THIRD AMENDMENT TO LEASE AGREEMENT

THIS THIRD AMENDMENT TO LEASE AGREEMENT ("Third Amendment") is made this _____ day of _____, 20___, by and between City of Milwaukee, a Wisconsin municipal corporation ("Lessor") and Cellco Partnership d/b/a Verizon Wireless, with its principal offices located at One Verizon Way, Mailstop 4AW100, Basking Ridge, New Jersey 07920 ("Lessee").

Whereas, Lessor and Lessee previously entered into that certain Lease Agreement dated June 6, 2001, as amended by that certain Amendment to Lease Agreement dated December 6, 2013 and by that certain Second Amendment to Lease Agreement dated _____ (collectively, the "Agreement") which provides for the location, installation, and operation of Lessee's communications equipment within the Leased Space on real property owned by Lessor located at 8841 W. Lisbon Avenue, City of Milwaukee, County of Milwaukee, Wisconsin ("Property"); and

Whereas, Lessee is the successor in interest to Verizon Wireless Personal Communications LP d/b/a Verizon Wireless; and

Whereas, Lessee wishes to reconfigure its equipment installation on the Leased Premises; and

Whereas, Lessor agrees that Lessee shall be entitled to modify its equipment at the Leased Space; and

Whereas, Lessor and Lessee wish to amend the Lease in order to address the above item and reach new agreements with respect to the same.

NOW THEREFORE, in consideration of the promises hereinafter made and other good and valuable consideration, the receipt of which is hereby acknowledged, Lessor and Lessee agree as follows:

1. Revised Equipment Installation and Addition of Exhibit B-3 to Lease. Lessee shall be allowed to make the equipment additions or removals necessary to configure Lessee's equipment as shown on Exhibit B-3, attached hereto. Exhibit B-2 of the Lease is hereby deleted and replaced with the attached Exhibit B-3, which reflects the modified equipment that Lessee shall be permitted to install, operate, replace, and maintain within the Leased Space. Provided that Lessee has received all necessary permits and approvals from the appropriate governing bodies, Lessee may immediately commence installation of the modifications as depicted on Exhibit B-3. Lessor agrees that the installation plan in the attached Exhibit B-3 depicting the location and manned of Lessee's equipment installation is acceptable.

2. All defied terms referenced in this Third Amendment shall have the meaning as stated and defined in the Agreement.

3. Other than as specifically amended herein, all other terms and conditions of the Lease shall remain in full force and effect. Where there is conflict between the terms of the Lease and this Fifth Amendment, the terms of this Fifth Amendment shall control. Unless otherwise indicated or introduced in this Fifth Amendment, all defined terms referenced in the Fifth Amendment shall have the same meaning as those found in the Lease.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the parties hereto have executed in duplicate this Third Amendment on the day and year first written above.

LESSEE:

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

Name: _____
Title: _____
Date: _____

LESSOR:

CITY OF MILWAUKEE

By: _____
Cavalier Johnson, Mayor

By: _____
James Owczarski, City Clerk

COUNTERSIGNED

By: _____
Bill Christianson, City Comptroller
Date: _____

Signatures of Cavalier Johnson, Mayor; and James R. Owczarski, City Clerk; and Bill Christianson, Comptroller authenticated this _____ day of _____, 2025.

_____
Jordan M. Schettle, Assistant City Attorney
State Bar No. 1104571

Approved as to form and execution
This ____ day of _____, 2025.

_____
Jordan M. Schettle
Assistant City Attorney, State Bar No. 1104571

EXHIBIT B-3

(Description of revised Lessee's Equipment)

MDG LOCATION # / LOCATION CODE
5000166634 / 112368

FUZE PROJECT NUMBER
17292961

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

ALL ACCESS HOME MODIFICATION PROJECT

SITE NAME
88TH & LISBON MFD

SITE ADDRESS
8814 W LISBON AVE
MILWAUKEE, WI 53222

SCOPE OF WORK

1. INSTALLATION OF (4) NEW CBNG ANTENNAS W/INTEGRATED RADIOS
2. INSTALLATION OF (4) NEW BREAKERS FOR NEW ANTENNAS
3. INSTALLATION OF (1) NEW PIPE TO PIPE MOUNT KIT
4. INSTALLATION OF (1) NEW HYBRID CABLE
5. INSTALLATION OF (2) NEW RAYCAP UNITS

DRIVING DIRECTIONS

DRIVING DIRECTIONS FROM 1701 GOLF RD, ROLLING MEADOWS, IL

1. HEAD SOUTHEAST TOWARD MEIJER DR, 0.1 MI
2. SLIGHT LEFT TOWARD MEIJER DR, 177 FT
3. TURN LEFT TOWARD MEIJER DR, 456 FT
4. TURN RIGHT ONTO MEIJER DR, 0.3 MI
5. TURN RIGHT ONTO IL-62 E/W ALGONQUIN RD, 0.6 MI
6. TURN RIGHT ONTO S ARLINGTON HEIGHTS RD, 0.3 MI
7. SLIGHT RIGHT TO MERGE ONTO I-90 E TOWARD CHICAGO, 0.3 MI
8. MERGE ONTO I-90 E, 7.1 MI
9. TAKE EXIT 77B FOR I-294 TOLL N TOWARD WISCONSIN, 0.2 MI
10. MERGE ONTO I-294 N, 12.8 MI
11. CONTINUE ONTO I-94 W, 19.4 MI
12. CONTINUE STRAIGHT TO STAY ON I-94 W, 36.6 MI
13. KEEP LEFT TO STAY ON I-94 W, 2.6 MI
14. CONTINUE ONTO I-43 N, 4.2 MI
15. TAKE THE EXIT ONTO I-94 W TOWARD MADISON, 2.6 MI
16. TAKE EXIT 308C FOR ROUTE 175 N, 0.2 MI
17. MERGE ONTO WI-175, 1.7 MI
18. USE THE LEFT 2 LANES TO TURN LEFT ONTO W LISBON AVE, 0.8 MI
19. CONTINUE STRAIGHT TO STAY ON W LISBON AVE, 2.3 MI

DESTINATION WILL BE ON THE RIGHT
TOTAL TRAVEL ESTIMATE: 92.2 MILES, 1 HRS 30 MINUTES

SHEET INDEX

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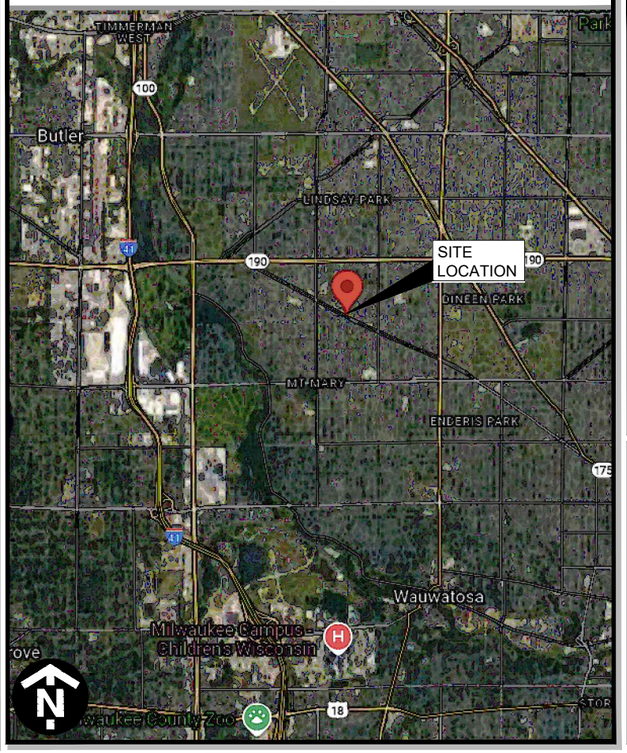
PL-1	SITE PHOTO LOG
	ANTENNA MOUNT ANALYSIS REPORT (BY OTHERS)

811 Know what's below. Call DIGGER before you dig.
811 OR (800) 242-8511

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS AT THE PROJECT SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GC SHALL CONTACT THE A&E FIRM PRIOR TO BID WALK AND CONSTRUCTION START TO CONFIRM THAT DRAWINGS ARE THE MOST RECENT SET.

REGIONAL MAP



APPLICABLE CODES

CODES:
ALL WORK AND MATERIALS SHALL BE PERFORMED AND 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 THE LATEST EDITIONS OF THE FOLLOWING:

1. INTERNATIONAL BUILDING CODE (IBC 2015)
2. NATIONAL ELECTRIC CODE (NEC 2017)
3. INTERNATIONAL FIRE CODE (IFC 2015)
4. INTERNATIONAL MECHANICAL CODE (IMC 2015)
5. INTERNATIONAL FUEL GAS CODE (IFGC 2015)
6. INTERNATIONAL ENERGY CONSERVATION CODE 2015
7. PLUMBING CODE 2014
8. AMERICAN CONCRETE INSTITUTE (ACI) 318,
9. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
10. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
11. TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G
12. TIA 607
13. 2009 NFPA101 LIFE SAFETY CODE
14. INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
15. IEEE C2 NATIONAL ELECTRIC SAFETY CODE
16. TELECORDIA GR-1275
17. ANSI/T 311
18. LOCAL BUILDING CODE
19. CITY/COUNTY ORDINANCES
20. STATE BUILDING CODE

GENERAL NOTES

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS AT THE PROJECT SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

FOR SITES WHERE A CRANE IS NECESSARY, THE CONTRACTOR SHALL CONFIRM AN UNOBSTRUCTED ROUTE FOR THE CRANE FROM PUBLIC ROAD TO TOWER SITE PRIOR TO CONSTRUCTION. NO AERIAL OBSTRUCTIONS UNDER FIFTEEN FEET ABOVE GRADE, INCLUDING AERIAL UTILITY LINES, ARE ALLOWED ALONG SAID CRANE ROUTE.

GC SHALL CONTACT THE A&E FIRM PRIOR TO BIDWALK AND CONSTRUCTION START TO CONFIRM THAT DRAWINGS ARE THE MOST RECENT SET.

SITE INFORMATION

LATITUDE:	N 43°05' 00.33" / 43.083425 (NAD 83)
LONGITUDE:	W 88°01' 21.30" / -88.022583 (NAD 83)
GROUND ELEV:	754.6' AMSL (NAVD 88)
SITE TYPE:	MONOPOLE
JURISDICTION:	CITY OF MILWAUKEE
COUNTY:	MILWAUKEE

PROJECT CONTACTS

APPLICANTS:	CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS 1701 GOLF RD, TOWER 2, SUITE 400 ROLLING MEADOWS, IL 60008	ENGINEERING & SURVEYING:	CONCORDIA WIRELESS, INC. GM SADAT, PE 361 RANDY ROAD, UNIT 101 CAROL STREAM, IL 60188 PHONE: (847) 708-7500 FAX: (847) 589-0643
PROJECT MANAGER:	EDWARD RIOS PHONE: (630) 202-0565	ENGINEERING CONTACT:	PATRYK STELMASZAK PHONE: (847) 774-1389
TOWER OWNER:	CITY OF MILWAUKEE	SITE ACQUISITION CONTACT:	ERIC MANGAN PHONE: (630) 550-0619
TOWER OWNER CONTACT:	CITY OF MILWAUKEE FIRE DEPARTMENT (414) 286-8949		

PROFESSIONAL LICENSURE

I CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF THE GOVERNING LOCAL BUILDING CODE.

LICENSED PROFESSIONAL ENGINEER
STATE OF WISCONSIN LICENSE # 40304-6

EXPIRES: 07/31/2026 SIGNED: 12/13/2024

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

CHECKED BY: RH	CHECKED BY: GMS

ISSUED FOR:
FINAL CDs

NO.	REVISION/ISSUE	DATE	INITIALS
A	FINAL CDs	12/13/24	SHK/PM

WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

GENERAL NOTES

1. DO NOT SCALE DRAWINGS

2. REPRESENTATIVES OF THE OWNER MUST BE NOTIFIED AT LEAST TWO FULL DAYS PRIOR TO CONSTRUCTION.

3. THE BUILDING DEPARTMENT ISSUING THE BUILDING PERMIT SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK OR AS STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.

4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL 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.

5. VERIZON WIRELESS FURNISHED EQUIPMENT SHALL BE PICKED UP AT THE VERIZON WIRELESS WAREHOUSE, NO LATER THAN 48HRS AFTER BEING NOTIFIED EQUIPMENT IS INSURED, UNCRATED, PROTECTED AND READY TO BE 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.

6. ALL EQUIPMENT FURNISHED AND WORK PERFORMED UNDER THE CONTRACT DOCUMENTS SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS NOTED OTHERWISE. ANY FAILURE OF EQUIPMENT OR WORK DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE OWNER.

7. ALL WORK, MATERIALS, AND EQUIPMENT SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), OSHA, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES. ALL ELECTRICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE NEW (EXCEPT WHERE OTHERWISE NOTED) AND SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITER'S LABORATIES (UL) AND BEAR THE UL LABEL.

8. VERIZON WIRELESS AND ITS ARCHITECT/ENGINEER RESERVE THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH THE EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO THE OWNER OR HIS ARCHITECT/ENGINEER.

9. THE CONTRACTOR SHALL SUPPORT, BRACE, AND SECURE THE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING STRUCTURES DURING CONSTRUCTION. FIELD VERIFY ALL EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION.

10. THE CONTRACTOR SHALL NOT ALLOW OR CAUSE ANY OF THE WORK TO BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN INSPECTED BY THE GOVERNING AUTHORITIES. ANY WORK THAT IS ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST SHALL BE UNCOVERED AT THE CONTRACTOR'S EXPENSE. AFTER IT HAS BEEN INSPECTED, THE CONTRACTOR SHALL RESTORE THE WORK TO ITS ORIGINAL CONDITIONS AT HIS OWN EXPENSE.

11. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY THE CONTRACTOR WITH LOCAL GAS, ELECTRIC, TELEPHONE, AND OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.

12. DURING CONSTRUCTION, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE UTILITIES OF THE BUILDING/SITE WITHOUT INTERRUPTION. SHOULD IT BE NECESSARY TO INTERRUPT ANY SERVICE OR UTILITY, THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM THE BUILDING/PROPERTY OWNER FOR SUCH INTERRUPTION, AT LEAST 72 HOURS IN ADVANCE. ANY INTERRUPTION SHALL BE MADE WITH A MINIMUM AMOUNT OF INCONVENIENCE TO THE BUILDING/PROPERTY OWNER AND ANY SUCH SHUTDOWN TIME SHALL BE COORDINATED WITH THE BUILDING/PROPERTY OWNER.

13. CHANGE-ORDER REQUESTS MUST BE PRESENTED IN WRITING TO THE OWNER'S REPRESENTATIVE AND APPROVED PRIOR TO PROCEEDING WITH THE REQUESTED CHANGE. DOCUMENTATION CONCERNING AND AND ALL CHANGE ORDERS WILL BE TREATED AS LEGAL DOCUMENTS AND ARE TO BE FILLED WIT THE OWNER'S REPRESENTATIVE FOR FUTURE REFERENCE.

14. CONTRACTOR SHALL MINIMIZE THE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. CONTRACTOR SHALL USE EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION.

15. CONTRACTOR WILL NOT START CONSTRUCTION UNTIL AFTER THEY RECEIVE THE PRE-CON PACKAGE AND HAVE A PRE-CON WALK WITH THE PROJECT MANAGER.

16. CONTRACTOR SHALL SUBMIT AT THE END OF THE PROJECT A COMPLETE SET OF AS-BUILT DRAWINGS TO VERIZON WIRELESS.

SITE WORK

1. WORK SHALL NOT BE STARTED PRIOR TO PERMIT ACQUISITION, ANY INFORMATION REQUIRED BY THE PERMITTING AGENCY SHALL BE PROVIDED BY THE CONTRACTOR TO SECURE ALL PERMITS.

2. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.

3. ANY DRAIN AND/OR FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE RETURNED TO ITS ORIGINAL CONDITIONS PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-CONSTRUCTED DRAWINGS AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.

4. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT/ENGINEER AND OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.

5. CONTRACTORS SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE. CONTRACTOR SHALL CALL 811 FOR UTILITY LOCATIONS 48 HOURS PRIOR TO START OF CONSTRUCTION.

6. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.

7. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.

8. ALL EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC. SHALL BE PROPERLY LAID BACK AND BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.

9. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 100% OF MAXIMUM STANDARD PROCTOR DRY DENSITY.

10. NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE ACHIEVED BY FILLING WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY

11. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS THICKNESS SHALL NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE EQUIPMENT AVAILABLE.

12. ANY FILLS PLACED ON EXISTING SLOPED THAT ARE STEEPER THAN 10:1 (H:V) SHALL BE PROPERLY BENCHED INTO THE EXISTING SLOPE AS DIRECTED BY A GEOTECHNICAL ENGINEER.

13. THE GRADES WITHIN A FENCED-IN AREA ARE TO BE ACHIEVED BY COMPACTING CLEAN FILL TO A DENSITY OF 90% OF STANDARD PROCTOR COVERING THE AREA WITH 6 MIL. VISQUEEN (1-FT OVERLAP AT SEAMS) FOR WEED SUPPRESSION, THEN ACHIEVING FINISH GRADE BY ADDING 6" OF 3/4" CRUSHED STONE - NO FINES.

14. CONTRACTOR SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SO THAT NO PAPERS, TRASH, WEEDS, BRUSH OR ANY OTHER DEPOSITS WILL REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE DISPOSED OF OFF-SITE.

15. ALL TREE AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH THE IMPROVEMENTS SHALL BE PROTECTED.

16. GC TO HIRE JULIE & PRIVATE LOCATE SERVICE IN ORDER TO LOCATE AND PROTECT ANY AND ALL SUBSURFACE UTILITIES. DO NOT SCALE OFF THESE PLANS FOR ANY BELOW GRADE UTILITIES.

17. THESE PLANS MAY NOT CONTAIN OR REVEAL ALL THE SUBSURFACE UTILITIES. GC IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION.

18. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION. ALL EXISTING ACTIVE SEWER, GAS, ELECTRIC, AND OTHER UTILITIES ENCOUNTERED IN THE WORK SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE PROJECT MANAGER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATION OR PIER DRILLING NEAR OR AROUND UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL, INCLUDE, BUT IS NOT LIMITED TO:

   A. FALL PROTECTION
   B. CONFINED SPACE
   C. ELECTRICAL SAFETY
   D. TRENCHING AND EXCAVATION

19. REMOVE FROM THE SITE/OWNER'S PROPERTY ALL WASTE MATERIALS, UNUSED EXCAVATED MATERIAL INCLUDING MATERIAL CLASSIFIED AS UNSATISFACTORY, CONTAMINATED OR DANGEROUS TRASH AND DEBRIS, AND DISPOSE OF IN A LEGAL MANNER.

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

21. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK ARE NOT COVERED BY THE BUILDING OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH.

22. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION AND IMPLEMENT EROSION CONTROL MEASURES, AS REQUIRED DURING CONSTRUCTION

23. CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND CONSTRUCTION STAKING. CONTRACTOR SHALL ESTABLISH GRADE AND LINE STAKES PRIOR TO CONSTRUCTION.

24. CONCORDIA WIRELESS DOES NOT GUARANTEE OR WARRANT THE THE AFOREMENTIONED EASEMENTS ARE SUFFICIENT FOR CONSTRUCTION TRAFFIC. GC SHALL CONSULT WITH A VERIZON WIRELESS REPRESENTATIVE AND LANDLORD WITH EXACT LOGISTICS TO FACILITATE CONTRACTIBILITY OF THE SITE AND DELIVERY OF CRITICAL MATERIALS SUCH AS THE TOWER, STEEL, CONCRETE AND CRANES TO THE PROPOSED LEASE AREA. GC SHALL RESTORE SITE TO ORIGINAL CONDITIONS AND REPLACE ANY AND ALL DISTURBED TREE OR LANDSCAPING.

25. CONCORDIA WIRELESS IS NOT RESPONSIBLE FOR THE MAINTENANCE AND/OR OPERATIONAL FEASIBILITY.

26. SCOPE OF WORK FOR THESE PLANS DOES NOT INVOLVE VALUE ENGINEERING, MAINTAINABILITY OF THE SITE ACCESS OR UTILITIES.

27. THE ENGINEER WILL NOT BE RESPONSIBLE OR LIABLE FOR ERRORS OR NEGLIGENT ACTS OF OMISSIONS OF ANY CONTRACTOR, SUBCONTRACTOR, OR ANY OF THE CONTRACTORS' OR SUBCONTRACTORS' EMPLOYEES OR AGENTS OR ANY OTHER PERSONS (EXCLUDING ENGINEER'S OWN EMPLOYEES) AT THE CONSTRUCTION SITE OR OTHERWISE PERFORMING ANY OF THE PROJECT WORK. CONTRACTORS, SUBCONTRACTORS, AND ENGINEERS WILL BE RESPONSIBLE FOR THEIR OWN SAFETY PROGRAM. NEITHER THE PROFESSIONAL ACTION OF THE ENGINEER, NOR THE PRESENCE OF THE ENGINEER OR HIS OR HER EMPLOYEES AND SUBCONSULTANTS AT THE CONSTRUCTION SITE SHALL RELIEVE ANY CONTRACTOR OF HIS OR HER OBLIGATIONS, DUTIES, AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING, OR COORDINATING ALL PORTIONS OF THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND HIS OR HER PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH ANY HEALTH OR SAFETY PRECAUTIONS.

CONCRETE

1. MINIMUM ALLOWABLE CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS METHODS STANDARDS ASTM C172, ASTM C31 AND ASTM C39 UNLESS OTHERWISE NOTED.

2. CONCRETE FOR ALL FOUNDATIONS: 540 LBS. PER CUBIC YARD OF CONCRETE MINIMUM CEMENT CONTENT FOR ONE INCH MAXIMUM SIZE AGGREGATE, SLUMP RANGE THREE TO FIVE INCHES, TOTAL AIR CONTENT FOUR TO SEVEN PERCENT BY VOLUME. AIR ENTRAINING ADMIXTURE REQUIRED TO CONTROL TOTAL AIR CONTENT, WATER REDUCING ADMIXTURE PERMITTED TO OBTAIN SLUMP OVER THREE INCHES.

3. ALL CONCRETE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI 318) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND (ACI 301) STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE.

4. REBARS SHALL BE ASTM A-615 DEFORMED TYPE WITH MINIMUM YIELD STRENGTH OF 60,000 PSI (40,000 PSI GRADE MAY BE USED FOR TIES AND STIRRUPS). WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.

5. DETAILING SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OF DETAILING REINFORCED CONCRETE STRUCTURES (ACI STD-315 LATEST EDITION).

6. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4". UNLESS OTHERWISE NOTED.

7. REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SECURED IN POSITION. LOCATION OF REINFORCEMENT SHALL BE INDICATED ON THE DRAWINGS. THE FOLLOWING MINIMUM COVER (INCHES) FOR REINFORCEMENT SHALL BE PROVIDED, EXCEPT AS NOTED ON DRAWINGS.

   A. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH - 3"
   B. EXPOSED TO EARTH OR WEATHER, #6 THROUGH #18 - 2"
   C. EXPOSED TO EARTH OR WEATHER, #5 AND SMALLER - 1-1/2"

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

   A. FIVE CONCRETE TEST CYLINDERS SHALL BE TAKEN OF THE TOWER PIER FOUNDATION. TWO SHALL BE TESTED AT THREE DAYS, TWO SHALL BE TESTED AT 28 DAYS. THE FIFTH CYLINDER SHALL BE KEPT SEPARATELY, IF REQUIRED TO BE USED IN THE FUTURE.

   B. ONE ADDITIONAL TEST CYLINDER SHALL BE TAKEN DURING COLD WEATHER AND CURED ON SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.

   C. ONE SLUMP TEST SHALL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.

9. PLACING CONCRETE:

   A. THE ENGINEER SHALL BE NOTIFIED NOT LESS THAN 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT, UNLESS INSPECTION IS WAVED IN EACH CASE. PLACING OF CONCRETE SHALL BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER. CONCRETE SHALL NOT BE PLACED UNTIL ALL FRAMEWORK, EMBEDDED PARTS, STEEL REINFORCEMENT, FOUNDATION SURFACES AND JOINTS INVOLVED IN THE PLACING HAVE BEEN APPROVED, AND UNTIL FACILITIES ACCEPTABLE TO THE VERIZON WIRELESS REPRESENTATIVE HAVE BEEN PROVIDED AND MADE READY FOR ACCOMPLISHMENT OF THE WORK AS SPECIFIED. CONCRETE MAY NOT BE ORDERED FOR PLACEMENT UNTIL ALL ITEMS HAVE BEEN APPROVED AND VERIZON WIRELESS HAS PERFORMED A FINAL INSPECTION AND GIVEN APPROVAL TO START PLACEMENT IN WRITING.

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

10. PROTECTION:

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

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

   C. ALL CONCRETE SHALL BE WATER CURED BY CONTINUOUS (NOT PERIODIC) FIN MIST SPRAYING OR SPRINKLING ALL EXPOSED SURFACES. WATER SHALL BE CLEAN AND FREE FROM ACID, ALKALI, SALTS OIL SEDIMENT, AND ORGANIC MATTER. SUCCESSFUL CURING SHALL BE OBTAINED BY USE OF AN AMPLE WATER SUPPLY UNDER PRESSURE IN PIPES, WITH ALL NECESSARY APPLIANCES OF SPRINKLES AND SPRAYING DEVICES.

   D. 13.THE CONCRETE CONTRACTOR SHALL PREPARE, DOCUMENT, AND SUBMIT TO THE ARCHITECT FOR REVIEW A PROGRAM FOR PROVIDING COLD WEATHER PROTECTION INCLUDING METHODS OF WEATHER ENCLOSURE, HEATING METHODS, AND CONTINUOUS TEMPERATURE MONITORING SYSTEMS.

STRUCTURAL STEEL

1. DETAIL FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE LATEST AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, AWS D1.1 AND THE BASIC BUILDING CODE. STRUCTURAL STEEL SHALL BE AS FOLLOWS:

   A. ASTM A36, GRADE 36; ROLLED STEEL, RODS, PLATES, U-BOLTS AND ANCHOR BOLTS
   B. ASTM A325 BOLTS, BEARING TYPE
   C. ALL STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.

2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.

3. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER AND VERIZON WIRELESS PROJECT MANAGER IN WRITING.

4. TIGHTEN HIGH STRENGTH BOLTS TO A SNUG, TIGHT CONDITION WHERE ALL PLIES IN A JOINT ARE IN FIRM CONTACT BY EITHER:

   A. A FEW IMPACTS OF AN IMPACT WRENCH
   B. THE FULL EFFORT OF A PERSON USING A SPUD WRENCH

5. WELDING:

   A. ALL WELDING SHALL BE DONE BY CERTIFIED WELDER. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUESTED.
   B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL CONFORM TO ASTM A-233, E70 SERIES. BARE ELECTRODES AND GRANULAR FLUX USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS

6. PROTECTION:

   A. UPON COMPLETION OF ERECTION: INSPECT ALL GALVANIZED STEEL AND PAINT ANY FIELD CUTS, WELDS, OR GALVANIZED BREAKS WITH ZINC-BASED PAINT. COLOR TO MATCH THE GALVANIZING PROCESS.

ANTENNA INSTALLATION

1. ANTENNAS AND COAXIAL 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 SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND PROPERTY.

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

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

4. CONTRACTOR SHALL PROVIDE FOUR SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER (FDR) TEST RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEM" DATED 10/05/1993. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

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

6. ANTENNA AND COAXIAL CABLE GROUNDING:

   A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER-SEALED WITH RFS CONNECTOR/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

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

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

CHECKED BY: RH | CHECKED BY: GMS

WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
SP-1

MAP SYMBOLS

- CATCH BASIN
- INLET
- MANHOLE
- FIRE HYDRANT
- VALVE BOX
- LIGHT POLE
- TRAFFIC LIGHT
- UTILITY POLE
- PEDESTAL
- SIGN
- BUSH/SHRUB
- TREE

MAP LINES (CONT.)

- OHW — OHW — OVERHEAD WIRE
- OE — OE — OVERHEAD ELECTRIC
- OF — OF — OVERHEAD FIBER
- UE — UE — UNDERGROUND ELECTRIC
- UF — UF — UNDERGROUND FIBER
- S — S — STORM SEWER
- S — S — SANITARY SEWER
- TREE LINE
- R.O.W. LINE
- LOT LINE
- CENTER LINE
- CHAIN-LINK FENCE
- WROUGHT IRON FENCE
- WOOD FENCE
- GUARD RAIL
- TRAIN TRACKS

HATCHES

- CONCRETE
- BRICK
- EARTH
- GRASS
- GRATE
- GRAVEL

MISC.

- 1 — REVISION
- X — GRID REFERENCE
- X / X-X — DETAIL REFERENCE
- X / X-X — ELEVATION REFERENCE

ABBREVIATIONS

ABV.	ABOVE
ADD'L	ADDITIONAL
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AGL	ABOVE GRADE LEVEL
ALUM.	ALUMINUM
ALT.	ALTERNATE
ANT.	ANTENNA
APPRX.	APPROXIMATE(LY)
ARCH.	ARCHITECT(URAL)
AWG.	AMERICAN WIRE GAUGE
BIT.	BITUMINOUS
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
BTCW.	BARE TINNED COPPER WIRE
B.O.F.	BOTTOM OF FOOTING
B/U	BACK-UP CABINET
CAB.	CABINET
CANT.	CANTILEVER(ED)
C.I.P.	CAST IN PLACE
CLG.	CEILING
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION(OR)
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
C.L.	CENTERLINE
dB	DECIBEL
DBL.	DOUBLE
DEPT.	DEPARTMENT
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DWG.	DRAWING(S)
DWL.	DOWEL(S)
EA.	EACH
EC	ELECTRICAL CONTRACTOR
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMT.	ELECTRICAL METALLIC TUBING
ENG.	ENGINEER
EQ.	EQUAL
EXP.	EXPANSION
EXIST.(E)	EXISTING
EXT.	EXTERIOR
FAB.	FABRICATION(OR)
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
FIN.	FINISH(ED)
FLR.	FLOOR
FDN.	FOUNDATION
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.O.W.	FACE OF WALL
F.S.	FINISH SURFACE
FT.(')	FOOT(FEET)
FTG.	FOOTING
G.	GROWTH (CABINET)
GA.	GAUGE
GC	GENERAL CONTRACTOR
GI.	GALVANIZE(D)
GIS	GEOGRAPHIC INFORMATION SYSTEM
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER
GPS	GLOBAL POSITIONING SYSTEM
GND.	GROUND
HGR.	HANGER
HT.	HEIGHT

ABBREVIATIONS

ICGB.	ISOLATED COPPER GROUND BUS
IN.(")	INCH(ES)
INT.	INTERIOR
LB.(#)	POUND(S)
L.F.	LINEAR FEET (FOOT)
L.	LONG(ITUDINAL)
MAS.	MASONRY
MAX.	MAXIMUM
MDCMC	METRICOM DESIGNATED CONSTRUCTION MANAGEMENT & CONTRACTING
MECH.	MECHANICAL
MFR.	MANUFACTURER
MHz	MEGAHERTZ
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MMP	MEET-ME POINT
MTL.	METAL
(N)	NEW
NO.(#)	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPNG.	OPENING
PCC	PORTLAND CEMENT CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PLY.	PLYWOOD
PM	PROJECT MANAGER
PRC	PRIMARY RADIO CABINET
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
PWR.	POWER (CABINET)
QTY.	QUANTITY
RAD.(R)	RADIUS
RFDS	RADIO FREQUENCY DATA SHEET
RF	RADIO FREQUENCY
RRU	REMOTE RADIO UNIT
REF.	REFERENCE
REINF.	REINFORCEMENT(ING)
REQ'D.	REQUIRED
RGS.	RIGID GALVANIZED STEEL
R.O.W.	RIGHT-OF-WAY
SCH.	SCHEDULE
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION(S)
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
TEMP.	TEMPORARY
THK.	THICK(NESS)
T.O.A.	TOP OF ANTENNA
T.O.C.	TOP OF CURB
T.O.F.	TOP OF FOUNDATION
T.O.P.	TOP OF PLATE (PARAPET)
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.G.	UNDER GROUND
U.L.	UNDERWRITERS LABORATORY
U.N.O.	UNLESS NOTED OTHERWISE
VAC	VOLTS ALTERNATING CURRENT
V.I.F.	VERIFY IN FIELD
VZW	VERIZON WIRELESS
W	WIDE(WIDTH)
W/	WITH
WAP.	WIRED ACCESSED POINT
WCS	WIRELESS COMMUNICATION SERVICE
WT.	WEIGHT
℄	CENTERLINE
ℙ	PLATE

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

CHECKED BY: RH | CHECKED BY: GMS

WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
LEGEND

SHEET NUMBER:
SP-2

LEGEND & SYMBOLS

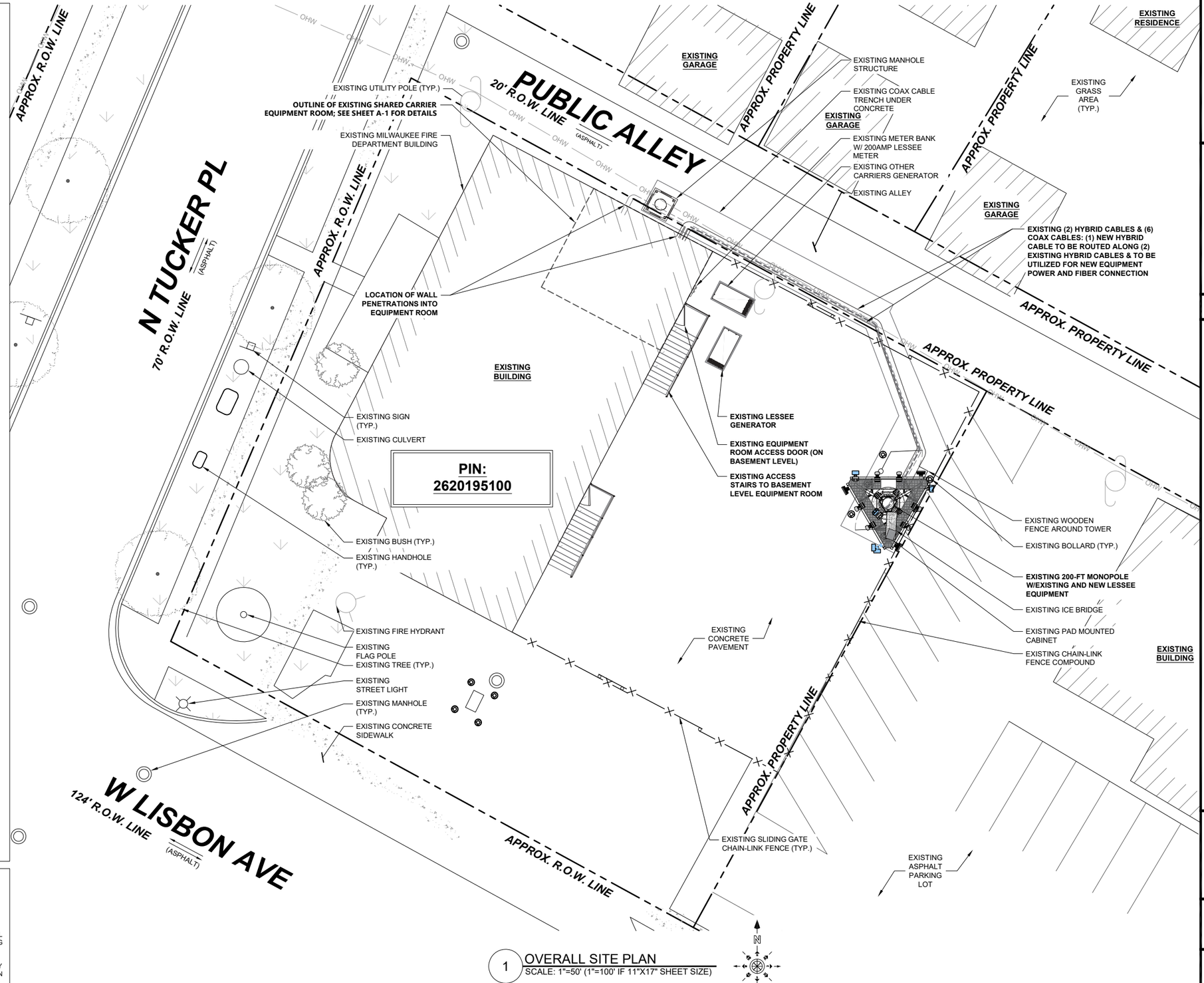
- UTILITY POLE
- SIGN
- FIBER PEDESTAL
- FIRE HYDRANT
- LIGHT STANDARD
- INLET
- CATCH BASIN
- MANHOLE
- TRAFFIC SIGNAL
- ROW MARKER
- IRON PIPE SET
- IRON PIPE FOUND
- BUFFALO BOX
- GROUNDING TEST WELL
- VALVE BOX
- HORIZONTAL CONTROL POINT
- GENERATOR RECEPTACLE
- HANDICAPPED PARKING SPACE
- DT10" DECIDUOUS TREE W/SIZE
- CT10" CONIFEROUS TREE W/SIZE
- BRUSH
- TREE LINE
- 666 CONTOUR W/ELEVATION
- EXISTING GUARDRAIL
- CHAIN LINK FENCE
- IRON FENCE
- WOOD FENCE
- OHW OVERHEAD WIRES
- LEASE AREA LINE
- UTILITY EASEMENT LINE
- PROPERTY LINE
- UE UNDERGROUND ELECTRIC LINE
- UF UNDERGROUND FIBER OPTIC LINE
- G UNDERGROUND GAS LINE
- T UNDERGROUND TELECOMM. LINE
- SS/SA UNDERGROUND STORM/SANITARY SEWER LINE
- W **UNDERGROUND WATER LINE**
- COM **UNDERGROUND COMMUNICATION/ MONITORING LINE**
- CONCRETE
- ASPHALT
- GRAVEL
- CULTIVATED FIELD
- GRASS AREA
- ICE BRIDGE
- STEEL PLATFORM
- TEMPORARY CONSTRUCTION AND STAGING AREA
- EXISTING WETLANDS

IMPORTANT NOTES:

1. GC TO HIRE PUBLIC & PRIVATE LOCATE SERVICE IN ORDER TO LOCATE AND PROTECT ANY AND ALL SURFACE UTILITIES. DO NOT SCALE OFF THESE PLANS FOR ANY BELOW GRADE UTILITIES.

2. THESE PLANS MAY NOT CONTAIN OR REVEAL ALL SUBSURFACE UTILITIES; GC IS RESPONSIBLE OF LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION

3. GC WILL NOT START CONSTRUCTION UNTIL AFTER THEY RECEIVE THE PRE CON PACKAGE AND HAVE A PRE CON WALK WITH THE PM.



1 OVERALL SITE PLAN
SCALE: 1"=50' (1"=100' IF 11"X17" SHEET SIZE)

CELLCO PARTNERSHIP

d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

CHECKED BY: RH	CHECKED BY: GMS

WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
A-0

LEGEND & SYMBOLS

- UTILITY POLE
- SIGN
- FIBER PEDESTAL
- FIRE HYDRANT
- LIGHT STANDARD
- INLET
- CATCH BASIN
- MANHOLE
- TRAFFIC SIGNAL
- ROW MARKER
- IRON PIPE SET
- IRON PIPE FOUND
- BUFFALO BOX
- GROUNDING TEST WELL
- VALVE BOX
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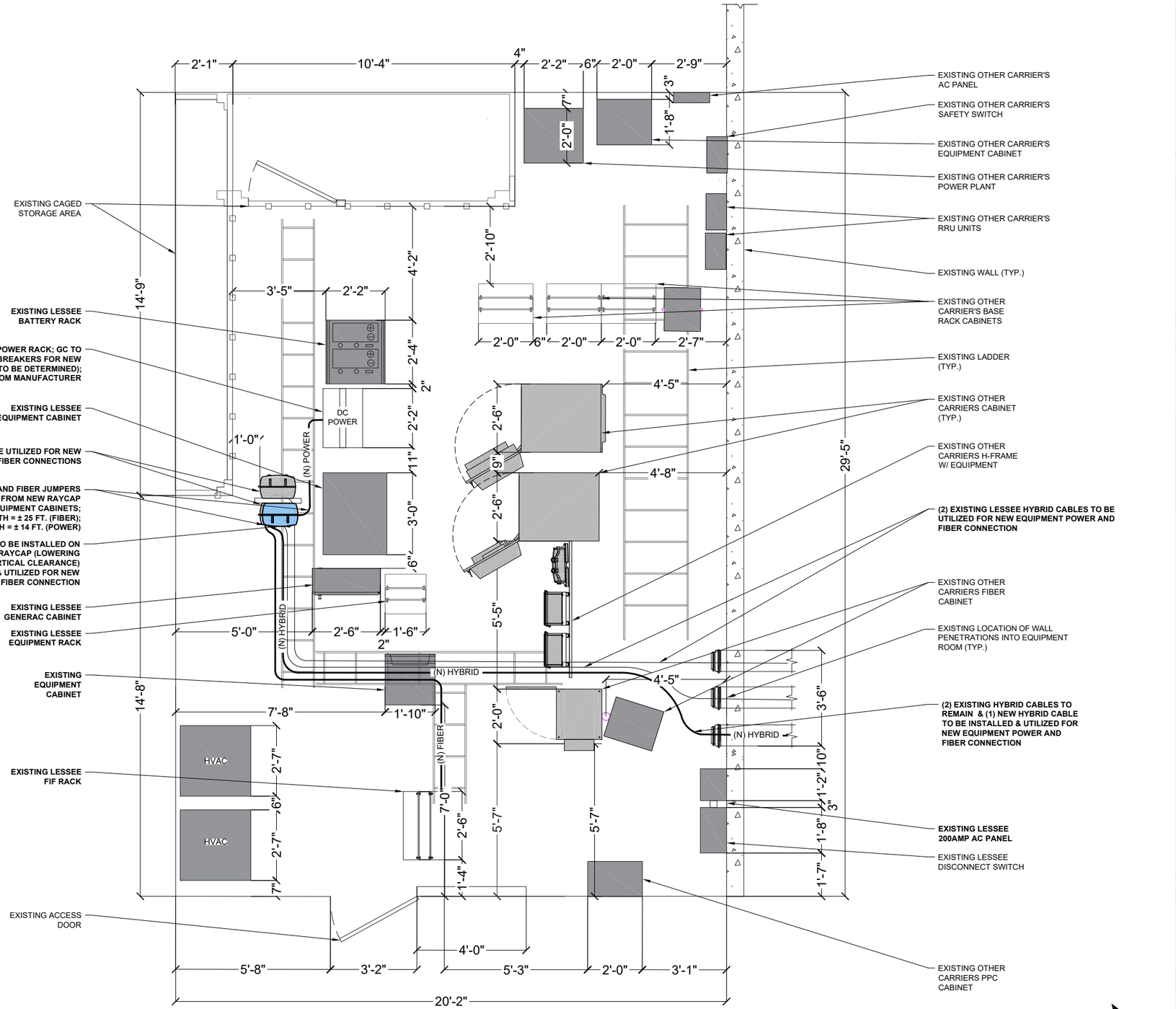
- EXISTING GUARDRAIL
- CHAIN LINK FENCE
- WIRE GRATED FENCE
- WOOD FENCE
- --- OHW --- OVERHEAD WIRES
- LEASE AREA LINE
- UTILITY EASEMENT LINE
- PROPERTY LINE
- ----UE---- UNDERGROUND ELECTRIC LINE
- ----UF---- UNDERGROUND FIBER OPTIC LINE
- ---- G---- UNDERGROUND GAS LINE
- ---- T---- UNDERGROUND TELECOMM. LINE
- --SS/SA--- UNDERGROUND STORM/SANITARY SEWER LINE
- ----W---- **UNDERGROUND WATER LINE**
- ---COM--- **UNDERGROUND COMMUNICATION/ MONITORING LINE**
- CONCRETE
- ASPHALT
- GRAVEL
- CULTIVATED FIELD
- GRASS AREA
- ICE BRIDGE
- STEEL PLATFORM
- TEMPORARY CONSTRUCTION AND STAGING AREA

EQUIPMENT LEGEND

	NEW EQUIPMENT TO BE INSTALLED
	RELOCATED EQUIPMENT
	EXISTING EQUIPMENT TO REMAIN



1 EQUIPMENT ROOM LAYOUT
SCALE: 1/2"=1'-0" (1/2"=2'-0" IF 11"X17" SHEET SIZE)

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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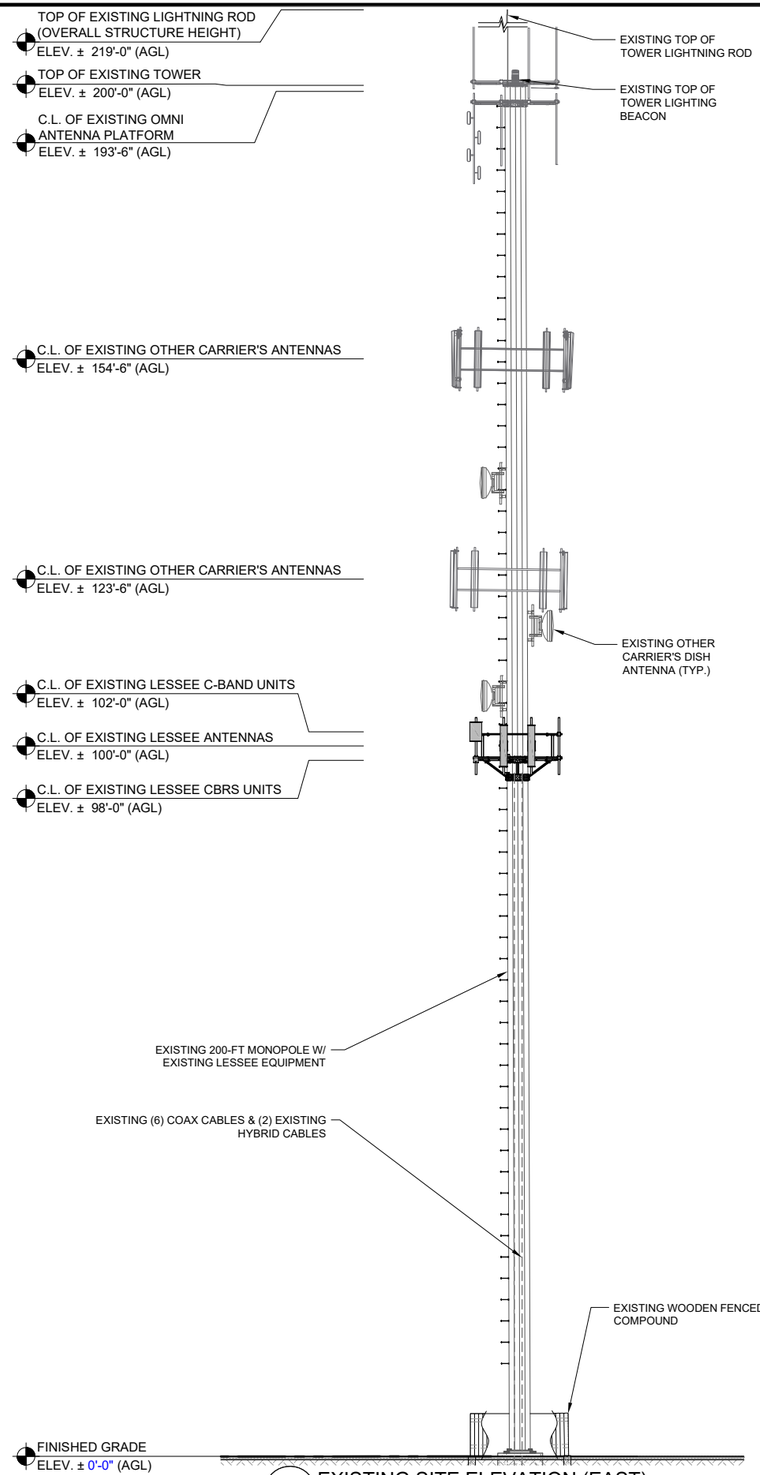
FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
EQUIPMENT ROOM LAYOUT

SHEET NUMBER:
A-1

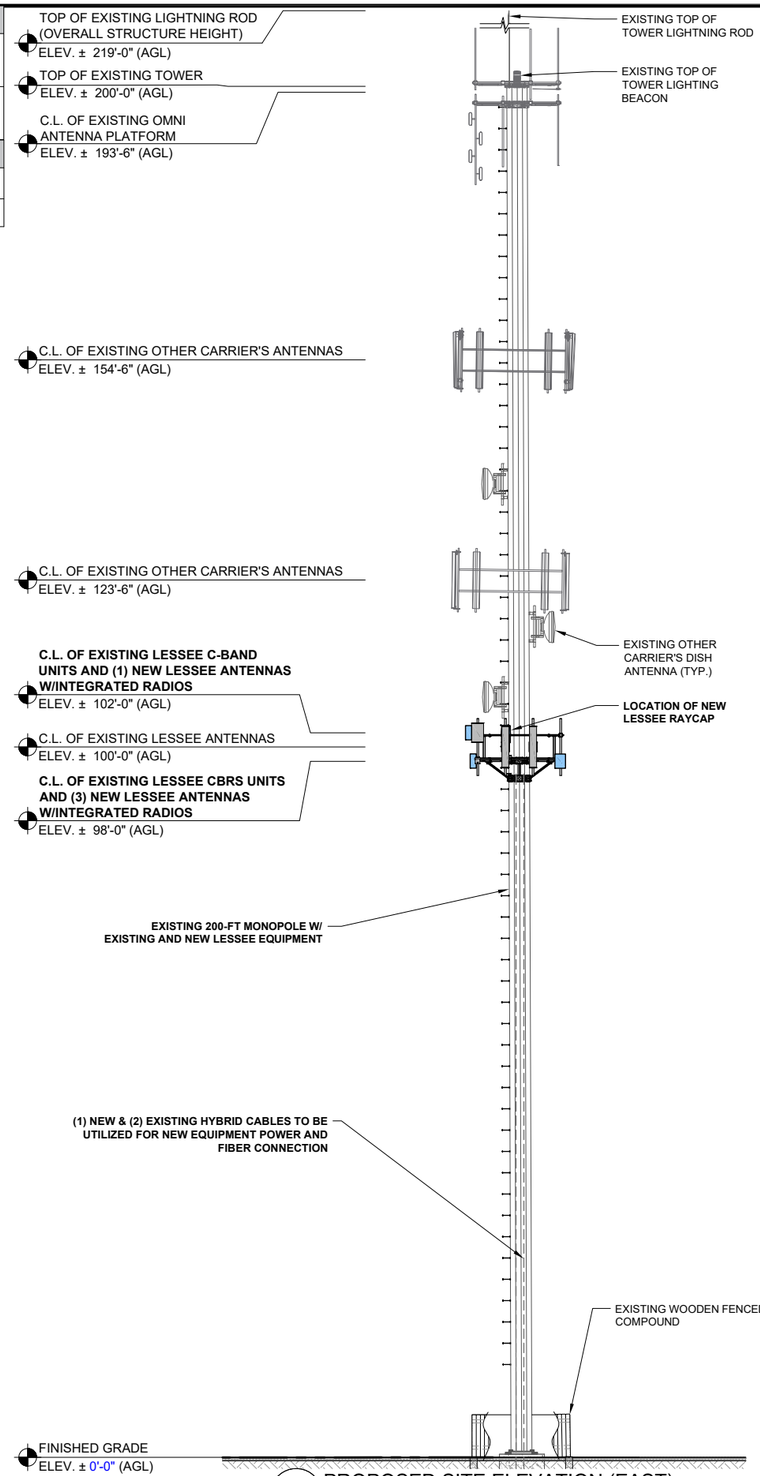


1 EXISTING SITE ELEVATION (EAST)

SCALE: 3/32"=1'-0" (3/32"=2'-0" IF 11X17 SHEET SIZE)

EQUIPMENT LEGEND	
	NEW EQUIPMENT TO BE INSTALLED
	EXISTING EQUIPMENT TO REMAIN

NEW HYBRID CABLE	
LENGTH	±224 FT
QTY.	1



2 PROPOSED SITE ELEVATION (EAST)

SCALE: 3/32"=1'-0" (3/32"=2'-0" IF 11X17 SHEET SIZE)

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

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WISCONSIN
GHAZWAN M. SADAT
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CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
SITE ELEVATION

SHEET NUMBER:
A-2

RF EMISSIONS REPORT REQUIRED
☒ YES ☐ NO DATE OF REPORT:_____

verizon fuze | RFDS

MIDWEST > Upper Midwest > Illinois/Wisconsin > Wisconsin > 88TH & LISBON MFD

RF Submit by: Nourse, Matthew - matthew.nourse@verizonwireless.com - 11/22/2024, 9:40:49 AM

EE Submit by: Goodwin, Anthony - anthony.goodwin@verizon.com - 11/26/2024, 6:06:54 AM

Project Details	
FUZE Project ID:	17292961
Project Name:	PMP Donor
Project Alt Name:	MIL 88THANDLISBON MFDAAH Donor
Project Type:	Modification
Modification Type:	RF
Designed Sector Carrier 4G:	30
Designed Sector Carrier :	32
Additional Sector Carrier 4G:	N/A
Additional Sector Carrier :	N/A
FP Solution Type & Tech Type:	MODIFICATION; Verizon Select Internet Donor
Carrier Aggregation:	false
MPT Id:	
eCIP-0:	false
Suffix:	

Location Information	
Site ID:	699072
E-NodeB ID:	209077,2097397,0209077,509177
MDG Location ID:	5000166634
PSLC:	112368
Switch Name:	New Berlin
Tower Owner:	
Tower Type:	Monopole
Site Type:	MACRO
Site Sub Type:	TRADITIONAL
Street Address:	8814 W Lisbon Ave
City:	Milwaukee
State:	WI
Zip Code:	53222
County:	Milwaukee
Latitude:	43.083425 / 43° 5' 0.33" N
Longitude:	-88.022583 / 88° 1' 21.2988" W

RFDS Project Scope: All Access Home - Donor Design:

Mount on (3) previous CDMA antenna slots/poles. 1 on Alpha AZ 0, 1 on Beta AZ 90, and 2 stacked on Gamma with 2' vertical separation AZ 180, 270.
Use power and fiber lines from existing hybrid cable.

Antenna Summary

Added

700	1900	AWS	AWS3	39 GHz	CBRS	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
							CBNG	39GHz VectaStar NR gNB		102	102.7	270(4)	PHYSICAL	1	
							CBNG	39GHz VectaStar NR gNB		98	98.7	0(1) 90(2) 180(3)	PHYSICAL	3	

Removed

700	1900	AWS	AWS3	39 GHz	CBRS	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
No data available.															

Retained

700	1900	AWS	AWS3	39 GHz	CBRS	CBAND	Make	Atoll Model	Item Description	Centerline	Tip Height	Azimuth	Inst. Type	Quantity	Item ID
							Ericsson	AIR6449		102	103.3	0(1) 120(2) 240(3)	PHYSICAL	3	
					LTE		ERICSSON	KRE105281/1	ANTENNA 6524, 4T4R MICRO DLRECTIONAL 340	98	98.3	0(19) 120(20) 240(21)	PHYSICAL	3	1900055217
LTE	LTE	LTE	LTE				COMMSCOPE,ANDF	NHH-65B-R2B	HEX PORT, AWS/PCS/700/850, 6 FT, 65 HBW,	100	103	0(1) 120(2) 240(3)	PHYSICAL	6	1900056292

Added: 4 **Removed:** 0 **Retained:** 12

Equipment Summary

Added

Equipment Type	Location	700	1900	AWS	AWS3	39 GHz	CBRS	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower								CAMBRIDGE BROADBAND NETWORKS LTD	VectaStar 39GHz gNB	VectaStar NR gNodeB High Band 2X2 2BF			PHYSICAL	0	1900486091
OVP Box	Tower								RAYCAP INC	RVZDC-3315-PF-48	Tower Top and Base power protection fibe			PHYSICAL	2	1900422667
Other	Tower								CAMBRIDGE BROADBAND NETWORKS LTD	SFP-10GE-10GBASE-LR	10 Gigabit Ethernet SFP+ connector			PHYSICAL	8	1900486261
Hybrid Cable	Tower								COMMSCOPE	HFT1206-24SV4-150G	HFT 6x12 6 AWG SM FIBER w/GLAND 150F			PHYSICAL	1	1900438286

Removed

Equipment Type	Location	700	1900	AWS	AWS3	39 GHz	CBRS	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
Coaxial Cables	Tower									1 5/8				PHYSICAL	6	

Retained

Equipment Type	Location	700	1900	AWS	AWS3	39 GHz	CBRS	CBAND	Make	Atoll Model	Item Description	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower								ERICSSON INC	AIR6449	AIR 6449 B77D; RADIO UNIT			PHYSICAL	0	1900068484
RRU	Tower	LTE							ERICSSON INC	4449	DUAL BAND LOW BAND 4449 (B13 + B5) REMOT			PHYSICAL	3	1900068756
RRU	Tower		LTE	LTE					ERICSSON INC	8843	DUAL BAND HIGH BAND 8843 (B66A + B2) RRU			PHYSICAL	6	1900068904
RRU	Tower						LTE		ERICSSON INC	4408 B48 DC	RADIO 4408 B48 HW 1			PHYSICAL	3	1900068745
Hybrid Cable	Tower								N/A	6x12				PHYSICAL	1	
Coaxial Cables	Tower								COMMSCOPE	1 5/8"				PHYSICAL	6	
Hybrid Cable	Tower								Hybrid Cables	12x24				PHYSICAL	1	
OVP Box	Tower								raycap	3315				PHYSICAL	1	
OVP Box	Shelter								raycap	3315				PHYSICAL	1	
OVP Box	Shelter								Raycap	6627				PHYSICAL	1	
OVP Box	Tower								Raycap	6627				PHYSICAL	1	
Diplexer	Tower								COMMSCOPE TECHNOLOGIES LLC	CDX1923Q-DS-43	4 PACK PCS/AWS DIPLEXER (QUAD SOLUTION O			PHYSICAL	3	1900084474

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

CHECKED BY: RH | CHECKED BY: GMS

WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM
ILLINOIS
PROFESSIONAL ENGINEER

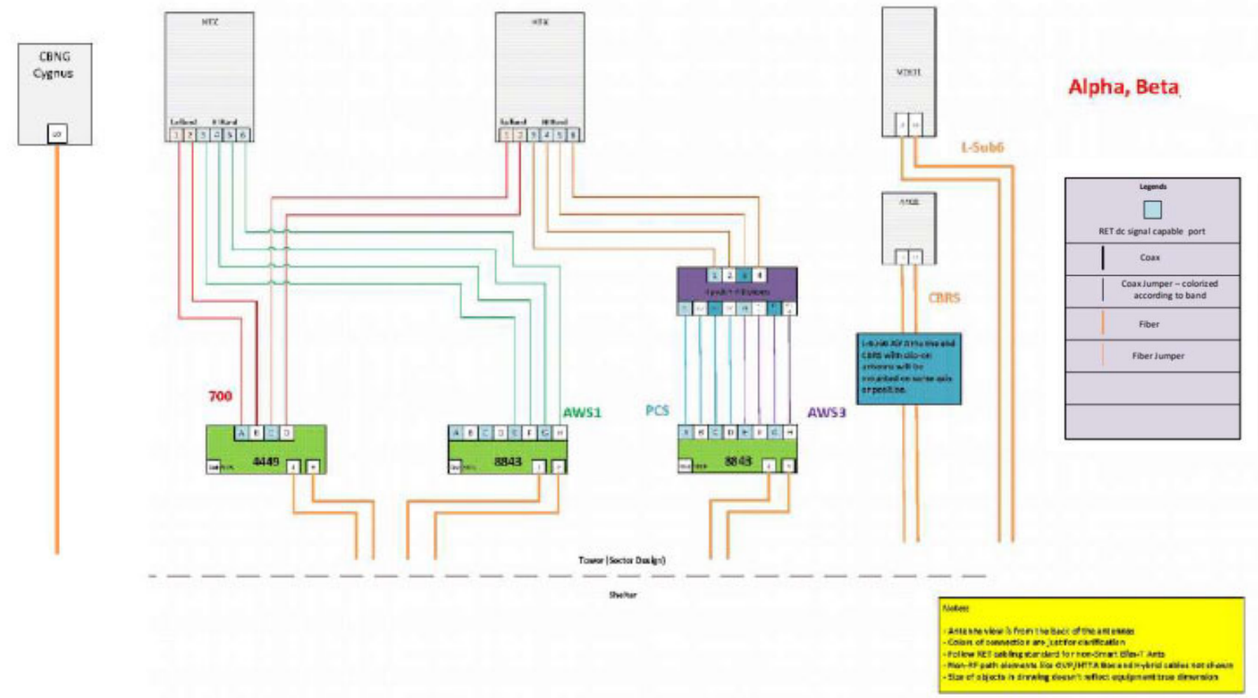
FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

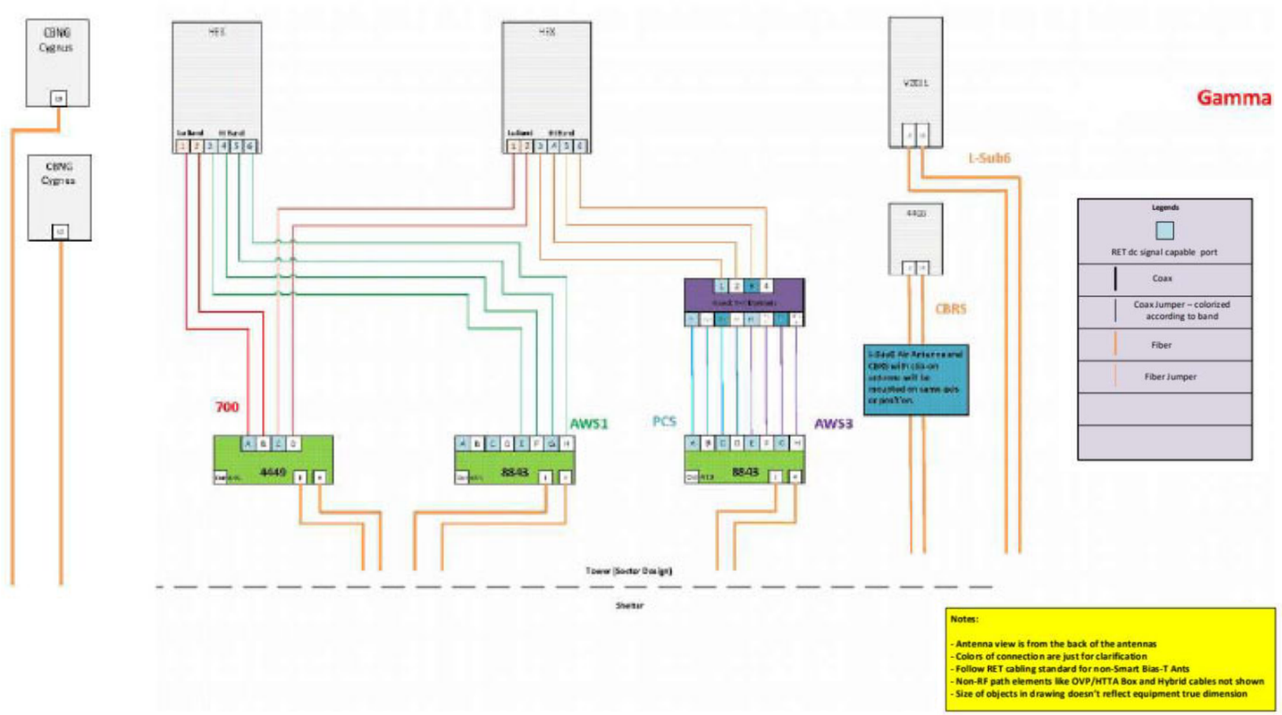
SHEET TITLE:
RFDS

SHEET NUMBER:
A-3

RF EMISSIONS REPORT REQUIRED

☒ YES ☐ NO DATE OF REPORT:_____





CELLCO PARTNERSHIP
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CAROL STREAM, IL 60188
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GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

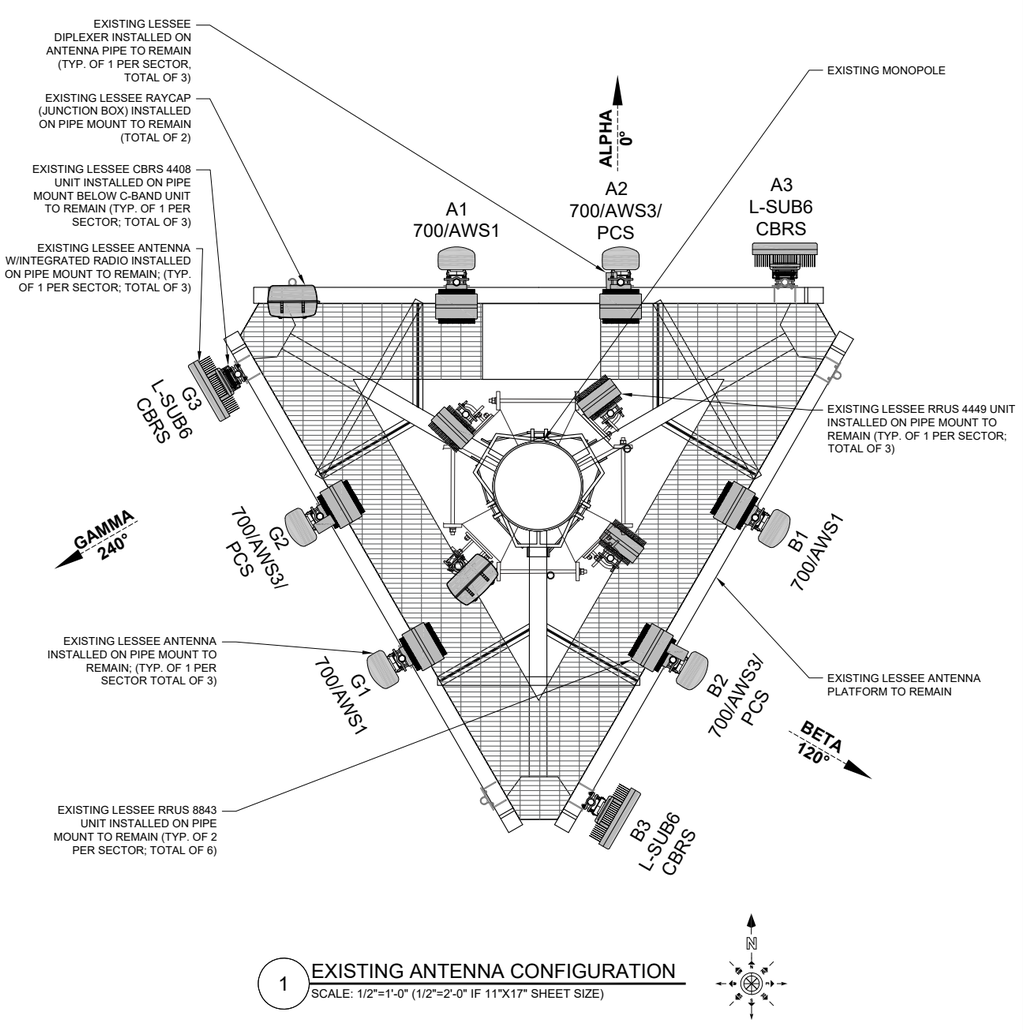
SHEET TITLE:

RFDS DIAGRAMS

SHEET NUMBER:

A-3A

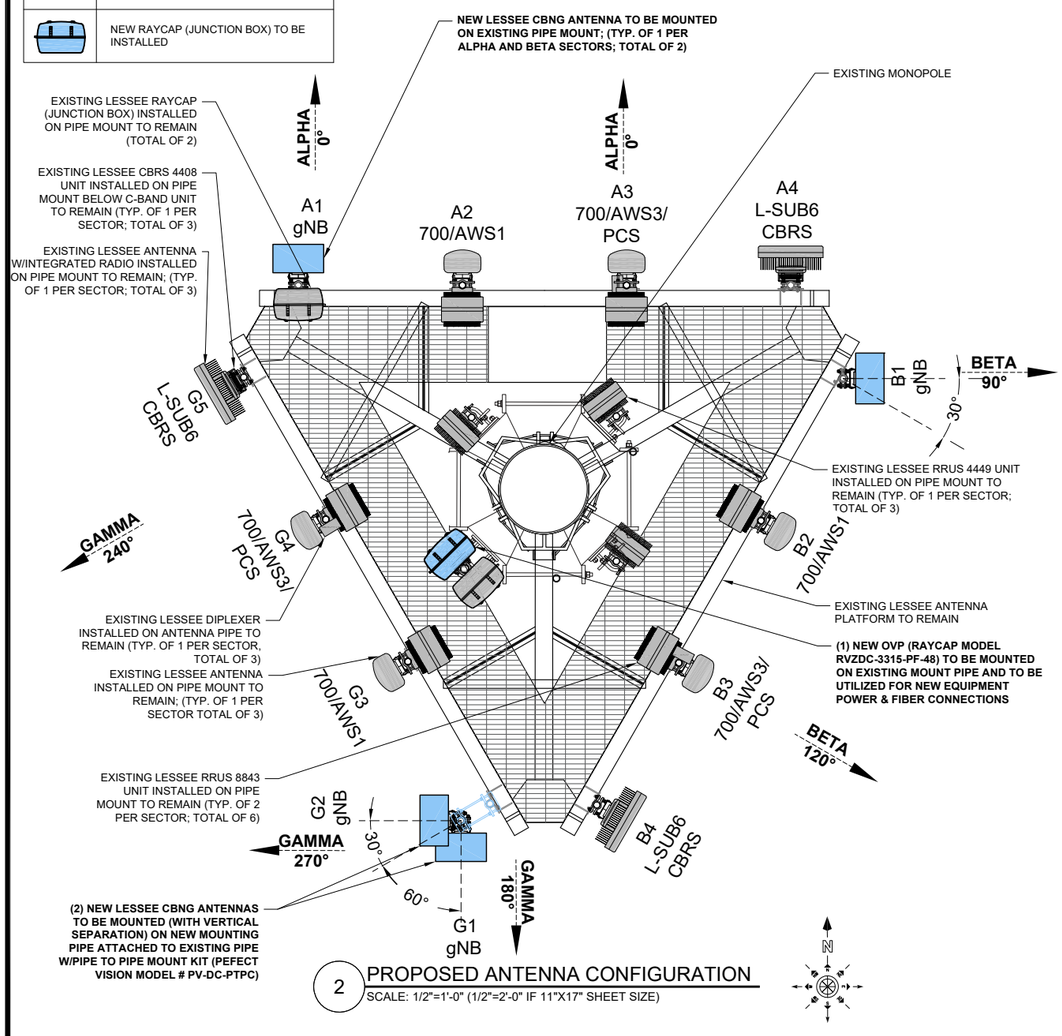
EQUIPMENT LEGEND	
	EXISTING RAYCAP (JUNCTION BOX) TO REMAIN
	EXISTING ANTENNA TO REMAIN
	EXISTING ANTENNA W/INTEGRATED RADIO TO REMAIN
	EXISTING RRUS 4449 TO REMAIN
	EXISTING RRUS 8843 TO REMAIN
	EXISTING CBRS 4408 TO REMAIN
	EXISTING DIPLEXER



1 EXISTING ANTENNA CONFIGURATION
SCALE: 1/2"=1'-0" (1/2"=2'-0" IF 11"X17" SHEET SIZE)

EQUIPMENT LEGEND	
	EXISTING RAYCAP (JUNCTION BOX)
	EXISTING ANTENNA
	EXISTING ANTENNA W/INTEGRATED RADIO
	EXISTING RRUS 4449
	EXISTING RRUS 8843
	EXISTING CBRS 4408
	NEW CBNG-NODE B ANTENNA
	EXISTING DIPLEXER
	NEW RAYCAP (JUNCTION BOX) TO BE INSTALLED

NOTES:
1. GC TO INSTALL POWER AND FIBER JUMPERS FROM EXISTING & NEW OVPS TO NEW ANTENNAS W/INTEGRATED RADIOS. (PER MANUFACTURER AND CLIENT REQUIREMENTS)
2. EQUIPMENT CONFIGURATION BASED ON MOUNT ANALYSIS BY PFJ DATED: 09/17/2024



2 PROPOSED ANTENNA CONFIGURATION
SCALE: 1/2"=1'-0" (1/2"=2'-0" IF 11"X17" SHEET SIZE)

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

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MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

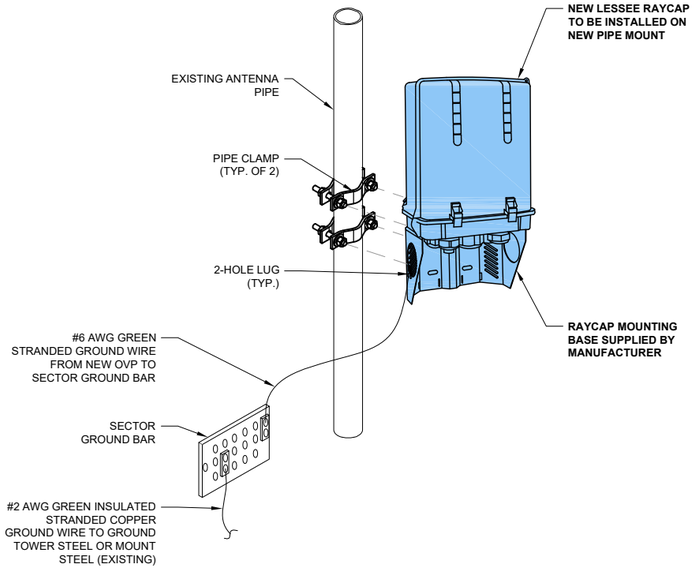
CHECKED BY: RH | CHECKED BY: GMS

WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

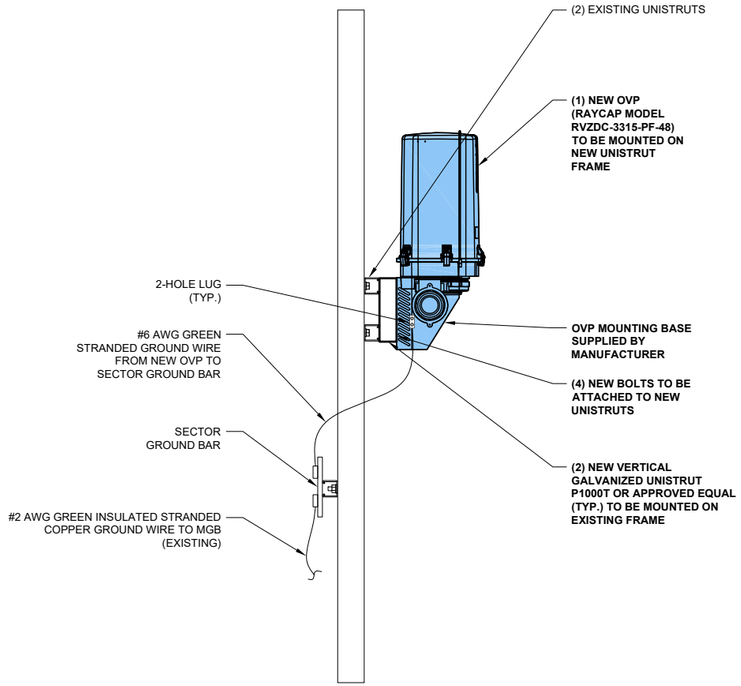
FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
EXISTING & PROPOSED EQUIPMENT CONFIGURATION DETAIL

SHEET NUMBER:
A-3B



1 RAYCAP MOUNTING DETAIL (PIPE MOUNT)
SCALE: N.T.S.



2 OVP MOUNTING DETAIL (H FRAME)
SCALE: NTS

PV-DC-PTPC

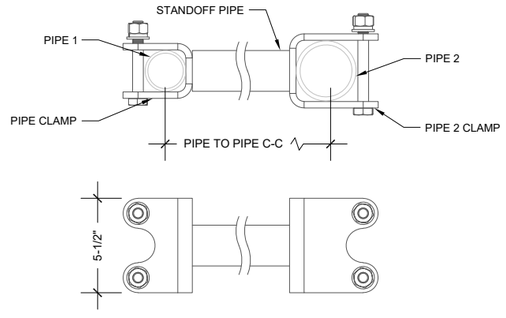
DUALCROSS - PIPE TO PIPE CONNECTION

RELATED DOCUMENTS;
ATT-ENG-03 - FACE SKEW WITH PV-DC-PTPC BRACKETS

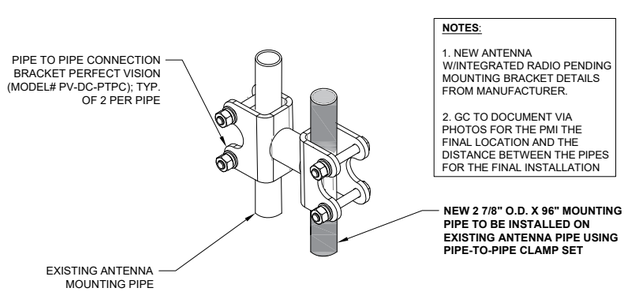
MATERIALS

- PIPE CLAMP
  - PL3/8" ASTM A36
- PIPE STANDOFF
  - ASTM A500 GR. C (SEE TABLE FOR SIZE)
- FINISH: ASTM A123/A123M
- HARDWARE
  - ASTM A325 HDG BOLT - ∅5/8"
  - ASTM A563DH NUT
  - ASTM F436 HARDNED FLAT WASHER
  - HEAVY SPRING LOCK WASHER
  - GALVANIZED - ASTM A153/A153M

Part Number	CONMAT	Weight	Pipe to Pipe C-C	Pipe 1 Diameter	Pipe 2 Diameter
		[lbs]	[in]	[in]	[in]
PV-DC-PTPC-2025-6	ANT.58856	13.8	6	∅2.375	∅2.875
PV-DC-PTPC-2025-12	ANT.58811	15.7	12		
PV-DC-PTPC-2025-18	ANT.58822	17.5	18		
PV-DC-PTPC-2525-6	ANT.58911	15.2	6	∅2.875	∅2.875
PV-DC-PTPC-2525-12	ANT.58823	18.0	12		
PV-DC-PTPC-2525-18	ANT.58845	21.0	18		



3 PIPE TO PIPE MOUNTING DETAIL
SCALE: NTS



NOTES:

1. NEW ANTENNA W/INTEGRATED RADIO PENDING MOUNTING BRACKET DETAILS FROM MANUFACTURER.

2. GC TO DOCUMENT VIA PHOTOS FOR THE PMI THE FINAL LOCATION AND THE DISTANCE BETWEEN THE PIPES FOR THE FINAL INSTALLATION

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
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PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

CHECKED BY: RH | CHECKED BY: GMS

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

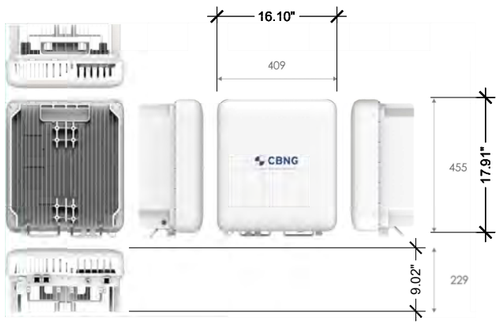
SHEET TITLE:
NEW EQUIPMENT MOUNTING DETAILS

SHEET NUMBER:
A-4

CBNG

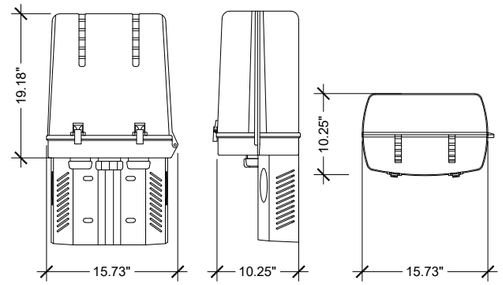
CAMBRIDGE BROADBAND NETWORKS GROUP

39GHz VectaStar NR gNB Product Specification



Description	Specification	Notes
RF Performance		
Frequency Range 1	37-40 GHz	n260 FR2 Band
EIRP	+64dBmi ± 3dB	
Antenna Type	Phased array	
Antenna Beam Width	>4.5°	Half Power Beam width
Antenna Scan Range	Azimuth ±45°, Elevation ±10°	
Antenna Scan Loss	3dB max @ ±45°	
Main Beam Sidelobes	20dBc	
Features		
Channel Bandwidth	100, 200, 400, 800MHz	Contiguous
# of Layers	2	Horizontal & Vertical Antenna Polarization, 2x2 MIMO
Carrier Aggregation	Up to8CC	800MHz aggregated BW per layer
Component Carrier Bandwidth	100, 200, 400MHz	800MHz aggregated BW per layer
Modulation UL & DL	QPSK, 16QAM, 64QMA, 256QAM	
Duplex Mode	TDD	
Time Sync	IEEE 1588 PTP v2 (Mictochip DPLL) GPS with External Antenna Holdover - 8hrs	Holdover occurs when IEEE 1588 Grandmaster and GPS unavailable
MIMO	2T2R	
Interfaces		
Back Haul	2x10GbE Fiber (SFP+) 1x1GbE RJ45 as LMN (Local Management)	
Power	DC 54V (Option with External AC Adaptor, 100-240 VAC, 54V ±5% 6.48A)	Peak Power consumption ~320W
Led Indicators	System & Front Haul	
Environmental/Certification		
Operating Temperature Range	-40° to +55°C	
Operating Humidity Range	5% to 95% RH	
IP Rating	IP67	
Certification	UL, FCC 3GPP compliant RoSH and WEEE	
Weight	gNB 18 kg (39.68 lbs) AC/DC Power Adaptor 3.2 kg (7.05 lbs) Mounting Bracket 2.6 kg (5.73 lbs) Total 23.8 kg (52.47 lbs)	
Dimensions (H x W x D)	455 mm x 409 mm x 229 mm (17.91 in x 16.10 in x 9.02 in)	
Software		
Management	HTTPS/Netconf	
Firmware Upgrade	FOTA & Local (via Ethernet)	
LAN	IEEE 802.1Q-1998 / IEEE 802.1AD (VLAN, QinQ) IEEE 802.1P (DSCP QOS) IPv4/IPv6 Dual-Stack NAPT, DNS Proxy, Port Forwarding, VPN Pass-through, DHCP Server/Client MAC/IP Packet Filtering, Stateless Firewall	PDU Type Ethernet supported

1 NEW CBNG ANTENNA
(39 GHz VectaStar NR gNB)
SCALE: N.T.S.



Dimensions		
Depth	320.04 mm	12.6 in
Height	749.3 mm	29.5 in
Width	419.10 mm	16.5 in
Weight	14.5 kg	32.0 lb

2 NEW OVP JUNCTION BOX
(RAYCAP MODEL RVZDC-3315-PF-48)
SCALE: N.T.S.

CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

Concordia
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PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # 3323-11

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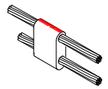
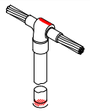
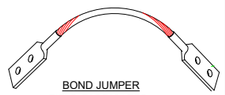
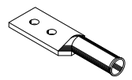
WISCONSIN
GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
NEW EQUIPMENT SPECIFICATIONS

SHEET NUMBER:
A-4A

CADWELD CONNECTIONS OR APPROVED EQUAL		BURNDY CONNECTIONS OR APPROVED EQUAL
 PARALLEL HORIZONTAL CONDUCTORS PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES TYPE PT	 HORIZONTAL STEEL SURFACE TO FLAT STEEL SURFACE OR HORIZONTAL PIPE TYPE HS	"C" CONNECTOR HYPRESS TYPE YGHC
 THROUGH CABLE TO GROUND ROD THROUGH CABLE TO TOP OF GROUND ROD TYPE GT	 VERTICAL STEEL SURFACE CABLE DOWN AT 45° TO VERTICAL STEEL SURFACE INCLUDING PIPE TYPE VS	 BOND JUMPER FIELD FABRICATED GREEN STRANDED INSULATED TYPE 2-YA-2
 HORIZONTAL SPLICE SPLICE OF HORIZONTAL CABLES	 VERTICAL PIPE CABLE DOWN AT 45° TO RANGE OF VERTICAL PIPES TYPE VS	 COPPER LUGS TWO HOLE - LONG BARREL LENGTH TYPE YA-2

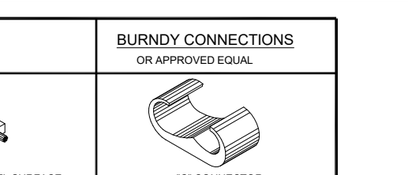
1 CADWELD DETAILS
SCALE: NTS

NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. THIS DETAIL IS TYPICAL FOR EACH COAX CABLE WHERE IT IS SPECIFIED TO BE GROUNDED
3. CABLE TO BE GROUNDED AT ANTENNA LEVEL AND PRIOR TO REACHING EQUIPMENT SKID PANEL.
4. CABLE ALSO TO BE GROUNDED TO GROUND BAR AT TOWER BASE IF APPLICABLE.
5. USE ONLY TIN PLATED GROUNDING KITS.

Know what's below.
Call DIGGER before you dig.
811 OR (800) 242-8511

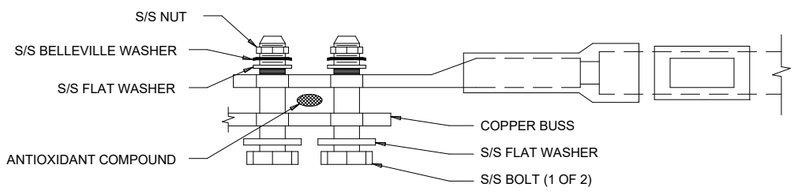
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS AT THE PROJECT SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GC SHALL CONTACT THE A&E FIRM PRIOR TO BID WALK AND CONSTRUCTION START TO CONFIRM THAT DRAWINGS ARE THE MOST RECENT SET.



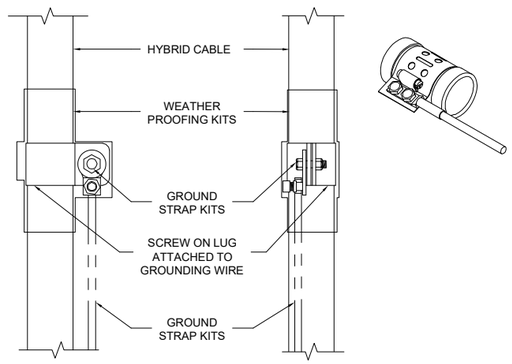
NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 STANDARD CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE
SCALE: N.T.S.

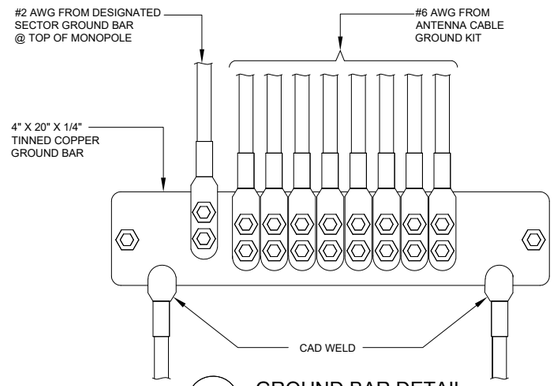


NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH KOPR-SHEILD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHEILD.

6 STANDARD LUG CONNECTION OF GROUND LEADS TO GROUND BAR DETAIL
SCALE: N.T.S.

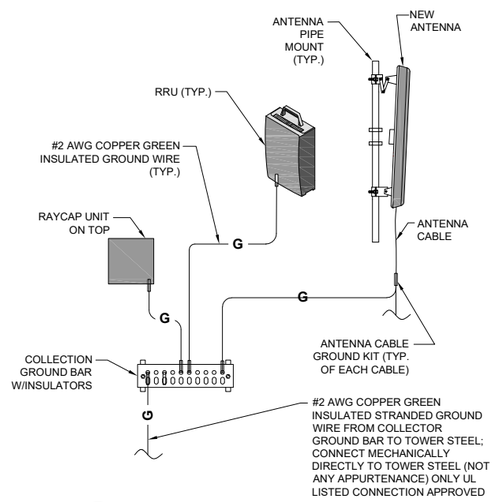


2 COAX/HYBRID GROUND KIT DETAIL
SCALE: N.T.S.



3 GROUND BAR DETAIL
SCALE: NTS

NOTE:
ANTENNA CABLES SHALL BE GROUNDED AT THE ANTENNA HEIGHT OF TOWER



5 GROUNDING DETAIL DIAGRAM
SCALE: NTS

NOTE:
ALL TOP OF TOWER GROUNDING CONECTIONS TO BE #2 AWG PER LESSEE SPECIFICATIONS.

GROUNDING NOTES:

GROUND RODS WILL BE 3/4" X 10 FOOT COPPER CLAD NOT LESS THAN 10 FOOT OR MORE THAN 15 FOOT APART. ALL CONNECTIONS TO THE GROUND RING, AND PERIPHERAL EQUIPMENT WILL BE MADE VIA CADWELD PROCESS UNLESS OTHERWISE SPECIFIED. ALL WIRING USED IN THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE SPECIFIED.

NOTE: CONTRACTOR SHALL REVIEW SOIL RESISTIVITY REPORT FOR SPECIFIC GROUNDING SYSTEM RECOMMENDATIONS (i.e. XIT GROUND REQUIREMENTS).

1. COPPER CLAD GROUND ROD AS SPECIFIED ABOVE.
2. ATTACH TO EXISTING GROUND RING IN FOUR DIFFERENT PLACES SEPARATE EACH CONNECTION BY 3'
3. CONNECTIONS FOR POWER CABINET AND BTS - PROVIDE 1 LEAD FOR EACH CABINET (NOT LESS THAN 4 FEET AND NOT MORE THAN 5 FEET LONG TO BE COILED - FOR USE AND FUTURE USE).
4. SPARE LEADS TO GROUND RING FOR FUTURE CABINETS. NOT LESS THAN 4 FEET AND NOT MORE THAN 5 FEET LONG - COILED NEATLY NEAR FUTURE BTS POSITION
5. #2 AWG INSULATED STRANDED GROUND WIRE FROM MONOPOLE BOTTOM GROUND BAR TO DESIGNATED SECTOR GROUND BAR AT TOP OF TOWER
6. FOR WOOD FENCE APPLICATIONS NO GATE OR CORNER POST GROUNDS ARE REQUIRED

CELLCO PARTNERSHIP
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GHAZWAN M. SADAT
40304
CAROL STREAM ILLINOIS
PROFESSIONAL ENGINEER

FUZE PROJECT #: 17292961
MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
GROUNDING DETAILS

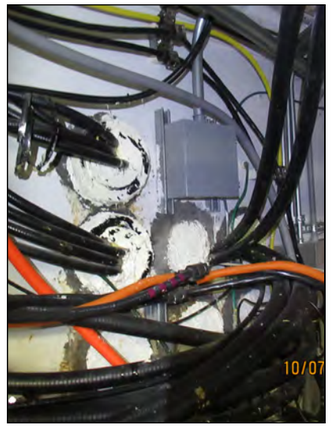
SHEET NUMBER:
G-1

EXISTING OVERALL TOWER & TOWER COMPOUND

EXISTING LESSEE EQUIPMENT
GENERAC CABINET, FIF, FIF-1 RACKS

EXISTING LESSEE EQUIPMENT
BATTERY & POWER CABINETS & EQUIPMENT RACKS

EXISTING LESSEE EQUIPMENT
RAYCAP UNITS



EXISTING LESSEE CABLE PORT WITHIN BASEMENT
EQUIPMENT ROOM AND AT TOWER BASE

EXISTING METER BANK & EXISTING LESSEE
GENERATOR (ON GROUND LEVEL NEAR EQUIPMENT
ROOM ACCESS STAIRS)

VIEWING LESSEE ANTENNAS
(ALPHA SECTOR)

VIEWING LESSEE ANTENNAS
(BETA SECTOR)

VIEWING LESSEE ANTENNA
(GAMMA SECTOR)

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MDG LOCATION CODE: 5000166634
88TH & LISBON MFD
8814 W LISBON AVE
MILWAUKEE, WI 53222

SHEET TITLE:
SITE PHOTO LOG

SHEET NUMBER:
PL-1