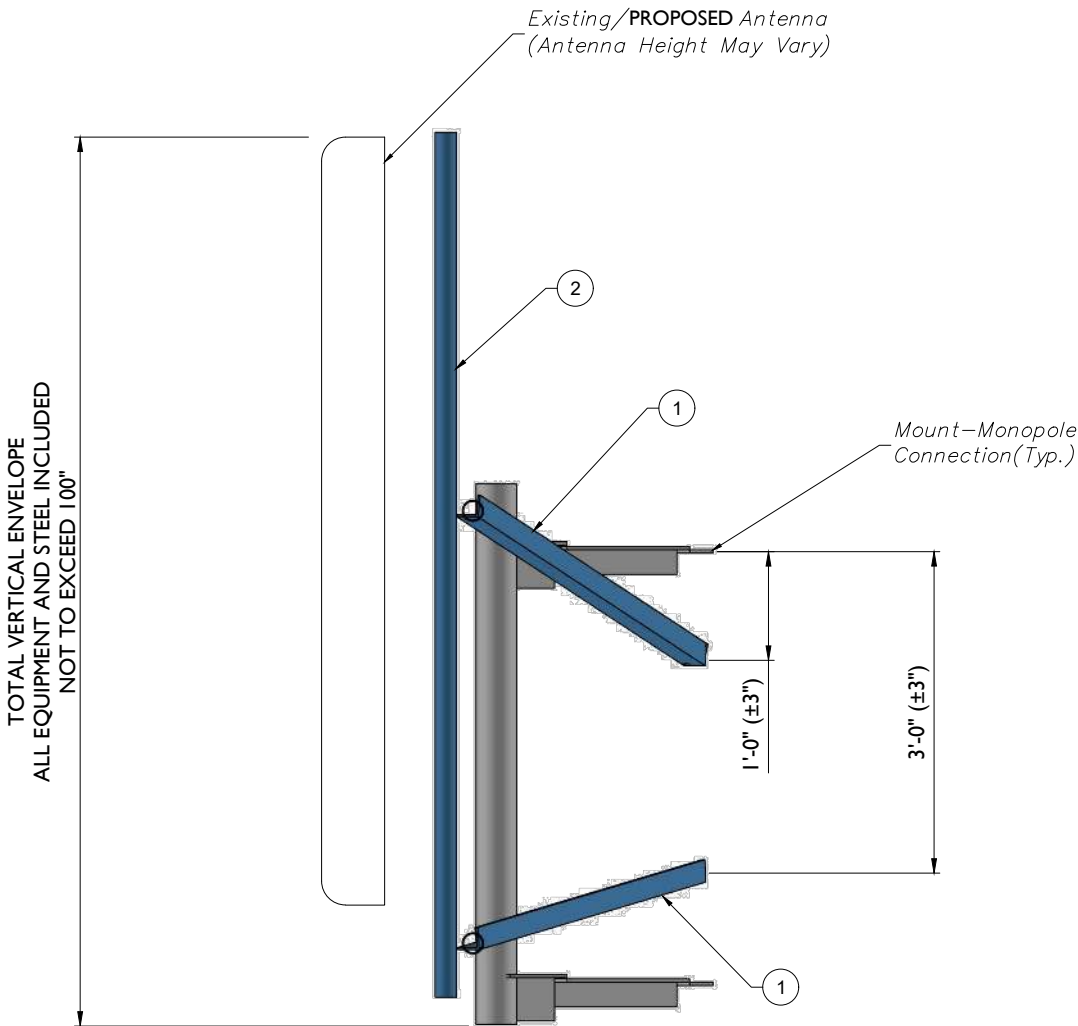
SCALE : N.T.S.

MOUNT MODIFICATION SCHEDULE

NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1	296'-6"	6	PROPOSED V-BRACING KIT (PART #: VZWSMART-SFK3)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-I. SEE GENERAL NOTE B. CONTRACTOR SHALL INSTALL ONE PROPOSED CLIP ANGLE (PART #:VZWSMART-AL333) AT EITHER END OF EACH LONG ANGLE IN THE SFK3 KIT.
2		12	PROPOSED 96" LONG, PIPE 2 SCH40 (PART #: VZWSMART-P40-238X096)	CONNECT NEW MOUNT PIPE TO EXISTING HORIZONTAL WITH CROSSOVER PLATES (PART #: VZWSMART-MSK1).

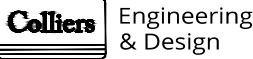
GENERAL NOTES:

- A. CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO EOR
- B. 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 (ZINC KOTE, OR EOR APPROVED EQUAL).
- C. MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.



PROPOSED SIDE ELEVATION VIEW (TYP. ALL SECTORS)

SCALE : N.T.S.



www.colliersengineering.com

Copyright © 2024, Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

Doing Business as MASER CONSULTING

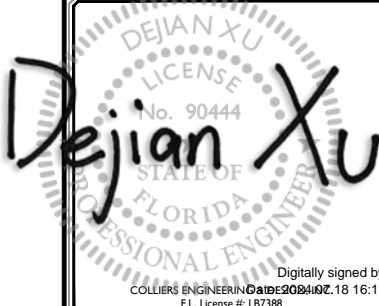


Know what's below. Call before you dig.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN JOB NUMBER: 21944609

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	07/18/24	ISSUED FOR CONSTRUCTION	JRA	DK



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

SITE NAME:

HIGHWAY 441
5000125492

SR-6 HWY 441
WHITE SPRINGS, FL 32055
COLUMBIA COUNTY



Engineering & Design

NASHVILLE
5141 Virginia Way,
Suite 420
Brentwood, TN 37027
Phone: 615.686.2575
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:

MODIFICATION DETAILS

SHEET NUMBER:

SS-1



MOUNT PHOTO 1



MOUNT PHOTO 2



MOUNT PHOTO 3



MOUNT PHOTO 4

Colliers

Engineering & Design

www.colliersengineering.com

Copyright © 2024. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

Doing Business as

MASER

CONSULTING

verizon

811

Know what's below.
Call before you dig.

PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE: AS SHOWN

JOB NUMBER: 21944609

0	07/18/24	ISSUED FOR CONSTRUCTION	JRA	DK	
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	

DEJIAN XU

LICENSE

No. 90444

STATE OF FLORIDA

PROFESSIONAL ENGINEER

Digitally signed by Dejian Xu
COLLIERS ENGINEERING & DESIGN, INC.
F.L. License #: LB7388

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

SITE NAME:

HIGHWAY 441
5000125492
SR-6 HWY 441
WHITE SPRINGS, FL 32055
COLUMBIA COUNTY

Colliers

Engineering & Design

NASHVILLE

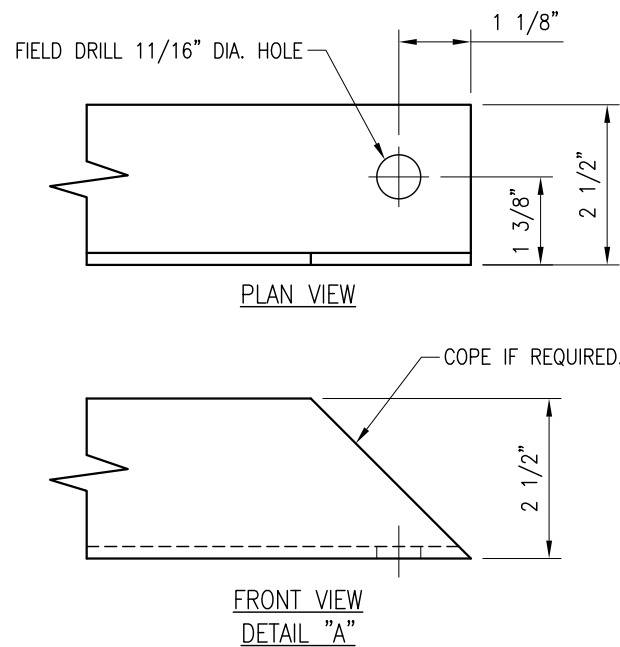
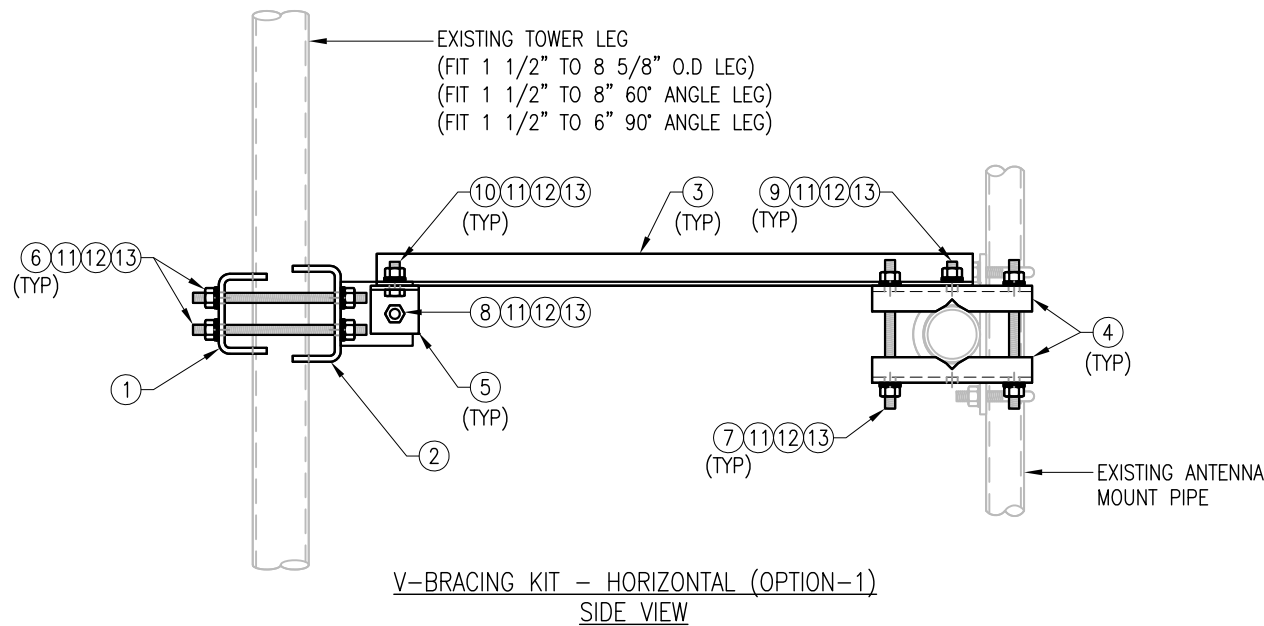
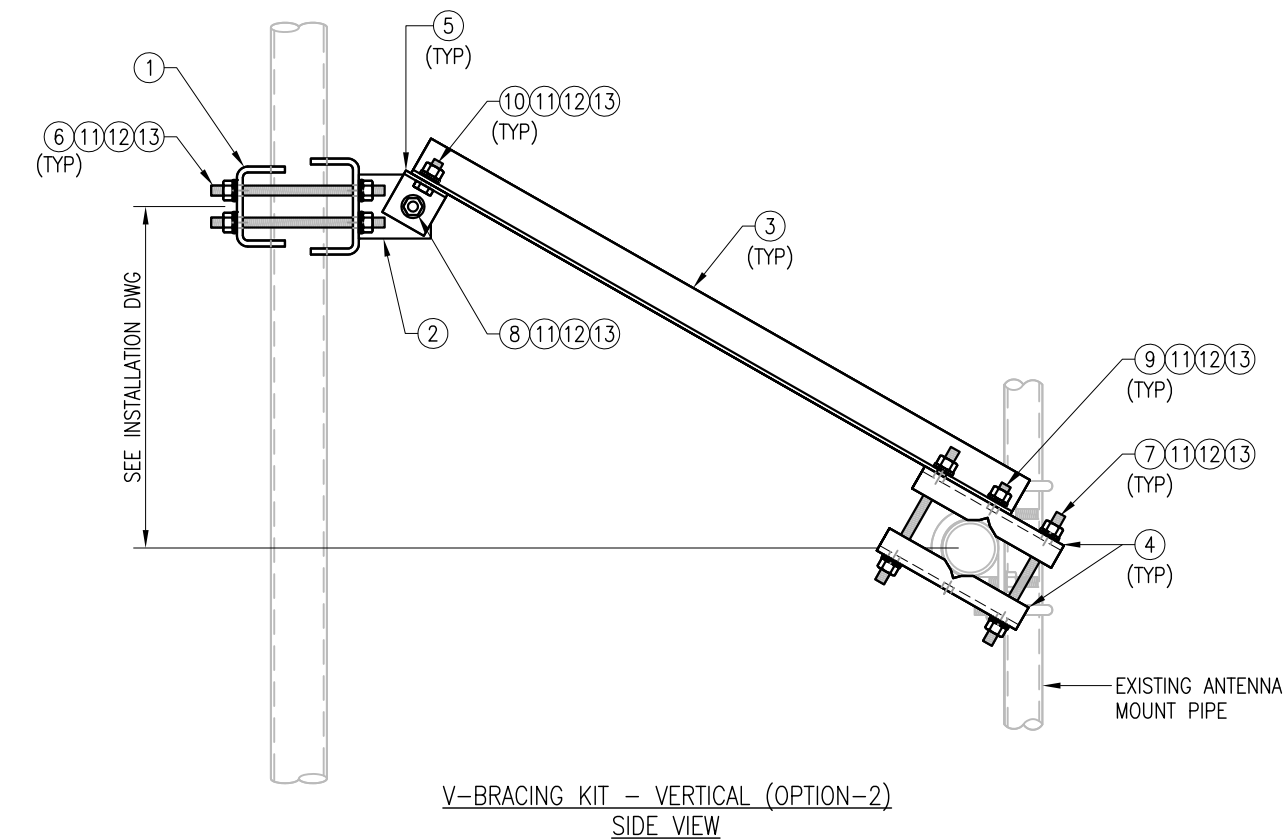
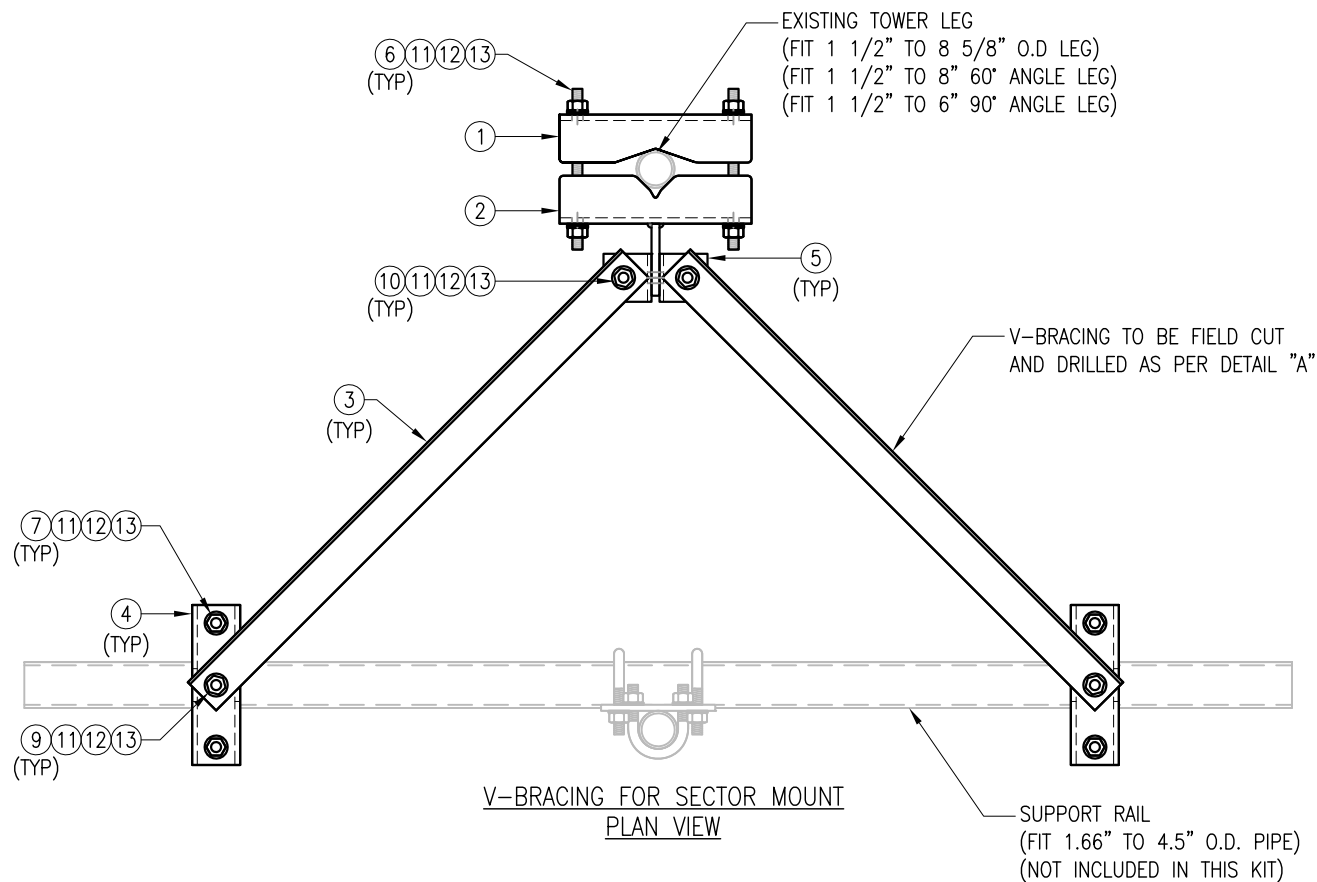
5141 Virginia Way,
Suite 420
Brentwood, TN 37027
Phone: 615.686.2575
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:

MOUNT PHOTOS

SHEET NUMBER:

SS-2



VZSMART-SFK3 (V-BRACING KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	BP9625-12	PL 3/8" X 9 5/8" X 1'-0" A36 BENT PLATE	VBSM-F1	12
2	1	BRKW-VBSM	WELDMENT BRACKET	VBSM-F3	16
3	2	L252525-8	L 2 1/2" X 2 1/2" X 1/4" X 8'-0" A36	VBSM-F5	67
4	4	BP6875-10	PL 3/8" X 6 7/8" X 10" A36 BENT PLATE	VBSM-F2	20
5	2	AL-333	L 3" X 3" X 1/4" X 3" A36	VBSM-F2	3
6	4	---	THREADED ROD 5/8" DIA. X 1'-6" F1554-36 HDG	---	---
7	4	---	THREADED ROD 5/8" DIA. X 10" F1554-36 HDG	---	---
8	1	---	BOLT 5/8" X 2 1/4" A325	---	---
9	2	---	BOLT 5/8" X 2" A325	---	---
10	2	---	BOLT 5/8" X 1 3/4" A325	---	---
11	21	FW-625	5/8" HDG USS FLAT WASHER	---	2
12	21	LW-625	5/8" HDG LOCK WASHER	---	0
13	21	NUT-625	5/8" HDG HEX NUT	---	2
GALVANIZED WT					122

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

VzW
SMART Tool[®]
Vendor

verizon

FOR REFERENCE
ONLY

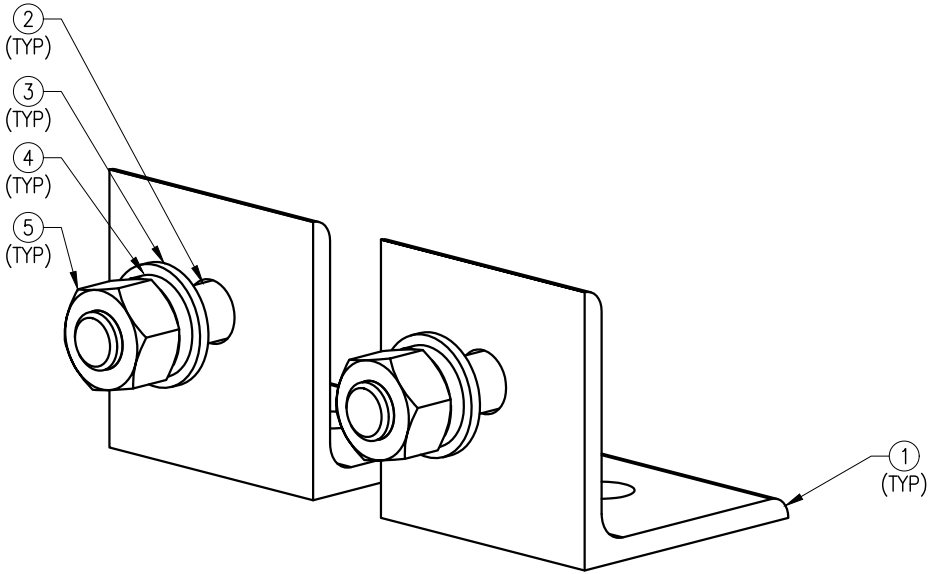
DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/20
2			
3			
4			

SHEET TITLE:
VZSMART-SFK3
V-BRACING KIT

SHEET NUMBER:
VZSMART-SFK3

REV #:
0



CLIP ANGLE
ISOMETRIC VIEW

FOR REFERENCE
ONLY

DRAWN BY: JBM CHECKED BY: ----

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	JBM	10/08/21

SHEET TITLE:

VZWSMART-AL333
CLIP ANGLE

SHEET NUMBER: VZWSMART-AL333	REV #: 0
---------------------------------	-------------

VZWSMART-AL333 (CLIP ANGLE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	2	AL-333	L 3" X 3" X 1/4" X 3" A36	AL333-F1	2.50
2	2	---	BOLT 5/8" X 2" FULL THREAD SAE GR-5	---	0.77
3	2	FW-625	5/8" HDG USS FLAT WASHER	---	0
4	2	LW-625	5/8" HDG LOCK WASHER	---	0
5	2	NUT-625	5/8" HDG HEX NUT	---	0
GALVANIZED WT					3.27

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



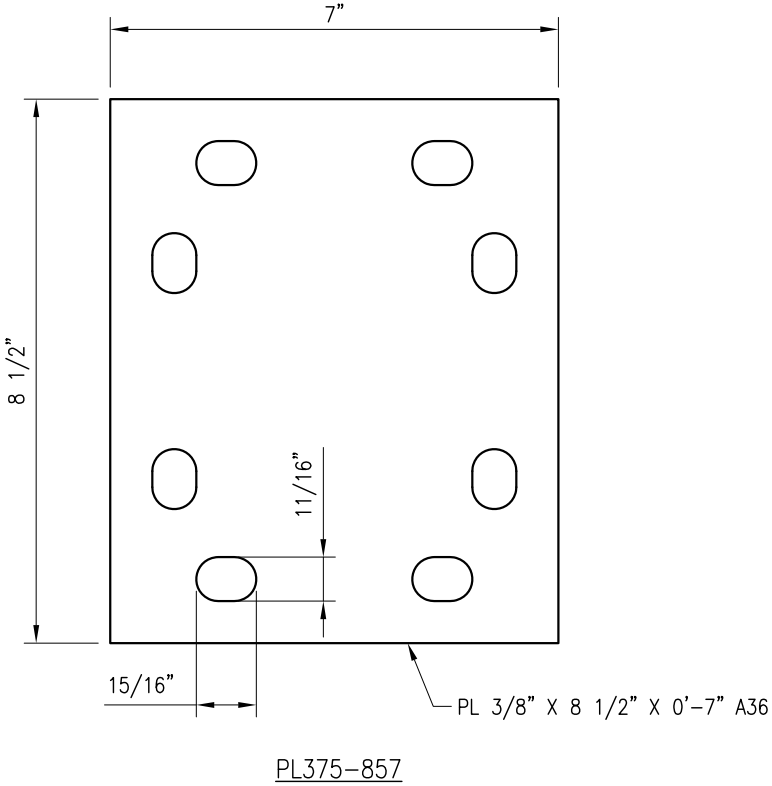
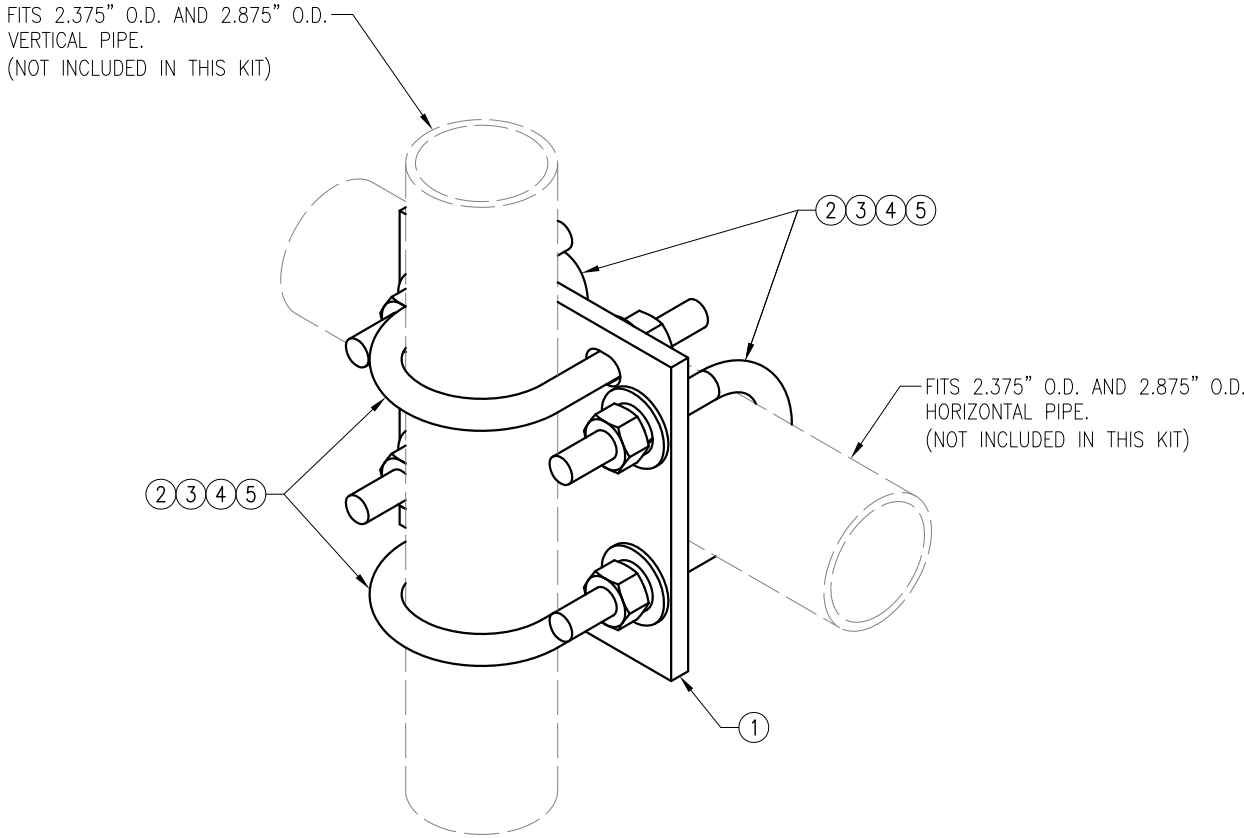
FOR REFERENCE
ONLY

DRAWN BY: H.R		CHECKED BY: HMA	
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	H.R.	05/08/20
1			
2			
3			
4			

SHEET TITLE:

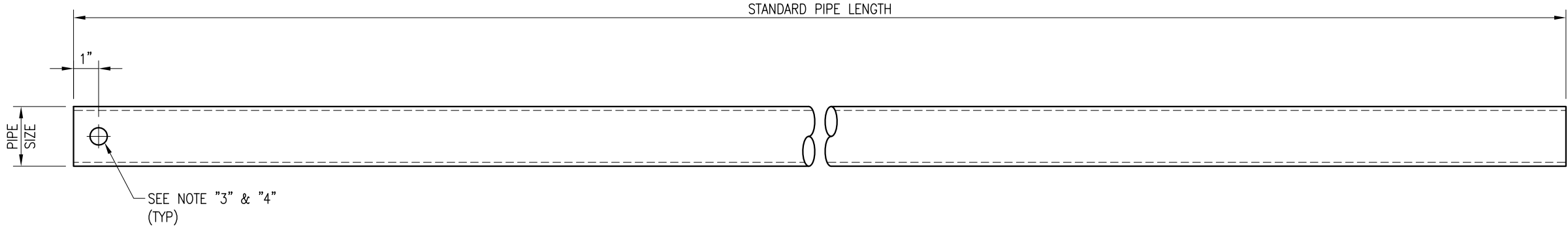
VZWSMART-MSK1
CROSSOVER PLATE

SHEET NUMBER:	REV #:
VZWSMART-MSK1	0



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

VZWSMART-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" I.W. X 5" I.L. 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



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.

VzW
SMART Tool[©]
Vendor



FOR REFERENCE
ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

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

SHEET TITLE:

VZWSMART
STANDARD PIPE

SHEET NUMBER: REV #:

VZWSMART-PIPE 0