See Site Plan Sheet C-1 for Engineering Services comments and conditions

Provide the city approval from Good Samaritan Hospital to allow the proposed work to take place. Construction Plan Set 10029581_WA6659_GOOD SAMARITAN_Mastec - AT&T_CD_REV 1_04_12_23_S&S Address corrected Sheet No T-1

PRCTI20230490

at&t

SITE ID: **WA6659**

SITE NAME: **GOOD SAMARITAN**

SITE ADDRESS: **401 14TH AVENUE SOUTHEAST**
PUYALLUP, WA 98371

COUNTY: **PIERCE**

5G NR RADIO, 5G NR 1SR CBAND JURISDICTION: **CITY OF PUYALLUP, WA**

PACE ID:
MRWOR058813
MRWOR059318
MRWOR058864
MRWOR059479

City of Puyallup Planning Division APPROVED
See permit conditions.
RNBrown
05/25/2023
5:08:08 PM

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

PROJECT INFORMATION

SITE NAME	GOOD SAMARITAN
SITE ID:	WA6659
FA#:	10029581
USID:	75153
SITE ADDRESS:	401 14TH AVENUE SOUTHEAST PUYALLUP, WA 98371
COUNTY:	PIERCE
APN:	9810000014
JURISDICTION:	CITY OF PUYALLUP, WA
ZONING:	MEDICAL (MED)
LATITUDE (NAD83):	47.1795000° N
LONGITUDE (NAD83):	-122.2905583° W
GROUND ELEVATION:	±134 0' AMSL
TOWER TYPE:	ROOFTOP
TOWER HEIGHT:	94'-1"

APPLICANT:	AT&T WIRELESS 200 NORTH WARNER RD. KING OF PRUSSIA, PA 19406 MATTHEW MCGURK MM440D@ATT.COM
PROPERTY OWNER: ADDRESS:	MULTICARE HEALTH SYSTEM, P.O. BOX 5299 MS 737-4-FSAD TACOMA, WA 98415
CONTACT:	UNKNOWN
PHONE:	UNKNOWN
A&E FIRM: ADDRESS:	TRYLON TSF 1825 W. WALNUT HILL LANE, STE#120 IRVING, TX 75038
CONTACT:	MIKE MOORE
PHONE:	1-855-669-5421
EMAIL:	MIKE.MOORE@TRYLON.COM
CONSTRUCTION TYPE:	II-B
USE GROUP:	U
OCCUPANCY TYPE:	UNMANNED
ADA COMPLIANCE	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

VICINITY MAP

PROJECT DESCRIPTION

THE SCOPE OF WORK WILL BE COMPRISED OF:

TOWER SCOPE:

- INSTALL (3) NEW AEQK ANTENNAS
- INSTALL (3) NEW AEQU ANTENNAS
- INSTALL (1) NEW DC6
- INSTALL (2) 6/6 DC TRUNKS
- INSTALL (2) 18PR FIBER TRUNKS
- INSTALL (1) FIBER CABLE
- INSTALL (1) 2.0STD (2.375" O.D.) PIPE, 10'-0" LONG, W/ CROSSOVER PLATE AND 3'-6" 2.0STD (2 375" O D.) PIPE

GROUND SCOPE:

- REMOVE (1) UMTS CABINET
- REMOVE (1) SGNR ASIK C2 GROWTH KIT W/ (1) ABIJ. AND (1) ASIK FROM EXISTING EQUIPMENT RACK
- REPLACE EXISTING PDU W/NEW VERTIV -48VDC NETSURE 5100 PDU W/ 12 RECTIFIERS AND 2 CONVERTORS
- REPLACE EXISTING BBU CABINET W/NEWW -48VDC BATTERY CABINET W/S STRINGS 180AH BATTERIES
- INSTALL NEW FSM4 ASIK C2 W/ (3) NEW ABIO AND (1) NEW ASIL IN EXISTING EQUIPMENT RACK

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

RFDS

RFDS ID: 4441431 ISSUE DATE: 03/29/2021 REVISION: 1.00 UPDATED BY: gl013y

DATE/TIME UPDATED: 02/21/2023 @ 06:36:00 PM

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED PROFESSIONAL ENGINEER

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, PORTABLE WATER, OR TRASH DISPOSAL IS REQUIRED, NO COMMERCIAL SIGNAGE AND NO LANDSCAPING IS PROPOSED.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR A 11"X17" SET. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

AERIAL MAP

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1	TITLE SHEET	1
N-1	GENERAL NOTES	1
N-2	ELECTRICAL NOTES	1
C-1	SITE PLAN	1
C-1.1	ENLARGED ROOF PLAN	1
C-2	EQUIPMENT LAYOUT	1
C-3	ELEVATION VIEWS	1
C-3.1	ELEVATION VIEWS	1
C-4	ANTENNA LAYOUT	1
C-5	ANTENNA SCHEDULE	1
C-6	DETAILS	1
C-7	DETAILS	1
C-8	DETAILS	1
C-9	DETAILS	1
C-10	DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1
G-1	GROUNDING DIAGRAM	1
G-1	GROUNDING DETAILS	1

CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL RESIDENTIAL CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 UNIFORM PLUMBING CODE
- 2018 INTERNATIONAL FIRE CODE
- 2018 WASHINGTON STATE ENERGY CODE
- 2016 NFPA STANDARD 72
- 2016 NFPA STANDARD 13, 13-D, AND 13-R

811 Know what's below. Call before you dig.
TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WASHINGTON, CALL UTILITY NOTIFICATION CENTER
TOLL FREE: 1-800-424-5555 OR www.callbeforeyoudig.org
WASHINGTON STATUTE REQUIRES MINIMUM OF TWO WORKING DAYS NOTICE BEFORE YOU EXCAVATE

APPROVALS

AT&T (CM):		DATE:
MASTEC (PM):		DATE:
RF ENGINEER:		DATE:
SITE ACQUISITION:		DATE:
LANDLORD:		DATE:

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

TITLE SHEET

SHEET NO.

T-1

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

City of Puyallup Building ACCEPTED
JMontgomery
05/26/2023
7:46:37 AM

Approval of submitted plans is not an approval of omissions or oversights by this office or noncompliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.

PRCTI20230490

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE THE CONSTRUCTION MANAGER.
2. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
3. 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/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
4. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON TOWER SITE" AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
5. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
6. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
9. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
10. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
11. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
12. 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 CONTRACTOR, TOWER OWNER, , AND/OR LOCAL UTILITIES.
13. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
14. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
15. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
16. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
17. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
18. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
19. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
20. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
21. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: AT&T MOBILITY
   TOWER OWNER: TBD
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF AT&T.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND AT&T PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF AT&T
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

NOTES

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

GENERAL NOTES

SHEET NO.

N-1

PRCTI20230490

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   - 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   - 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR AT&T BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "AT&T".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

NOTES

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (−)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

Separate electrical permit is required with Washington State Department of Labor & Industries. https://lni.wa.gov/licensing-permits/electrical/electrical-permits-fees-and-inspections or Licensing information: Call 1-800-647-0982

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

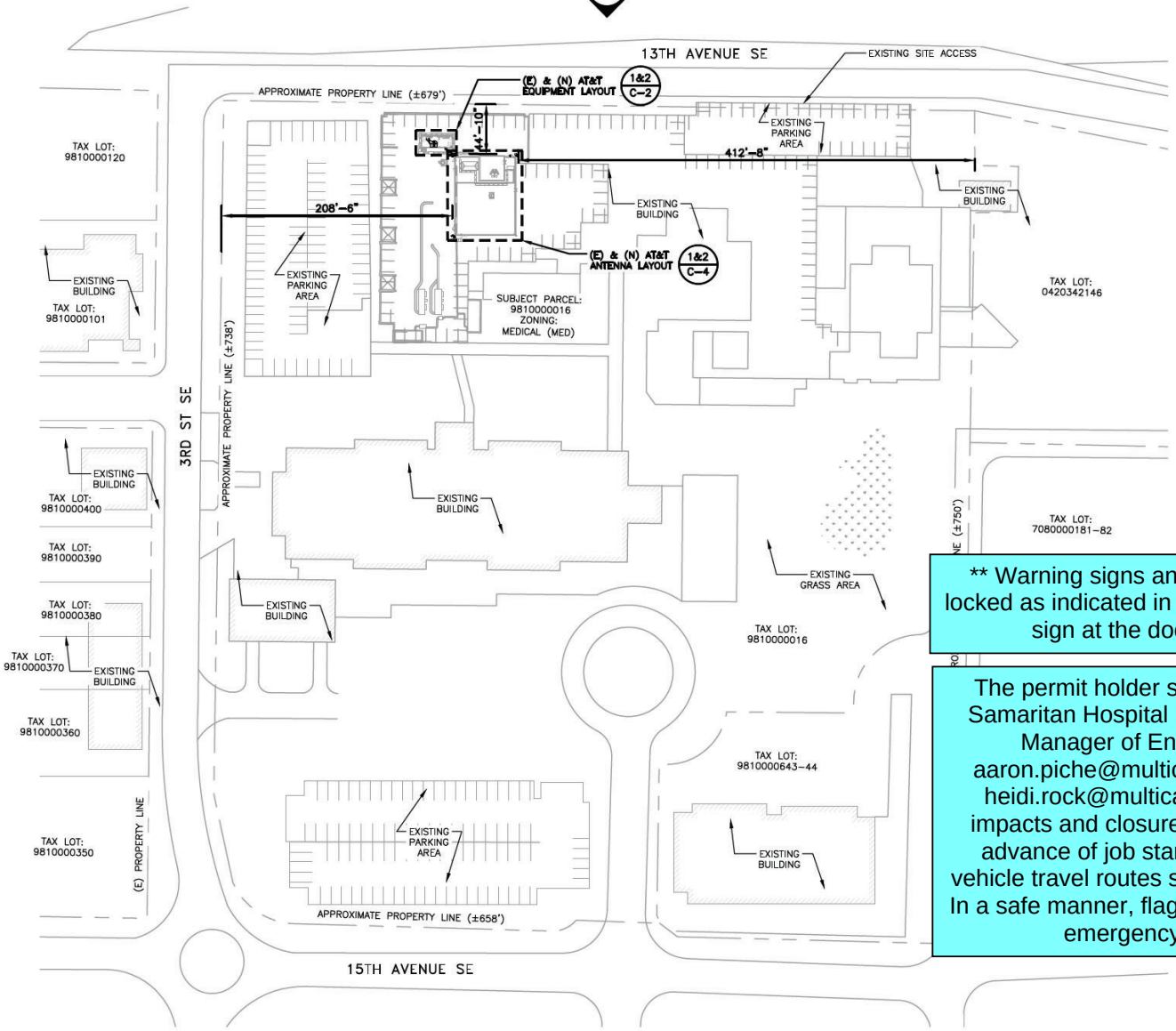
ELECTRICAL NOTES

SHEET NO.

N-2

PRCTI20230490

NOTE:
PROPERTY OWNER: MULTICARE HEALTH SYSTEM, P.O. BOX 5299
ADDRESS: MS 737-4-FSAD
TACOMA, WA 98415



LEGAL DESCRIPTION:
SECTION 34 TOWNSHIP 20 RANGE 04 QUARTER 23 WOODS 1ST CANNOT BE SOLD OR SUBD WITHOUT 001-5 & 001-6 LOT 1 OF BLA 2010-06-15-5001 DESC AS BEG AT A PT 30 FT E & 151.05 FT N OF INTER OF 15TH AV SE & 3RD ST SE TH N 322.08 FT TH N 305.27 FT TH E 692.45 FT TH S 78 DEG 58 MIN 52 SEC E 0.44 FT TH S 49.97 FT TH E 40.98 FT TH S 43.29 FT TH N 41.04 FT TH S 181.78 FT TH W 30 FT TH S 196.6 FT TO BEG CURVE CONCAVE TO NW HAVING A RAD OF 19.5 FT & C/A OF 59 DEG 50 MIN 20 SEC & BEING SUBTENDED BY A CHORD WHICH BEARS S 56 DEG 53 MIN 06 SEC W 19.45 FT TH SWLY & WLY ALG SD CURVE 20.37 FT TO PT OF REVERSE CURV TH WLY & SWLY & SLY 90.9 FT CONCAVE TO SE HAVING A RAD OF 60.5 FT & C/A OF 86 DEG 05 MIN 15 SEC TH S 3.26 FT TH SLY, SWLY & WLY 14.92 FT ALG CURVE CONCAVE TO NW HAVING A RAD OF 9.5 FT & C/A OF 89 DEG 59 MIN 59 SEC TH W 107.24 FT TO BEG OF CURVE CONCAVE TO NW HAVING A RAD OF 55.98 FT & C/A OF 81 DEG 57 MIN 04 SEC & BEING SUBTENDED BY CHORD WHICH BEARS S 49 DEG 34 MIN 17 SEC W 73.42 FT TH SLY, SWLY & WLY ALG SD CURVE 80.07 FT TH W 6.43 FT TH S 131.8 FT TH SLY & SELY 14.27 FT ALG SD CURVE CONCAVE TO E HAVING A RAD OF 25 FT & C/A OF 32 DEG 42 MIN 11 SEC TH N 88 DEG 06 MIN 01 SEC W 77.46 FT TO BEG OF CURVE CONCAVE TO N HAVING A RAD OF 40 FT & A C/A OF 43 DEG 31 MIN 52 SEC & BEING SUBTENDED BY CHORD WHICH BEARS S 70 DEG 08 MIN 03 SEC W 29.66 FT TH SWLY & WLY ALG SD CURVE 30.39 FT TH N 88 DEG 06 MIN 01 SEC W 238.87 FT TO BEG OF A CURVE CONCAVE TO NE HAVING A RAD OF 63 FT & A C/A OF 65 DEG 47 MIN 29 SEC & BEING SUBTENDED BY CHORD WHICH BEARS N 48 DEG 11 MIN 19 SEC W 68.43 FT TH WLY, NWLY & NLY ALG SD CURVE 72.34 FT TH N 12 DEG 28 MIN 32 SEC W 81.31 FT TO POB TOG/W POR CYD TO CY OF PUY PER ETN 4234255 EXC THOSE POR DETER EXEMPT UNDER DOR REG # 01777-001 & 09663-004 ALSO EXC POR CYD TO CY OF PUYALLUP PER ETN 4232324 TOG/W VAC ORD 2958 EASE OF RECORD OUT OF 981000-042-0, 043-0, 044-0, 045-0, 046-0, 047-0, 048-0, 049-0, 050-0, 051-0, 052-0, 053-0, 054-0, 066-0, 067-0 SEG 2011- 0091 BB 10/11/10 BB DC00354165 5/2/2014 KG

** Warning signs and roof access needs to be locked as indicated in the NIER report. A warning sign at the door is also required **

The permit holder shall notify MultiCare Good Samaritan Hospital by contacting Aaron Piche, Manager of Engineering Services, at aaron.piche@multicare.org and Heidi Rock at heidi.rock@multicare.org with the proposed impacts and closure hours at least 48 hours in advance of job start. No emergency service vehicle travel routes shall be blocked or rerouted. In a safe manner, flaggers shall prioritize travel for emergency service vehicles.

SITE PLAN

SCALE: 1"=100'-0" (11x17)
(OR) 2"=100'-0" (22x34)
0 25' 50' 100'

1

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

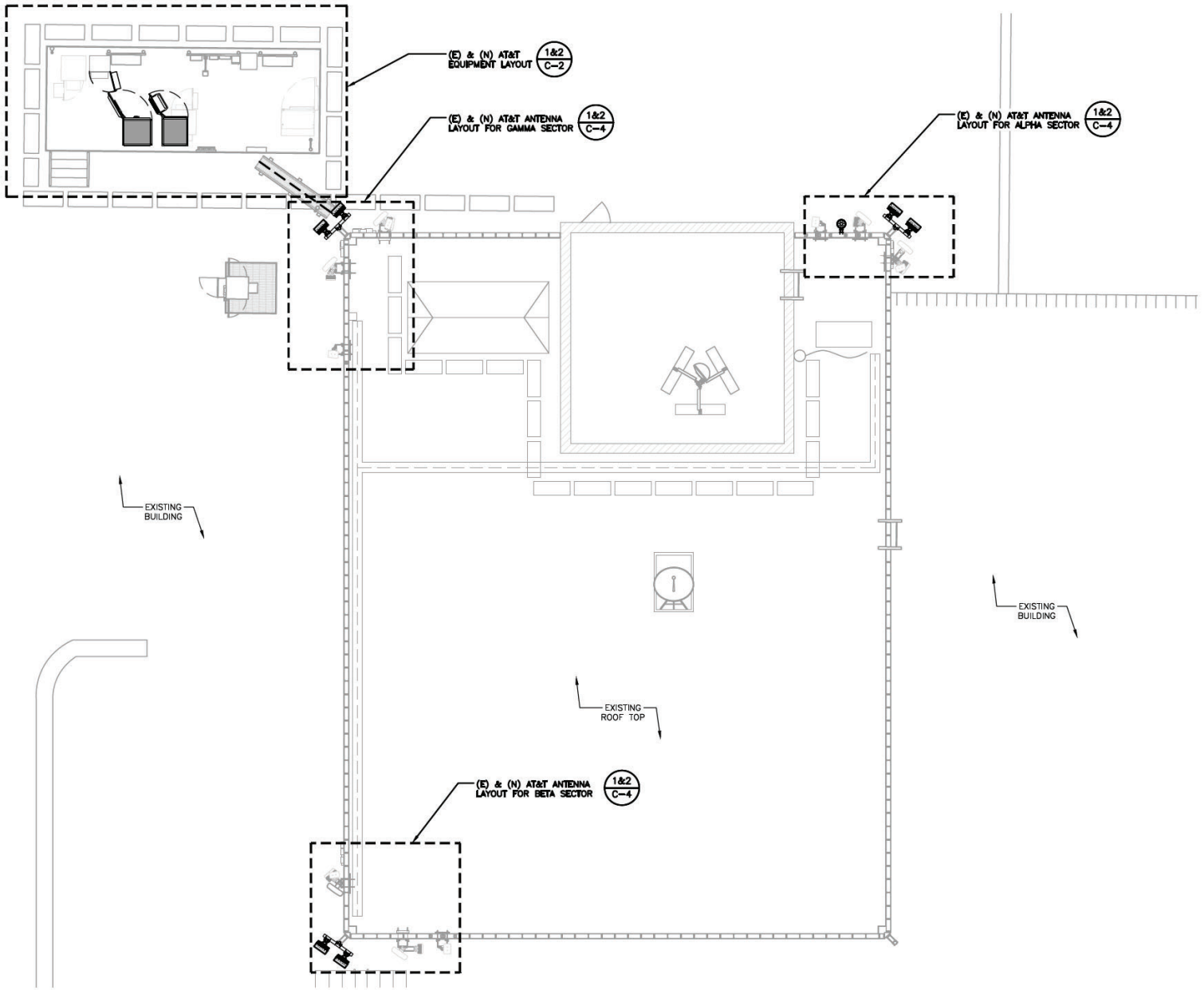
SHEET DESCRIPTION

SITE PLAN

SHEET NO.

C-1

PRCTI20230490



ENLARGE ROOF PLAN

0 25' 50' 100'

SCALE: 1"=100'-0" (11x17)
(OR) 2"=100'-0" (22x34)

1

at&t

MasTec
Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

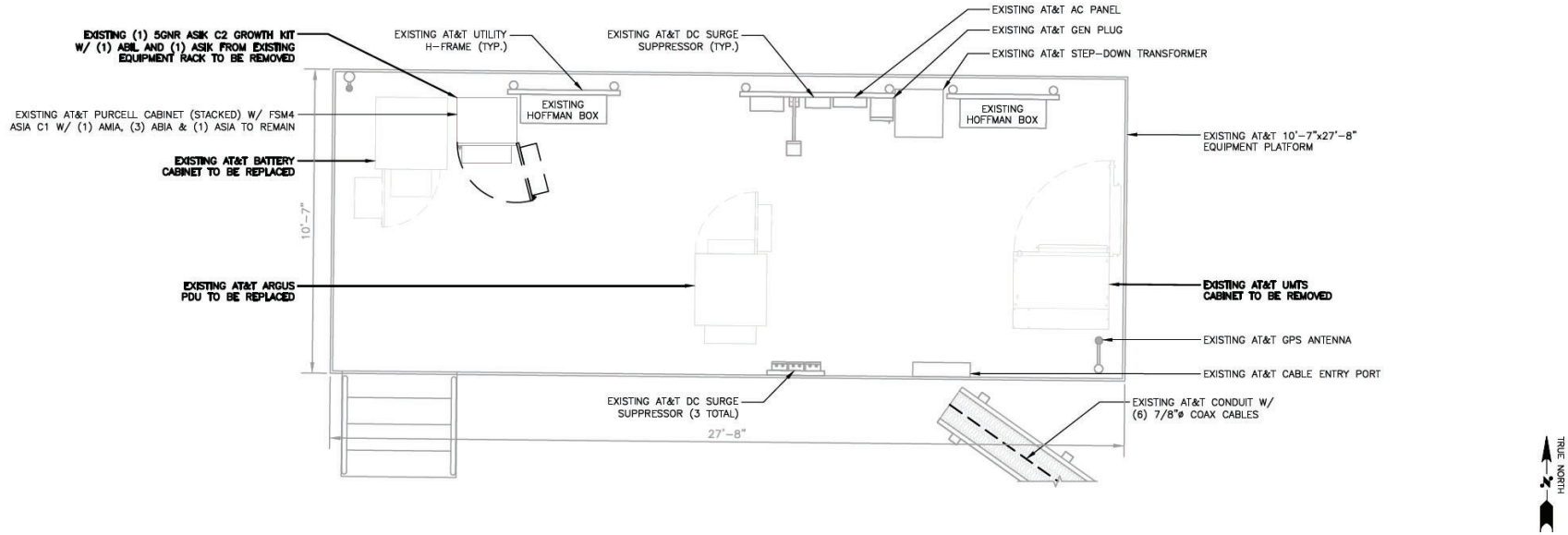
SHEET DESCRIPTION

ENLARGE ROOF PLAN

SHEET NO.

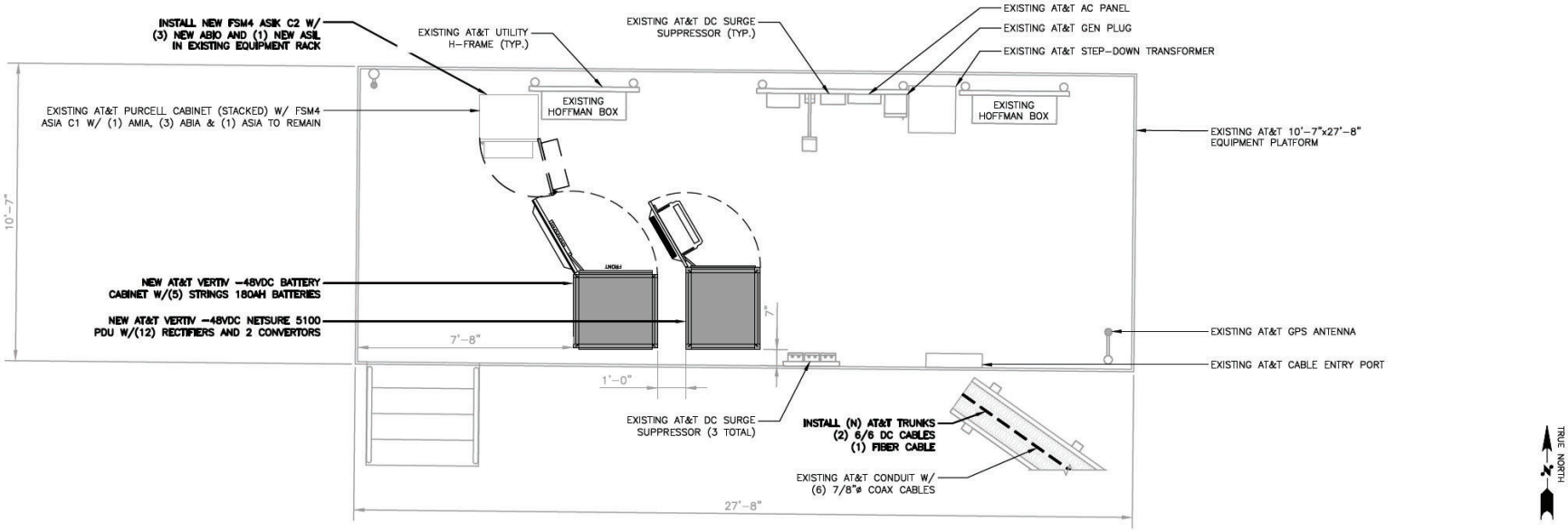
C-1.1

PRCTI20230490



EXISTING EQUIPMENT LAYOUT

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



PROPOSED EQUIPMENT LAYOUT

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

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

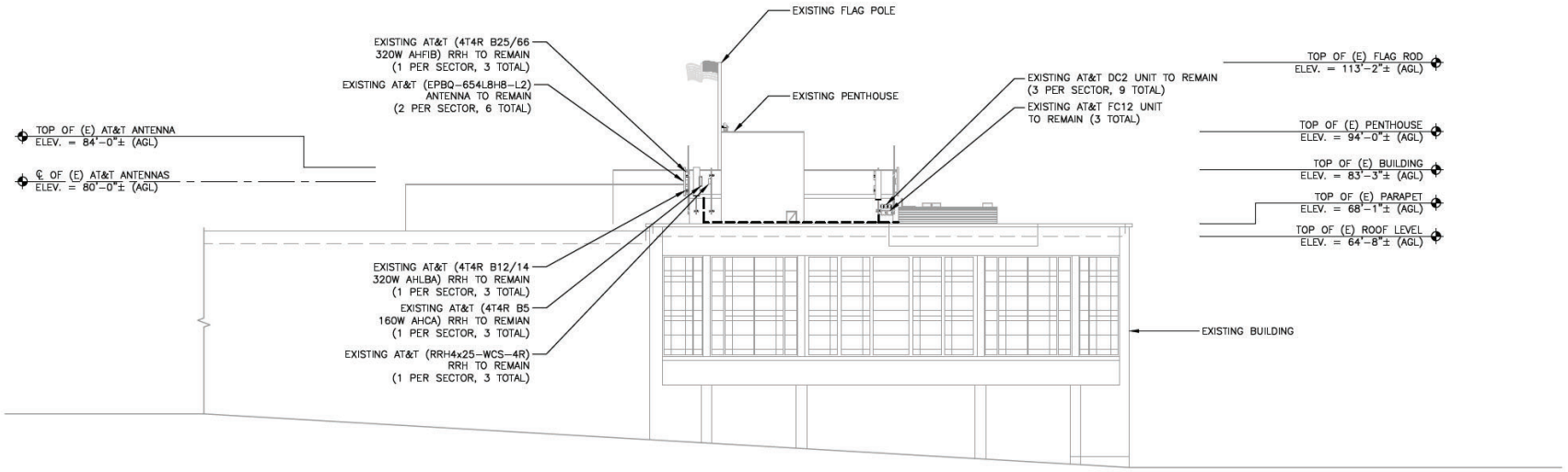
SHEET DESCRIPTION

EQUIPMENT LAYOUT

SHEET NO.

C-2

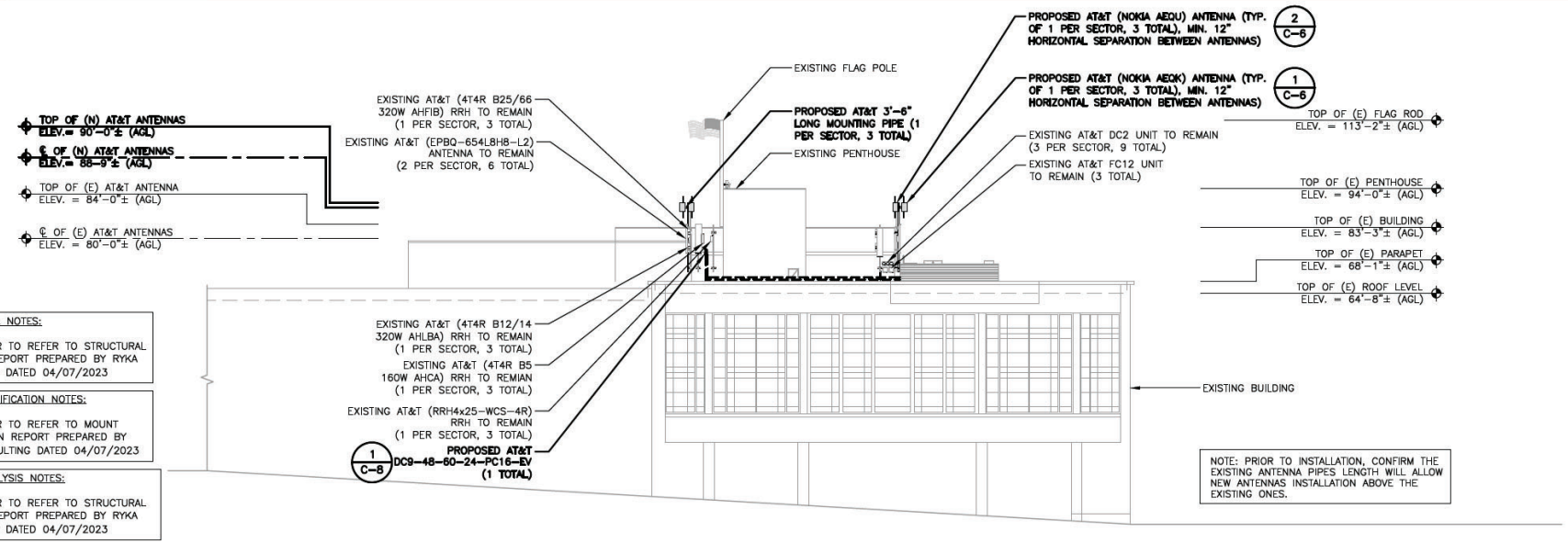
PRCTI20230490



EXISTING NORTH ELEVATION VIEW

SCALE: 1/32"=1'-0" (11x17) (OR) 1/16"=1'-0" (22x34) 0 8' 16' 32'

1



STRUCTURAL NOTES:

CONTRACTOR TO REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

MOUNT MODIFICATION NOTES:

CONTRACTOR TO REFER TO MOUNT MODIFICATION REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

MOUNT ANALYSIS NOTES:

CONTRACTOR TO REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

NOTE: PRIOR TO INSTALLATION, CONFIRM THE EXISTING ANTENNA PIPES LENGTH WILL ALLOW NEW ANTENNAS INSTALLATION ABOVE THE EXISTING ONES.

PROPOSED NORTH ELEVATION VIEW

SCALE: 1/32"=1'-0" (11x17) (OR) 1/16"=1'-0" (22x34) 0 8' 16' 32'

2

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE STATE OF WASHINGTON 23006887 4/17/2023 REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

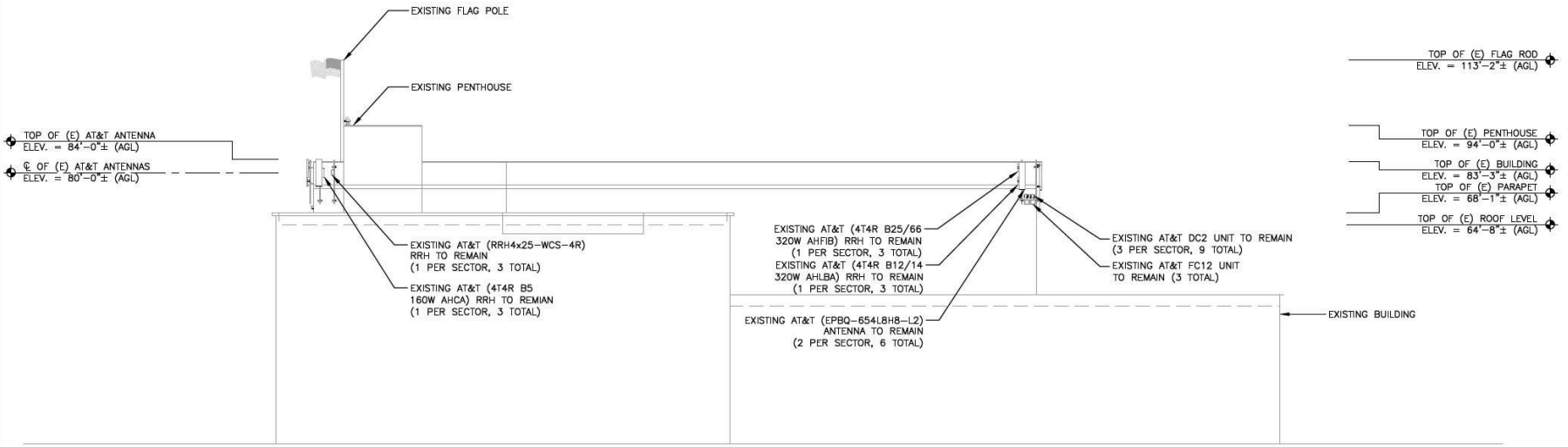
SHEET DESCRIPTION

ELEVATION VIEWS

SHEET NO.

C-3

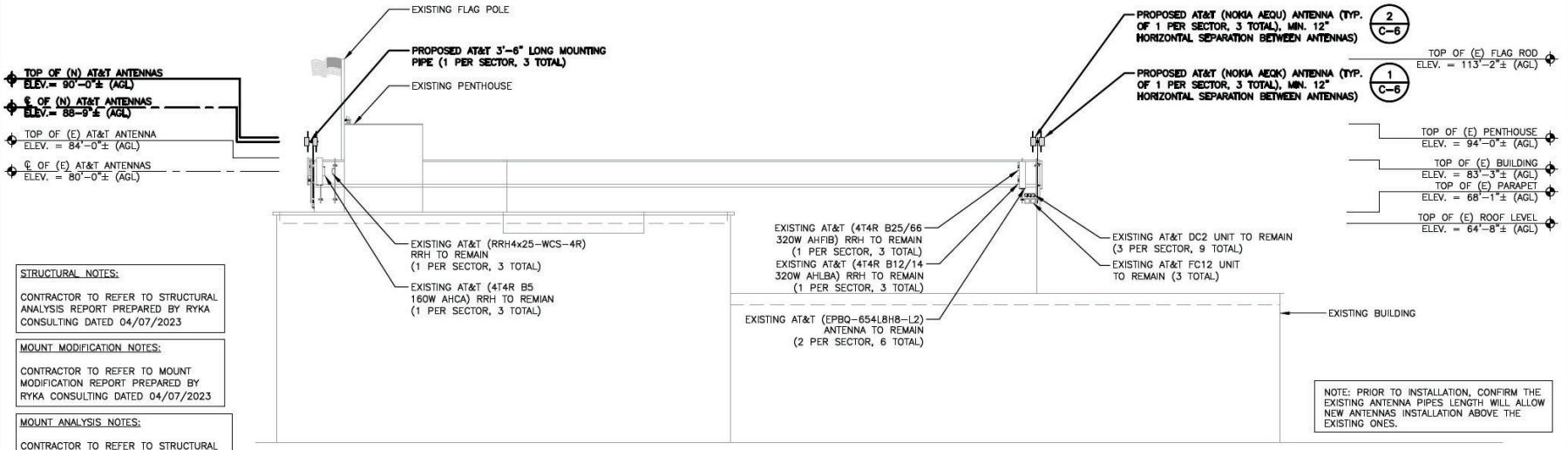
PRCTI20230490



EXISTING WEST ELEVATION VIEW

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)
0 8' 16' 32'

1



STRUCTURAL NOTES:

CONTRACTOR TO REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

MOUNT MODIFICATION NOTES:

CONTRACTOR TO REFER TO MOUNT MODIFICATION REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

MOUNT ANALYSIS NOTES:

CONTRACTOR TO REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

NOTE: PRIOR TO INSTALLATION, CONFIRM THE EXISTING ANTENNA PIPES LENGTH WILL ALLOW NEW ANTENNAS INSTALLATION ABOVE THE EXISTING ONES.

PROPOSED WEST ELEVATION VIEW

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)
0 8' 16' 32'

2

at&t

MasTec
Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

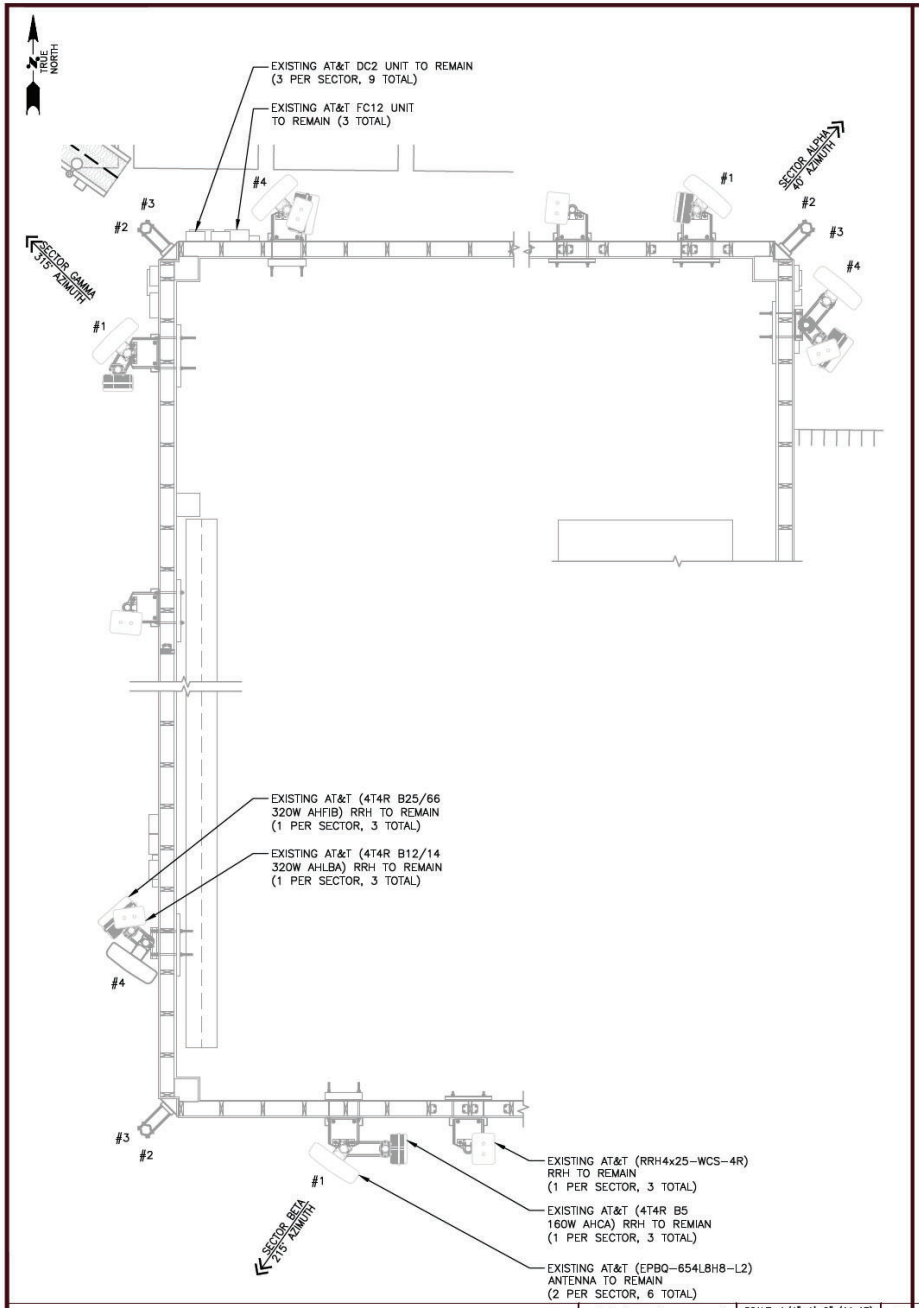
SHEET DESCRIPTION

ELEVATION VIEWS

SHEET NO.

C-3.1

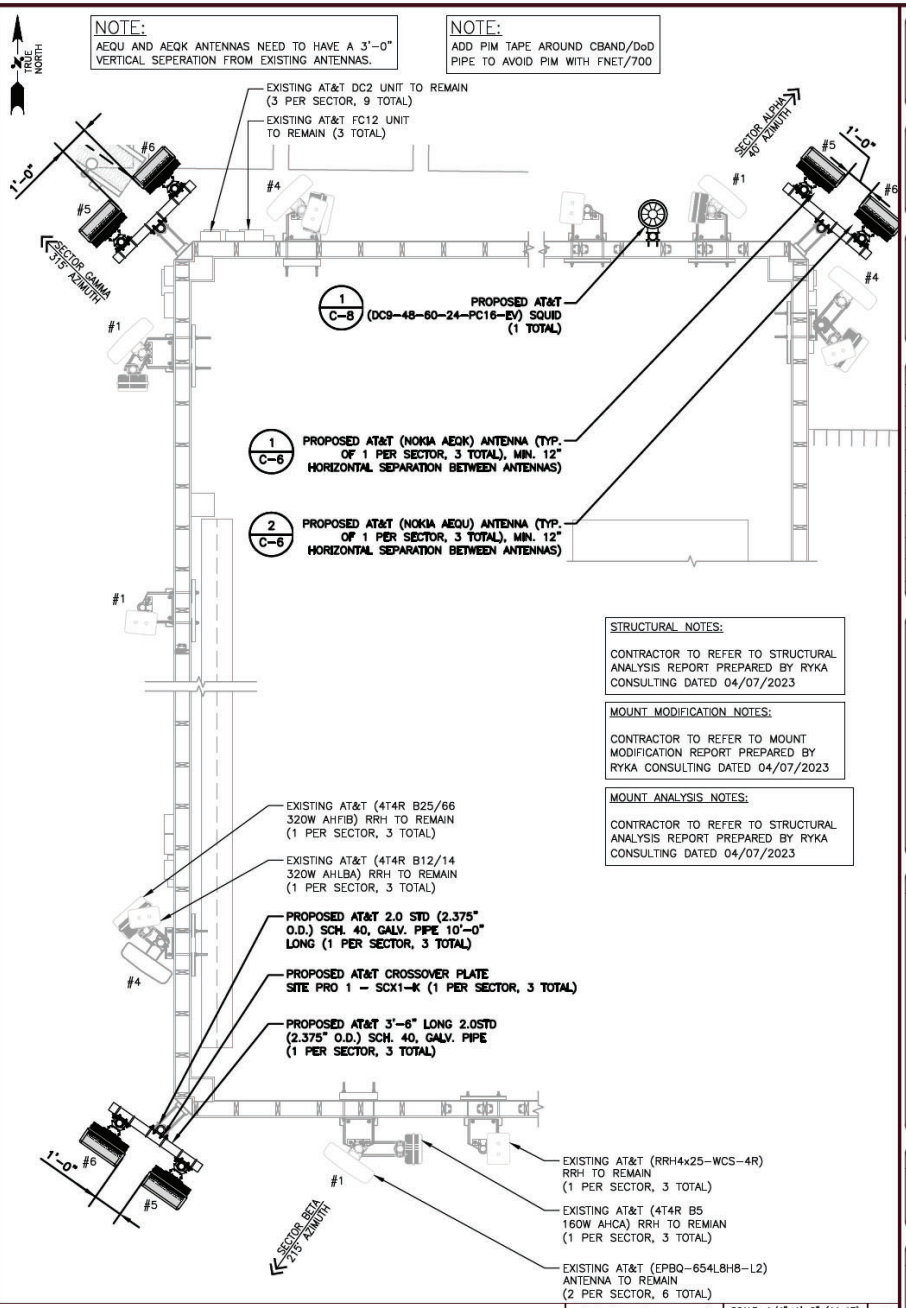
PRCTI20230490



EXISTING ANTENNA LAYOUT

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

1



STRUCTURAL NOTES:

CONTRACTOR TO REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

MOUNT MODIFICATION NOTES:

CONTRACTOR TO REFER TO MOUNT MODIFICATION REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

MOUNT ANALYSIS NOTES:

CONTRACTOR TO REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY RYKA CONSULTING DATED 04/07/2023

PROPOSED ANTENNA LAYOUT

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

2

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

ANTENNA LAYOUT

SHEET NO.

C-4

PRCTI20230490

EXISTING ANTENNA SCHEDULE

SECTOR	ANTENNA POSITION	ANTENNA FREQ	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	M-TILT	E-TILT	RRH MAKE/MODEL	DIPLEXER/SQUID	FEEDLINE	FEEDLINE LENGTH
ALPHA	#1	5G 850/ L WCS	(E) KMW EPBQ-654L8H8-L2	79'-0"	40°	0°	2°	AIRSCALE RRH 4T4R B5 160W AHCA RRH4x25-WCS-4R	(3) DC2-48-60-0-9E	-	-
	#2	-	-	-	-	-	-	-	-	-	-
	#3	-	-	-	-	-	-	-	-	-	-
	#4	L 700/1900/2100	(E) KMW EPBQ-654L8H8-L2	79'-0"	40°	0°	2°	AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA AIRSCALE DUAL RRH 4T4RB25/66 320W AHFIB	(3) FC12-PC6-10E	(6) DC TRUNKS (3) FIBER TRUNKS	106'
BETA	#1	5G 850/ L WCS	(E) KMW EPBQ-654L8H8-L2	80'-0"	215°	2°	2°	AIRSCALE RRH 4T4R B5 160W AHCA RRH4x25-WCS-4R	(3) DC2-48-60-0-9E	-	-
	#2	-	-	-	-	-	-	-	-	-	-
	#3	-	-	-	-	-	-	-	-	-	-
	#4	L 700/1900/2100	(E) KMW EPBQ-654L8H8-L2	80'-0"	215°	2°	4°/2°	AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA AIRSCALE DUAL RRH 4T4RB25/66 320W AHFIB	-	-	-
GAMMA	#1	5G 850/ L WCS	(E) KMW EPBQ-654L8H8-L2	79'-0"	315°	2°	2°	AIRSCALE RRH 4T4R B5 160W AHCA RRH4x25-WCS-4R	(3) DC2-48-60-0-9E	-	-
	#2	-	-	-	-	-	-	-	-	-	-
	#3	-	-	-	-	-	-	-	-	-	-
	#4	L 700/1900/2100	(E) KMW EPBQ-654L8H8-L2	79'-0"	315°	2°	2°	AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA AIRSCALE DUAL RRH 4T4RB25/66 320W AHFIB	-	-	-

EXISTING ANTENNA SCHEDULE — N.T.S. — 1

PROPOSED ANTENNA SCHEDULE

SECTOR	ANTENNA POSITION	ANTENNA FREQ	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	M-TILT	E-TILT	RRH MAKE/MODEL	DIPLEXER/SQUID	FEEDLINE	FEEDLINE LENGTH
ALPHA	#1	5G 850/ L WCS	(E) KMW EPBQ-654L8H8-L2	80'-0"	40°	0°	2°	AIRSCALE RRH 4T4R B5 160W AHCA RRH4x25-WCS-4R	(3) DC2-48-60-0-9E	-	-
	#2	-	-	-	-	-	-	-	-	-	-
	#3	-	-	-	-	-	-	-	-	-	-
	#4	L 700/1900/ 2100/5G 1900	(E) KMW EPBQ-654L8H8-L2	80'-0"	40°	0°	2°	AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA AIRSCALE DUAL RRH 4T4RB25/66 320W AHFIB	(3) FC12-PC6-10E	(6) DC TRUNKS (3) FIBER TRUNKS	-
	#5	**C-BAND**	**(N) AEQK**	**88'-9"**	**40°**	**0°**	**0°**	-	**(N) (1) DC9-48-60-24-PC16**	**(1) (N) FIBER (2) (N) 6/6 DC CABLE**	**106'**
	#6	**C-DOD**	**(N) AEQU**	**88'-9"**	**40°**	**0°**	**0°**	-	-	-	-
BETA	#1	5G 850/ L WCS	(E) KMW EPBQ-654L8H8-L2	80'-0"	215°	0°	2°	AIRSCALE RRH 4T4R B5 160W AHCA RRH4x25-WCS-4R	(3) DC2-48-60-0-9E	-	-
	#2	-	-	-	-	-	-	-	-	-	-
	#3	-	-	-	-	-	-	-	-	-	-
	#4	L 700/1900/ 2100/5G 1900	(E) KMW EPBQ-654L8H8-L2	80'-0"	215°	0°	2°	AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA AIRSCALE DUAL RRH 4T4RB25/66 320W AHFIB	-	-	-
	#5	**C-BAND**	**(N) AEQK**	**88'-9"**	**215°**	**0°**	**0°**	-	-	-	-
	#6	**C-DOD**	**(N) AEQU**	**88'-9"**	**215°**	**0°**	**0°**	-	-	-	-
GAMMA	#1	5G 850/ L WCS	(E) KMW EPBQ-654L8H8-L2	80'-0"	315°	0°	2°	AIRSCALE RRH 4T4R B5 160W AHCA RRH4x25-WCS-4R	(3) DC2-48-60-0-9E	-	-
	#2	-	-	-	-	-	-	-	-	-	-
	#3	-	-	-	-	-	-	-	-	-	-
	#4	L 700/1900/ 2100/5G 1900	(E) KMW EPBQ-654L8H8-L2	80'-0"	315°	0°	2°	AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA AIRSCALE DUAL RRH 4T4RB25/66 320W AHFIB	-	-	-
	#5	**C-BAND**	**(N) AEQK**	**88'-9"**	**315°**	**0°**	**0°**	-	-	-	-
	#6	**C-DOD**	**(N) AEQU**	**88'-9"**	**315°**	**0°**	**0°**	-	-	-	-

PROPOSED ANTENNA SCHEDULE — N.T.S. — 2

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

ANTENNA SCHEDULE

SHEET NO.

C-5

PRCTI20230490

AEQK AirScale MAA 64T64R 192AE n77 200W

Preliminary Technical datasheet

Specification¹	Details
Standard	3GPP n77 & FCC NR compliant
Band / Frequency range	3700~3980MHz
Max. supported modulation	256QAM
Number of TX/RX paths	64T / 64R
MIMO streams	16 per carrier (with eCPRI)
Instantaneous bandwidth IBW	200MHz; (280MHz in split mode)
Occupied bandwidth OBW	100MHz; (100MHz + 100MHz in split mode)
Total average EIRP	77.5 dBm
Max. output power per TRX	3.125 W / TRX (200 W total)
Effective Isotropic Sensitivity	-122 dBm
Dimensions	750 x 450 x 242 mm (H x W x D) 29.53 x 17.72 x 9.53 in
Weight	45kg w/o bracket 99.21 lbs
Supply voltage / Connector type	DC -40.5 V... -57V / 2 pole connector
Power consumption	750W typical (75% DL duty cycle, 30% RF load) 1050W max (75% DL duty cycle, 100% RF load)
Optical ports	2xSFP28, 9.8G CPRI or 10/25GE eCPRI
Other interfaces / Connector type	LMI / HDMI, RF monitor port / SMA, Control AISG, External Alarms / MDR26, status LEDs
Operational temperature range	-40C to +55C (without solar load)
Cooling	Natural convection cooling
Installation options	Pole, wall, with vertical adjustment of ±15°
Ingress / Surge protection	IP65/Class II 20KA
Supported RAT	NR

17 © 2020 Nokia

Confidential

AirScale High Power MAA benefits

- 5G Adaptive Antenna System for optimized capacity and coverage
- Digital beamforming for multi-user MIMO
- Connectivity with AirScale BBU (via eCPRI)
- Beamforming capable 64T64R with total 200W output power

AEQK

NOKIA

AEQK ANTENNA DETAIL | N.T.S. | 1

AEQU AirScale MAA 64T64R 192AE n78 200W

Technical data (Preliminary) Redmond Lab – January 2022

Product Specifications	
Standard	3GPP/FCC, TDD
Supported RAT by HW	5G
Band / Frequency range	3450 - 3550 MHz
Max. supported modulation	256 QAM
Number of TX/RX paths	64T / 64R
MIMO streams	16
Instantaneous bandwidth IBW	100 MHz
Occupied bandwidth OBW	100 MHz
Total average EIRP	77.5dBm
Max. output power per TRX	3.125 W / TRX (200W total)
Dimensions / Volume	750 x 450 x 240 mm (H x W x D) / 71.7 29.53 x 17.72 x 9.45 in
Weight	45kg w/o bracket 99.21 lbs
Supply voltage / Connector type	DC -40.5 V... -57V / 2 pole connector
Power consumption	730 W (75% DL duty cycle, ETSI 24h average load)
Optical ports	2 x SFP28, 10/25GE eCPRI
Other interfaces / Connector type	AISG / RS-485, EAC (6 alarms + 1 control) / MDR26; RF Monitor Port/SMA, 4 status LEDs
Operational temperature range	-40 °C ... +55 °C
Cooling	Natural convection cooling
Installation options	Pole / Wall, ± 15° mechanical vertical tilt
Ingress / Surge protection	IP65 / Class II 20 kA

9

AirScale High Power Wide Band MAA benefits

- 5G Adaptive Antenna System for optimized capacity and coverage
- Beamforming capable 64T64R with total 200W output power

AEQU 476085A

NOKIA

AEQU ANTENNA DETAIL | N.T.S. | 2

NOT USED | N.T.S. | 3

NOT USED | N.T.S. | 4

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

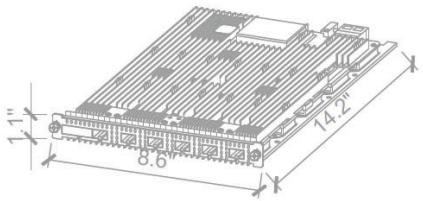
DETAILS

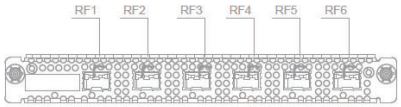
SHEET NO.

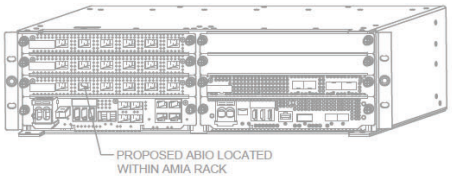
C-6

PRCTI20230490

MANUFACTURER:	NOKIA
MODEL:	ABIO
WEIGHT:	4.6 LBS
DIMENSIONS:	8.6"x14.2"x1.1"

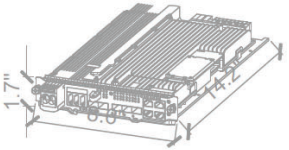


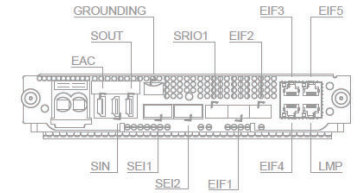


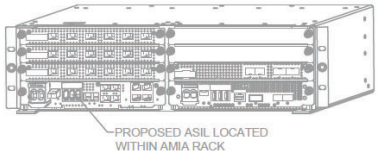


ABIO BB UNIT DETAIL — N.T.S. — 1

MANUFACTURER:	NOKIA
MODEL:	ASIL
WEIGHT:	6.4 LBS
DIMENSIONS:	8.6"x14.2"x1.7"

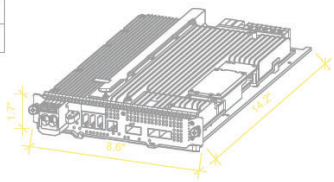


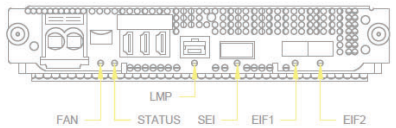


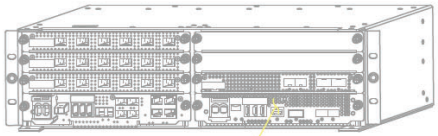


ASIL BB UNIT DETAIL — N.T.S. — 2

MANUFACTURER:	NOKIA
MODEL:	ASIK
WEIGHT:	6.6 LBS
DIMENSIONS:	8 6"X14.2"X1.7"







ASIK BB UNIT DETAIL — N.T.S. — 3

NOT USED — N.T.S. — 4

at&t

MasTec
Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

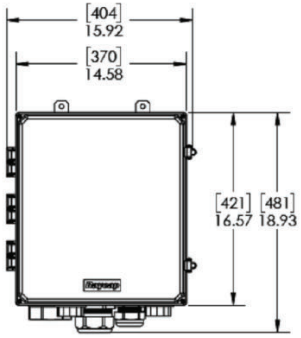
SHEET DESCRIPTION

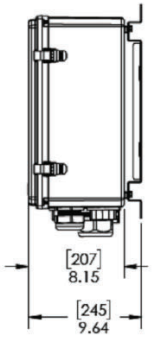
DETAILS

SHEET NO.

C-7

PRCTI20230490





SPECIFICATIONS

powered by **Strikesorb**

DC Surge Protection Solutions - Outdoor Rated

DC9-48-60-24-PC16-EV

Overvoltage Protection and Fiber Distribution/Cable Management Junction Box

Electrical		
Model Number		DC9-48-60-24-PC16-EV
CEQ / ANT Number		CEQ. 44867
Number of Circuits Protected		9
Surge Protective Device (SPD) Type per UL 1449 4th Edition		Type 2
Surge Protective Device Class per IEC 61643-11		Class I
Nominal Operating DC Voltage [U_n]		-48 VDC
Maximum Continuous Operating DC Voltage [V_{dcmcov}]		60 VDC
Impulse Discharge Current [I_{imp}] per IEC 61643-11		12.5 kA 10/350 µs
Voltage Protection Level [U_p] at 12.5kA per IEC 61643-11		160 V
Voltage Protection Level [U_p] at 5kA per IEC 61643-11		145 V
Voltage Protection Rating (VPR) per UL 1449 4th Edition		330 V
Suppression Technology		MOV
Strikesorb Module Type 2CA (UL 1449 4th edition)		30-V1-2CEV
Protection Modes:	Normal Mode	-48V to Return
	Common Mode	Return to Ground

Mechanical		
Connection Terminal (Suppression) Method		Compression lug 2 hole, #10, 5/8 pitch, 12-4 AWG [3.31-21 mm²]
Connection Terminal (Ground) Method		Compression lug 2 hole, #10, 5/8 pitch, 12-4 AWG [3.31-21 mm²]
Connection Terminal (Drain) Method		Compression lug 1 hole, #10, 12-4 AWG [3.31-21 mm²]
Connection Terminal (Fiber) Method		LC-LC Single Mode
Operating Temperature (°C)		-35° C to +65° C
Storage Temperature (°C)		-40° C to +80° C
Cold Temperature Cycling IEC 61300-2-22		-30° C to +60° C 200 hrs @5 PSI
Resistance to Aggressive Materials CEI IEC 61073-2		Including Acids and Bases
UV Protection ISO 4892-2 Method A		Xenon-Arc 2160 hrs UL F-1
Enclosure Type		Outdoor - NEMA 4x Rated
Enclosure Dimensions (L x W x H)		16.34" x 16.57" x 8.19" [415 x 421 x 208 mm]
Weight		34.9 lbs [15.83 kg]
Combined Wind Loading	Sustained	150 mph Sustained: 110.5 lbs [601 N]
	Gust	195 mph Gust: 186.8 lbs [1016 N]

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

DETAILS

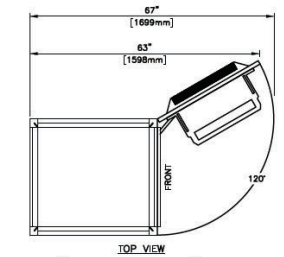
SHEET NO.

C-8

PRCTI20230490

Capacity:	180 AH
Battery Type:	Lead Acid Battery
Voltage:	12 V
Weight:	31 KG(s)
Warranty:	30 Month(s)

1 C-9 180AH BATTERY DETAIL
SCALE: NTS

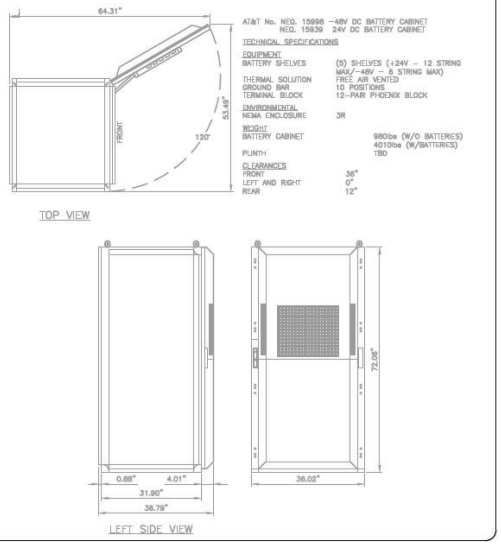


AT&T No. NEQ.15917

TECHNICAL SPECIFICATIONS

DC POWER SYSTEM FEATURES	
NOMINAL SYSTEM VOLTAGE	-48VDC OR +24VDC
CONTROL	MICROPROCESSOR (ACU+)
ENVIRONMENTAL	
OPERATING TEMPERATURE	-40°F TO 115°F (-40°C TO 46°C) CONTINUOUS OPERATION
HUMIDITY	0% TO 95% RELATIVE HUMIDITY, NON-CONDENSING
NEMA ENCLOSURE	3R
THERMAL SOLUTIONS	
POWER CHAMBER	2500 WATT DOOR-MOUNTED HEAT EXCHANGER, 28U AVAILABLE SPACE FOR SURGE PROTECTION
BATTERY CHAMBER	FAN COOLED, FRESH AIR VENTILATION, HOLDS UP TO (3) BATTERY STRINGS
EQUIPMENT	
GROUND BAR	10 POSITIONS
TERMINAL BLOCK	12-POSITION PHOENIX ALARM BLOCK, 32-POSITION PHOENIX ALARM BUNCHING BLOCK
WEIGHT	
OUTDOOR NetSure™	816lbs (W/O BATTERIES) 512 2300lbs (W/GNB BATTERIES)
PLINTH	TBD
CLEARANCES	
FRONT	36"
LEFT AND RIGHT	0"
REAR	12"

2 C-9 EMERSON 5100
SCALE: NTS



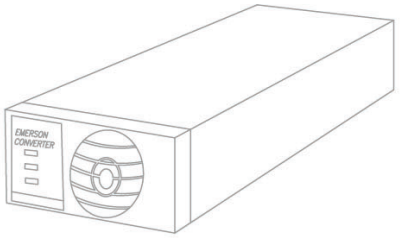
AT&T No. NEQ. 15998 -48V DC BATTERY CABINET
NEQ. 15939 24V DC BATTERY CABINET

TECHNICAL SPECIFICATIONS

EQUIPMENT	
BATTERY SHELVES	(5) SHELVES (+24V - 12 STRING MAX/-48V - 6 STRING MAX)
THERMAL SOLUTION	FREE AIR VENTED
GROUND BAR	10 POSITIONS
TERMINAL BLOCK	12-PAIR PHOENIX BLOCK
ENVIRONMENTAL	
NEMA ENCLOSURE	3R
WEIGHT	
BATTERY CABINET	980lbs (W/O BATTERIES) 4010lbs (W/BATTERIES)
PLINTH	TBD
CLEARANCES	
FRONT	36"
LEFT AND RIGHT	0"
REAR	12"

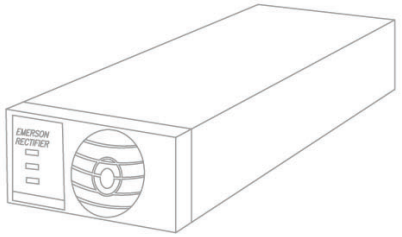
3 C-9 EMERSON NETSURE BATTERY CABINET
SCALE: NTS

4 C-9 NOT USED
SCALE: NTS



NEQ.15929 1C48241500
CONVERTER, NETSURE™ 512 & 721, HIGH EFFICIENCY,
-48 VDC TO +24 VDC, 62.5 A/1500 W, 4.4 LBS.

5 C-9 EMERSON NEQ.15929 CONVERTER DETAIL
SCALE: NTS



NEQ.15930 1R482000E3
RECTIFIER, NETSURE™ 512 & 721, HIGH EFFICIENCY,
-48 VDC, 40 A/2000 W, 120/208/240 VAC,
SINGLE-PHASE INPUT, 4.4 LBS.

6 C-9 EMERSON NEQ.15930 RECTIFIER DETAIL
SCALE: NTS

MOUNT DETAILS

N.T.S. 1

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

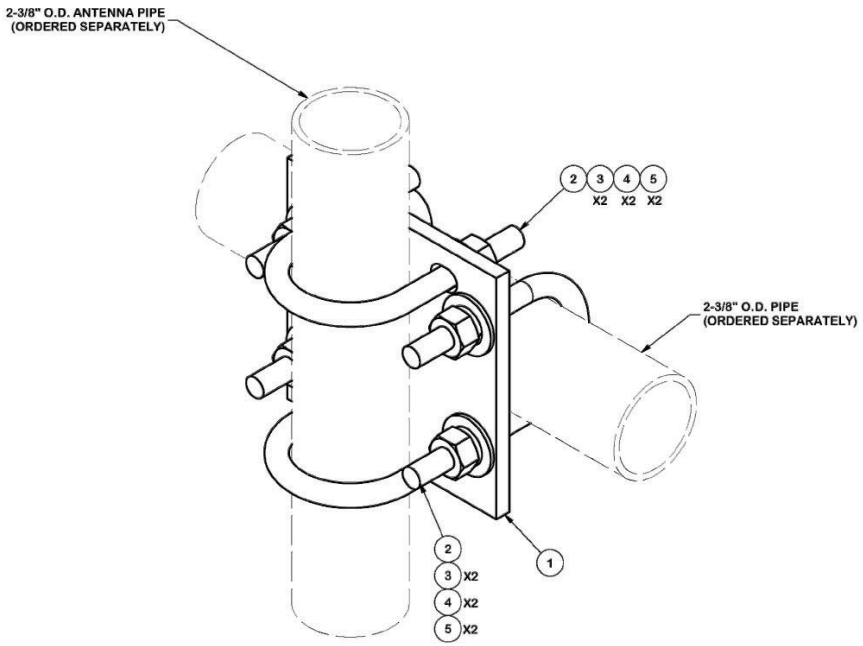
DETAILS

SHEET NO.

C-9

PRCTI20230490

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"		3.71	3.71
2	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	2.50
3	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
4	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	7.16



TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REVISION HISTORY				
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED MISSING U-BOLT AND HRDWE		KC8	7/5/2012

DESCRIPTION: CROSSOVER PLATE

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 6/30/2011		SCX1-K

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	CEK 8/23/2012	SCX1-K

PAGE 1 OF 1

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

MOUNT DETAILS

N.T.S. 1

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

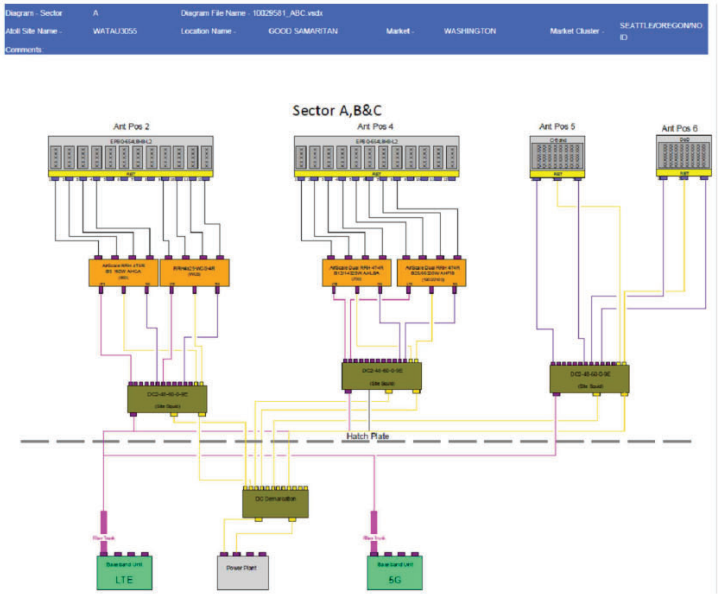
SHEET DESCRIPTION

DETAILS

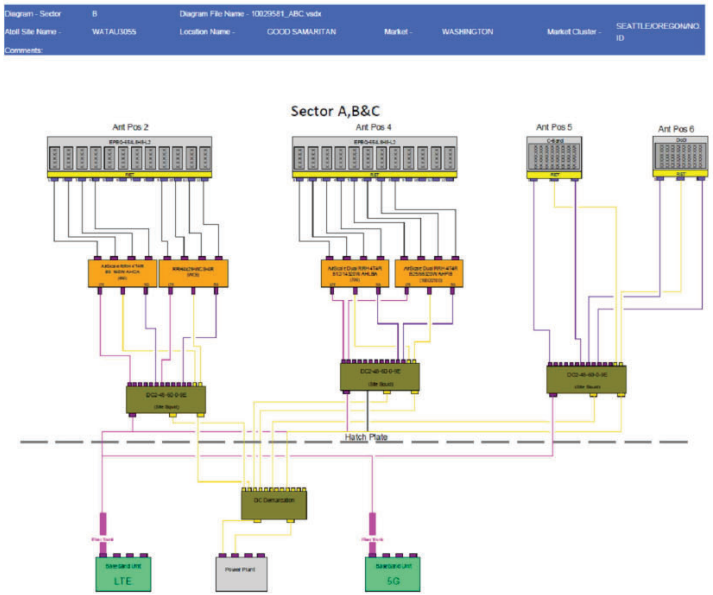
SHEET NO.

C-10

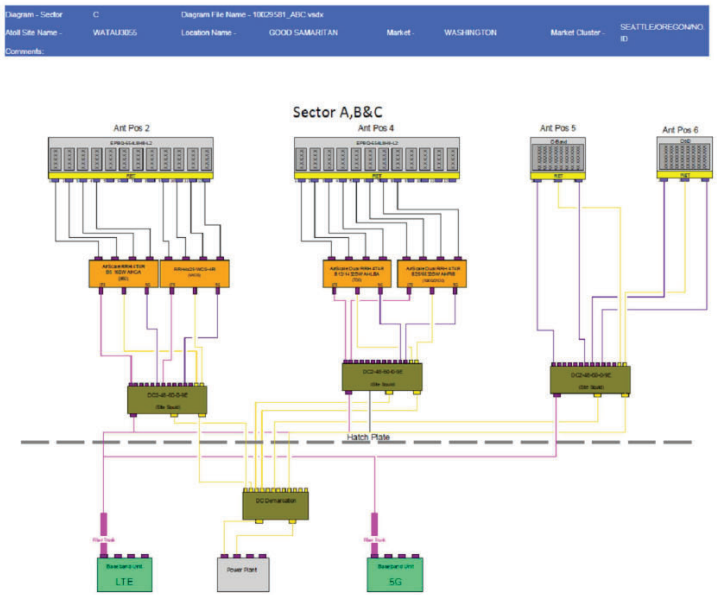
PRCTI20230490



RF PLUMBING DIAGRAM - ALPHA | N.T.S. | 1



RF PLUMBING DIAGRAM - BETA | N.T.S. | 2



RF PLUMBING DIAGRAM - GAMMA | N.T.S. | 3

at&t

MasTec
Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF-1

PRCTI20230490

GROUNDING PLAN LEGEND:

- EXISTING GROUND WIRE
- NEW GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- COPPER GROUND ROD
- GROUND ROD W/ TEST WELL

GENERAL NOTES

1. CONTRACTOR SHALL HAVE A COMPLETE UNDERSTANDING OF THE CONTENTS OF AT&T STANDARD TP-76416.
2. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
3. KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL COMPRESSION GROUNDING CONNECTIONS.
4. ALL EXOTHERMIC CONNECTIONS SHALL BE INSTALLED UTILIZING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR APPLICATION.
5. ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH AN EXTERNAL TOOTHED LOCK WASHER. GROUNDING BUS BARS MAY HAVE PRE-PUNCHED HOLES OR TAPPED HOLES. ALL HARDWARE SHALL BE SECURITY TORQUE HARDWARE 3/8" STAINLESS STEEL.
6. EXTERNAL GROUNDING CONDUCTOR SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS, CONDUITS, OR SUPPORTS TO PRECLUDE ESTABLISHING A MAGNETIC CHOKE POINT.
7. PLASTIC CLIPS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
8. CONTRACTOR SHALL REPAIR/PLACE EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.
9. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
10. GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING GROUND WIRES AND CONNECT TO SURFACE MOUNTED BUS BARS. FOLLOW ANTENNA AND BTS MANUFACTURER'S PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR POLE USING MANUFACTURERS PRACTICES.
11. ALL WIRES SHALL BE COPPER THHN/THWN. ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
12. CONTRACTOR TO VERIFY AND TEST GROUND SOURCE, GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY WIRELESS REPRESENTATIVE.
13. REFER TO DIVISION 16 GENERAL ELECTRIC; GENERAL ELECTRICAL PROVISION AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
14. ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM, AND RECEIVE APPROVAL OF DESIGN BY AUTHORIZED WIRELESS REPRESENTATIVE, PRIOR TO INSTALLATION OF GROUNDING SYSTEM. PHOTO DOCUMENT ALL CADWELDS AND GROUND RINGS.
15. NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
16. USE PANI SCHEME FOR LOADING GROUNDS ON MGB AS DISCUSSED IN NSTD 119, 33 & 36.

GROUND ROD NOTES

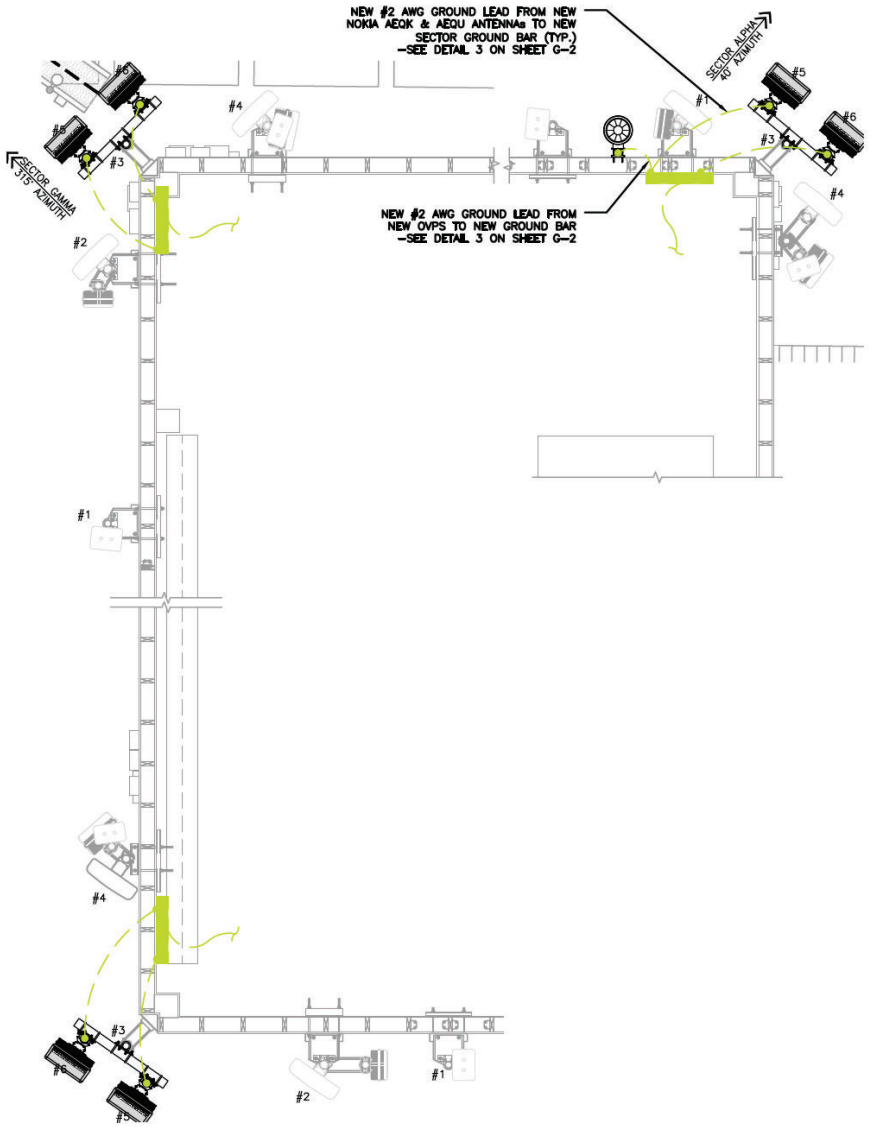
1. ELECTRICAL CONTRACTOR SHALL ORDER GROUND RESISTANCE TESTING ONCE THE GROUND SYSTEM HAS BEEN INSTALLED; A QUALIFIED INDIVIDUAL, UTILIZING THE FALL OF POTENTIAL METHOD, SHOULD PERFORM THE TEST. THE REPORT WILL SHOW THE LOCATION OF THE TEST AND CONTAIN NO LESS THAN 9 TEST POINTS ALONG THE TESTING LINE, GRAPHED OUT TO SHOW THE PLATEAU.
2. POINT GROUND TEST OR 3 POINT 62% TESTS WILL NOT BE ACCEPTED AS ALTERNATIVES TO THE AFORE MENTIONED GROUND TESTS. TEST SHALL BE PERFORMED WHILE THE COUNTERPOISE IS ISOLATED FROM THE A/C SYSTEM GRIDS AND EXISTING COMMUNICATIONS FACILITY.

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.



GROUNDING DIAGRAM

N.T.S. 1

at&t

MasTec Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

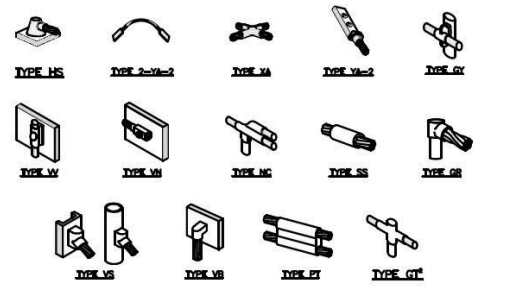
SHEET DESCRIPTION

GROUNDING DIAGRAM

SHEET NO.

G-1

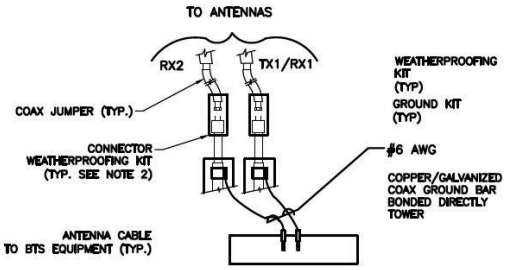
PRCTI20230490



NOTE:

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

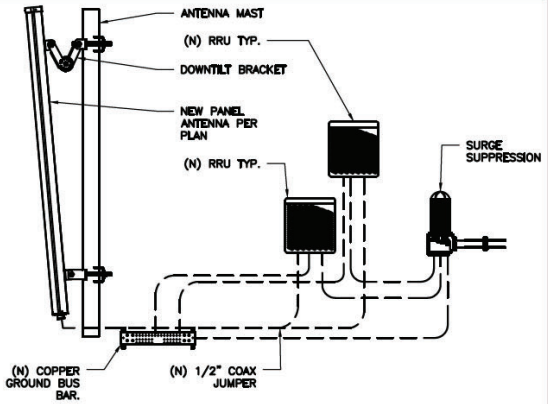
CADWELD GROUNDING CONNECTIONS | N.T.S. | 1



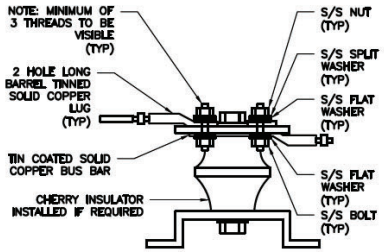
NOTES:

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

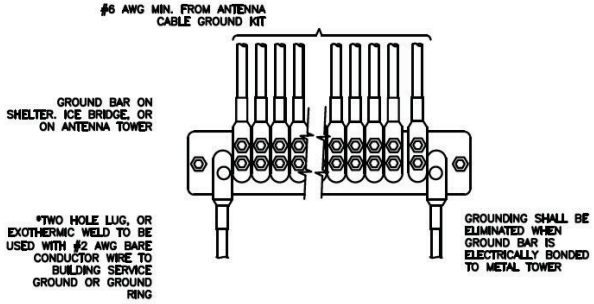
GROUND CABLE CONNECTION | N.T.S. | 2



GROUDING DETAIL | N.T.S. | 3

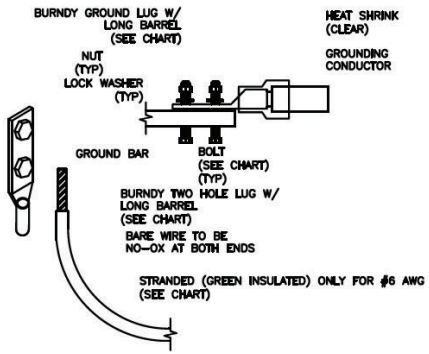


GROUNDING WIRE CONNECTION | N.T.S. | 4



GROUNDWIRE INSTALLATION | N.T.S. | 5

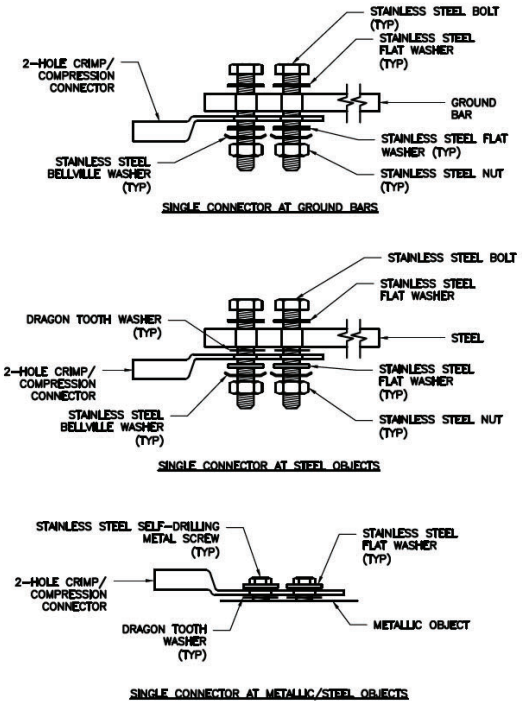
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

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

MECHANICAL LUG CONNECTION | N.T.S. | 6



HARDWARE DETAIL FOR EXTERIOR CONNECTIONS | N.T.S. | 7

at&t

MasTec
Network Solutions
22263 68TH AVENUE SOUTH
KENT, WA 98032

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	03/28/2022	90% CD	RC
B	01/18/2023	90% CD	RC
C	02/23/2023	90% CD	RC
D	03/11/2023	90% CD	RC
E	03/25/2023	90% CD	RC
0	03/28/2023	90% CD	RC
1	04/12/2023	100% CD	RC

MICHAEL S. MOORE
STATE OF WASHINGTON
23006887
4/17/2023
REGISTERED
PROFESSIONAL ENGINEER

PROJECT TITLE

SITE ID: WA6659
FA#: 10029581

GOOD SAMARITAN

401 14TH AVENUE SOUTHEAST
PUYALLUP, WA 98371

EXISTING 94'-1" ROOFTOP

SHEET DESCRIPTION

GROUNDING DETAILS

SHEET NO.

G-2

Radio Frequency Safety Survey Report Predictive (RFSSRP) Prepared For AT&T

Site Name:	GOOD SAMARITAN
FA#	10029581
USID:	75153
Site ID:	WA6659
Address:	401 14TH AVENUE SOUTHEAST PUYALLUP, WA 98371
County:	PIERCE
Latitude:	47.1795000
Longitude:	-122.2905583
Structure Type:	ROOFTOP
Property Owner:	MULTICARE HEALTH SYSTEM
Pace Job:	MRWOR058813
RFDS Technology:	5G NR 1SR CBAND

Report Information

Report Writer: Parul

Report Generated Date: 03-22-2023

Compliance Statement

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be Compliant when the remediation recommended in section 5 or appropriate remediation determined by AT&T is implemented

Table of Contents

1. Executive Summary 3
1.1 Site Summary 3
1.2 Signage Summary (Proposed) 3
1.3 List of Documents used to prepare this Report 3
2. Site Scale Map 4
3. Antenna Inventory 5
4. Predicted Emission 7
4.1 Predictive Cumulative MPE Contribution from All Sources at C-Band Antennas Centerline Level (88.75 ft.) 7
4.2 Predictive Cumulative MPE Contribution from All Sources at PH2 & 3 Level (83.25 & 79.25ft.) 8
4.3 Predictive Cumulative MPE Contribution from All Sources at LTE Antennas Centerline Level (80 ft.) 9
4.4 Predictive Cumulative MPE Contribution from All Sources at AC Duct1&2 Level (70.66 ft.) 10
4.5 Predictive Cumulative MPE Contribution from All Sources at Platform Level (68.66 ft.) 11
4.6 Predictive Cumulative MPE Contribution from All Sources at Main Roof Level (64.66 ft.) 12
4.7 Predictive Cumulative MPE Contribution from All Sources at Ground Level (0 ft.) 13
5. Statement of Compliance 14
5.1 Statement of AT&T Mobility Compliance 14
Appendix A – Statement of Limiting Conditions 17
Appendix B – FCC Guidelines and Emissions Threshold Limits 18
Appendix C – Rules & Regulations 20
Appendix D – General Safety Recommendations 21
Appendix E – References 22
Appendix F – Proprietary Statement 25

1. Executive Summary

1.1 Site Summary

Max Predictive Spatial Average MPE% & Location on Site (General Public)	253139.00% on C-Band Antennas Centerline Level & at AT&T Sec-A antenna no. #A5
Max Predictive Spatial Average MPE% on Ground (General Public)	0.78%
AT&T Mobility Site Compliance	AT&T Mobility will be Compliant by implementing remediation recommended as per section 5 in this report.

TABLE 1: Site Summary

1.2 Signage Summary (Proposed)

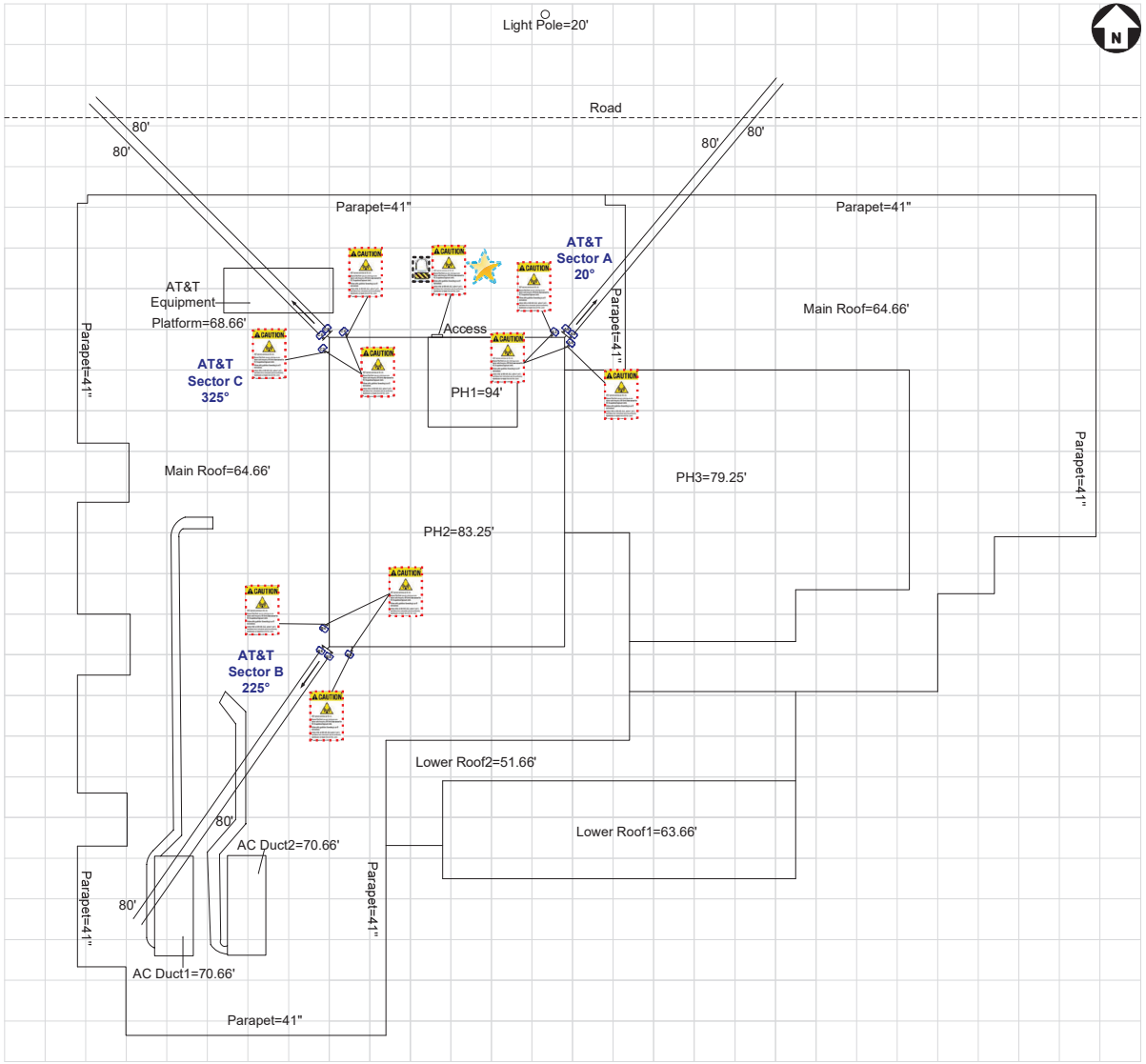
AT&T Signage Locations	Sign Type									
	Safety Instructions	Notice Sign 2	Caution Sign 2	Caution Sign 2A	Caution Sign 2C	Caution 7"x7"	Warning Sign 1B	RF Exposure Map	Lock	Barriers
Access Point(s)			1					1	1	
Alpha			4							
Beta			4							
Gamma			4							

TABLE 2: Signage Summary (Proposed)

1.3 List of Documents used to prepare this Report

- *10029581_WA6659_GOOD SAMARITAN_Mastec - ATT_CD_REV D_03.11.23_(AR) 3.17.23*
- *SEATTLE-OREGON-NO.-ID_WASHINGTON_WATAU3055_2022-5G-NR-Radio_5G-NR-1SR-CBAND_jx615k_PTN_10029581_75153_03-29-2021_Final-Approved_v1.00*
- *WA6659_Loss Table*

2. Site Scale Map



AT&T Antenna	Proposed	Proposed Signage										
Panel	Barrier	Safety Instructions	Notice 2D Adjacent	Caution 2	Caution 2A	Caution 2D Adjacent	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	*Map Scale = 10 ft*
OMNI	Posts											

Antenna Heights (Z)

Ant ID	Operator	Antenna Radiation Centerline	Z-Height from PH2	Z-Height from PH3	Z-Height from AC Duct1&2	Z-Height from Platform	Z-Height from Main Roof	Z-Height from Ground
A2	AT&T	80.00	-7.25	-3.25	5.34	7.34	11.34	76.00
A4	AT&T	80.00	-7.25	-3.25	5.34	7.34	11.34	76.00
A5	AT&T	88.75	4.27	8.27	16.86	18.86	22.86	87.52
A6	AT&T	88.75	4.27	8.27	16.86	18.86	22.86	87.52
B2	AT&T	80.00	-7.25	-3.25	5.34	7.34	11.34	76.00
B4	AT&T	80.00	-7.25	-3.25	5.34	7.34	11.34	76.00
B5	AT&T	88.75	4.27	8.27	16.86	18.86	22.86	87.52
B6	AT&T	88.75	4.27	8.27	16.86	18.86	22.86	87.52
C2	AT&T	80.00	-7.25	-3.25	5.34	7.34	11.34	76.00
C4	AT&T	80.00	-7.25	-3.25	5.34	7.34	11.34	76.00
C5	AT&T	88.75	4.27	8.27	16.86	18.86	22.86	87.52
C6	AT&T	88.75	4.27	8.27	16.86	18.86	22.86	87.52

Table 3.2: Antenna Height(s) Summary Table

4. Predicted Emission

4.1 Predictive Cumulative MPE Contribution from All Sources at C-Band Antennas Centerline Level (88.75 ft.)

Max. Predictive Spatial Average MPE% = **253139.00%**

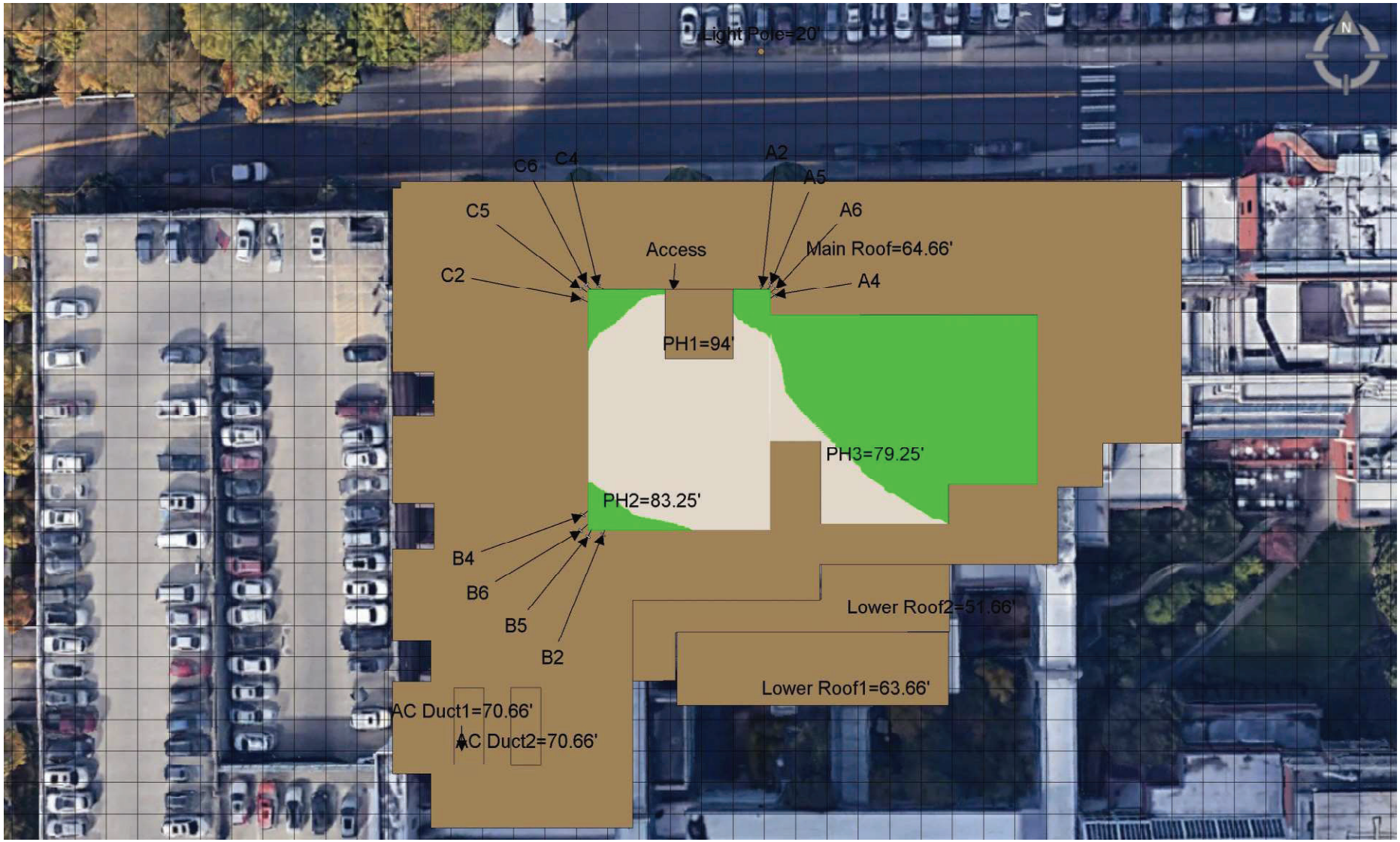
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.2 Predictive Cumulative MPE Contribution from All Sources at PH2 & 3 Level (83.25 & 79.25ft.)



Max. Predictive Spatial Average MPE% = **56.99%**

Proposed Barrier

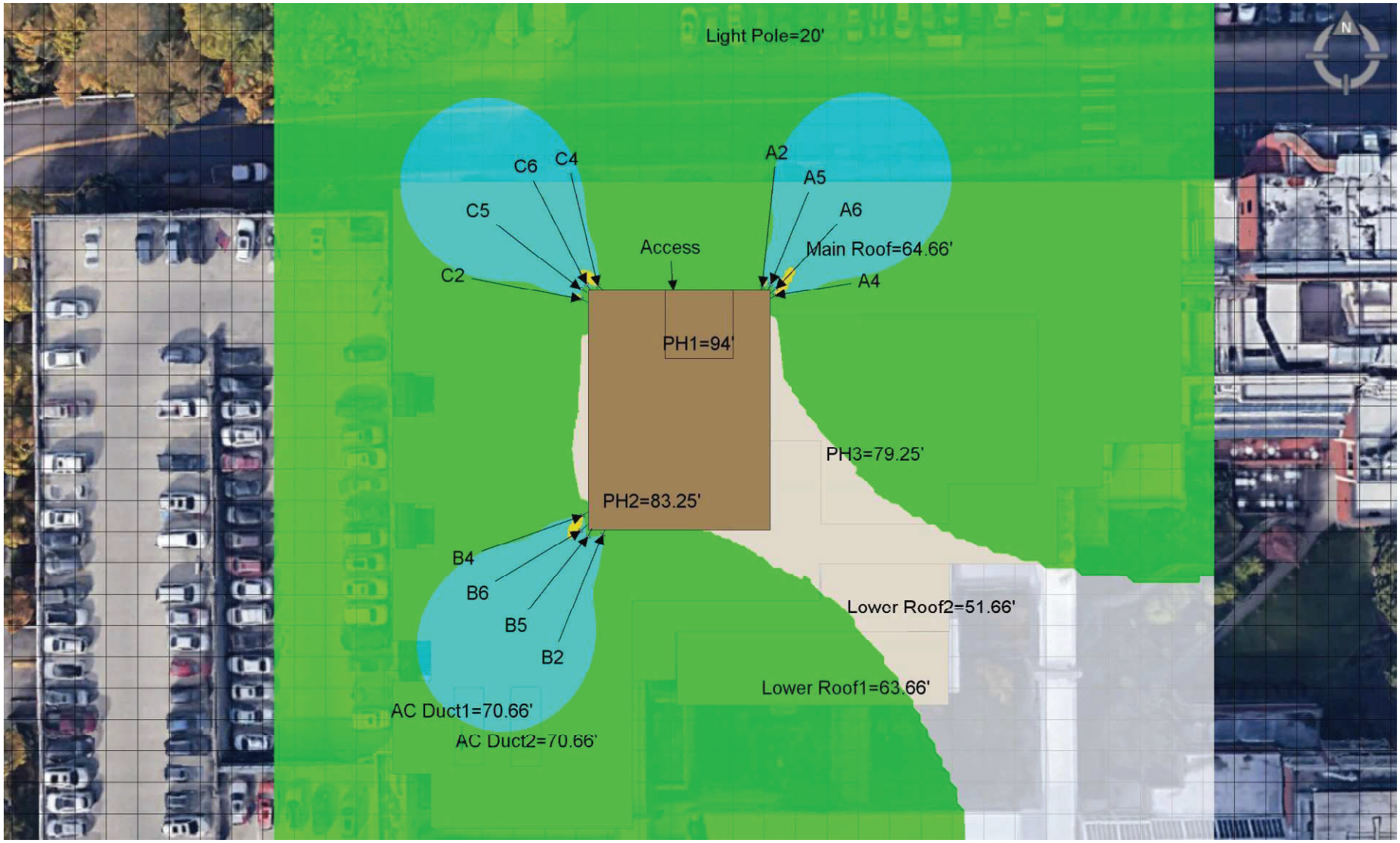
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.3 Predictive Cumulative MPE Contribution from All Sources at LTE Antennas Centerline Level (80 ft.)



Max. Predictive Spatial Average MPE% = **9386.11%**

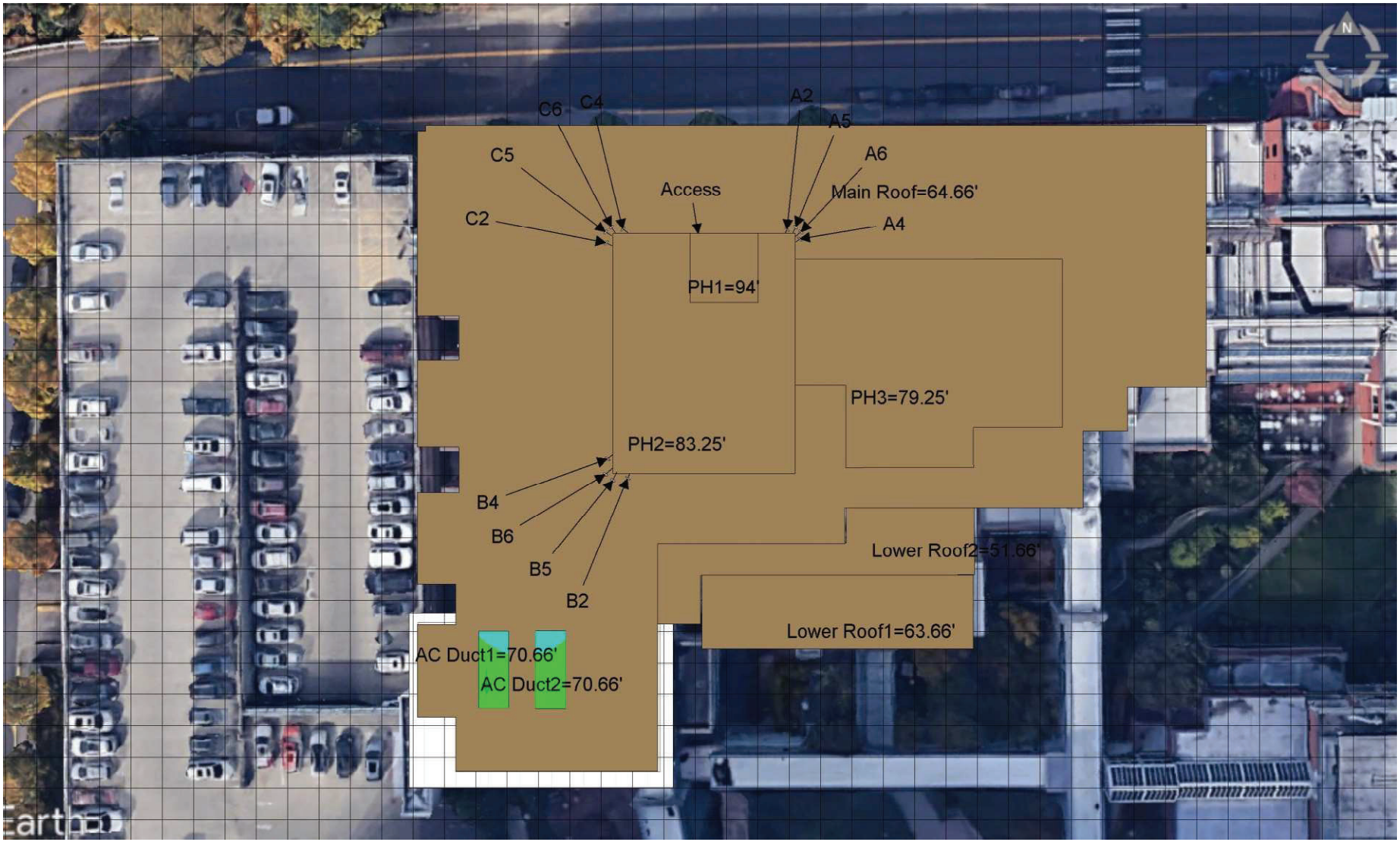
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.4 Predictive Cumulative MPE Contribution from All Sources at AC Duct1&2 Level (70.66 ft.)



Max. Predictive Spatial Average MPE% = **114.37%**

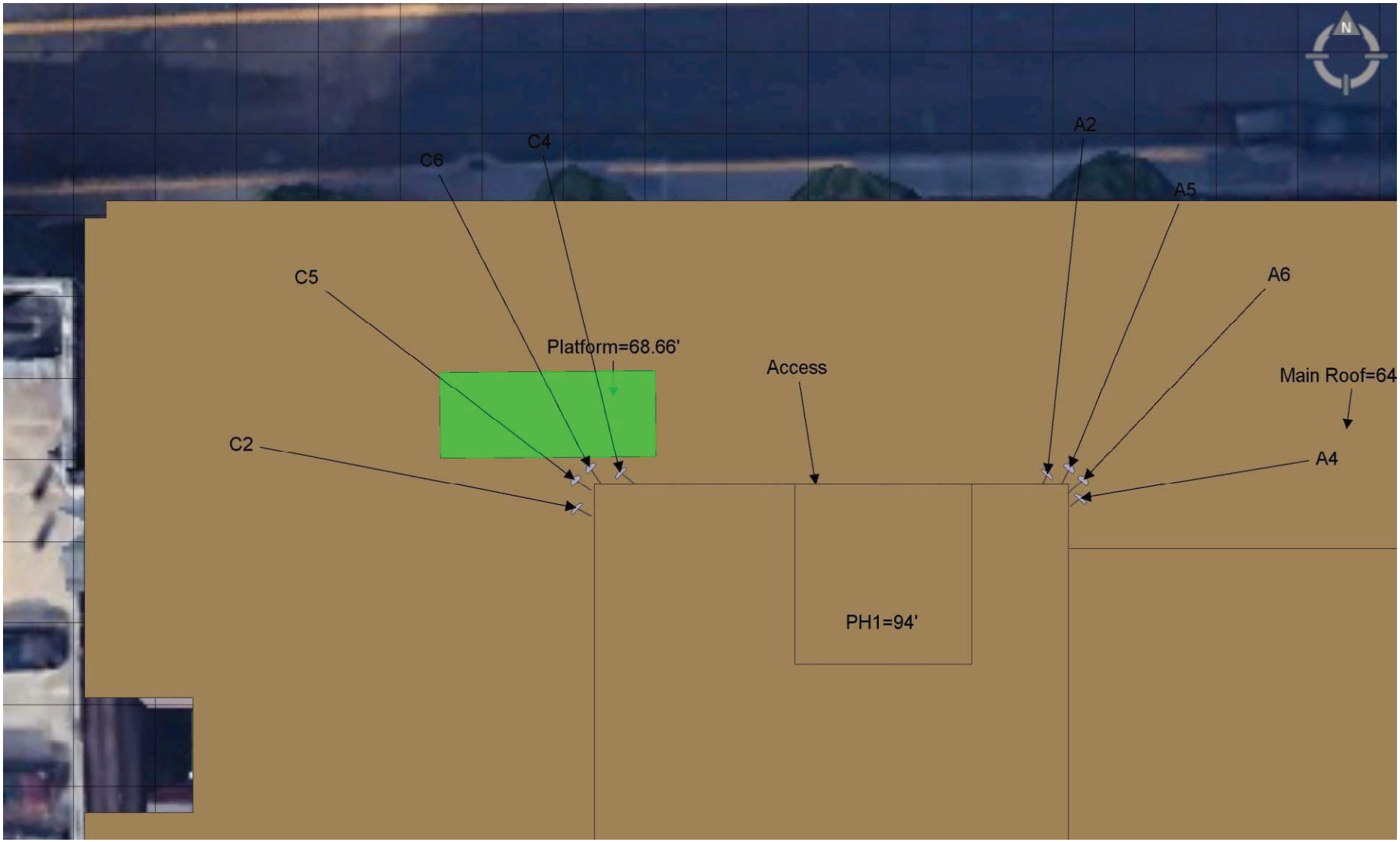
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.5 Predictive Cumulative MPE Contribution from All Sources at Platform Level (68.66 ft.)



Max. Predictive Spatial Average MPE% = **39.79%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.6 Predictive Cumulative MPE Contribution from All Sources at Main Roof Level (64.66 ft.)

Max. Predictive Spatial Average MPE% = **47.74%**

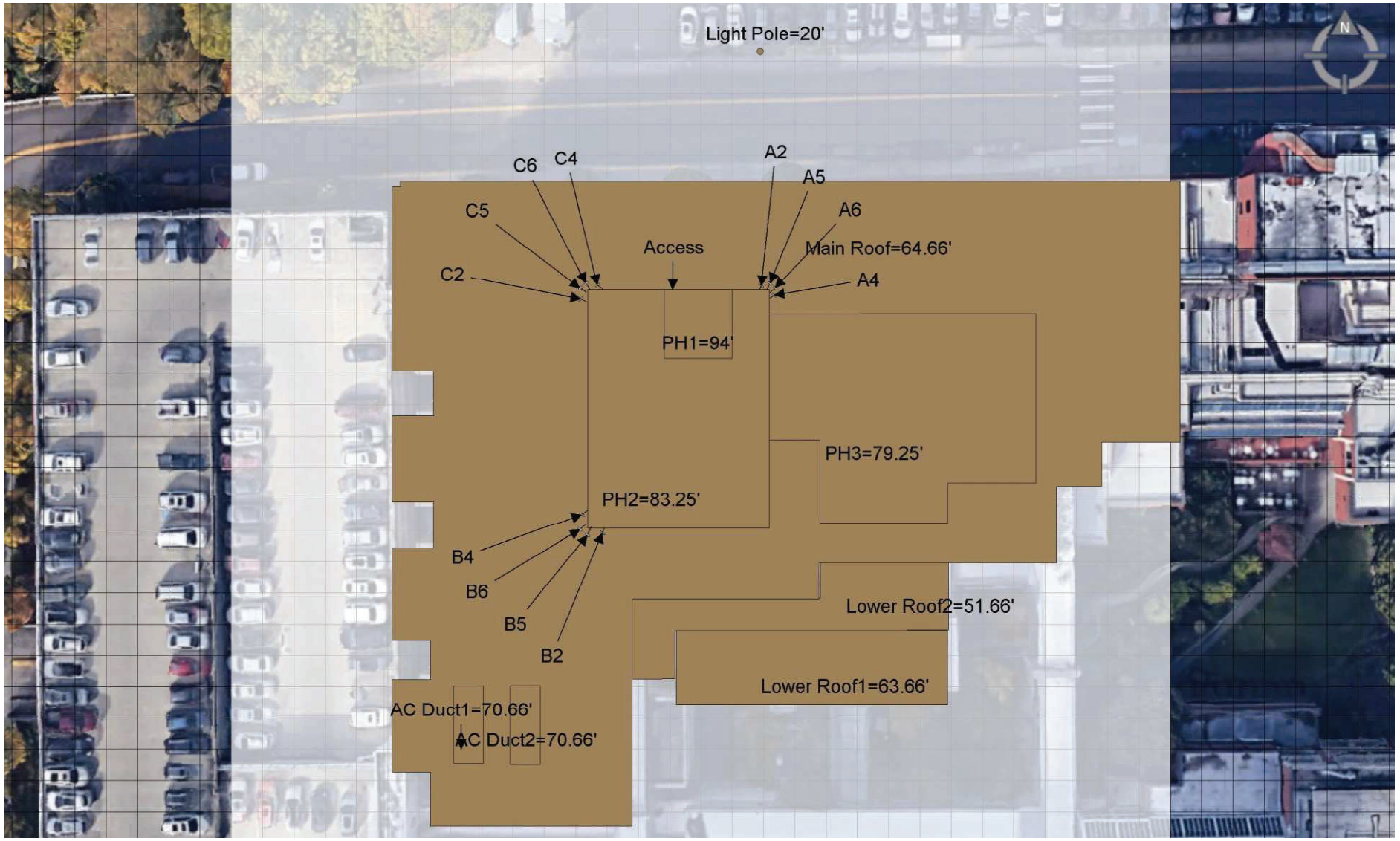
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.7 Predictive Cumulative MPE Contribution from All Sources at Ground Level (0 ft.)



Max. Predictive Spatial Average MPE% = **0.78%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

5. Statement of Compliance

5.1 Statement of AT&T Mobility Compliance

At the time of our Analysis, AT&T Mobility is required to take action to fulfill their Obligations to comply with the FCC's mandate as defined in OET-65

Recommendations

AT&T Alpha Sector:

- One each of Caution 2 Sign to be posted side-by-side of the antennas (Ant. #A2 & Ant. #A4) facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 16. (2 Total Signs)

- One each of Caution 2 Sign to be posted at the back of antenna (Ant. #A2 & Ant. #A4) facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 16. (2 Total Signs)

AT&T Beta Sector:

- One each of Caution 2 Sign to be posted side-by-side of the antennas (Ant. #B2 & Ant. #B4) facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 16. (2 Total Signs)

- One each of Caution 2 Sign to be posted at the back of antenna (Ant. #B2 & Ant. #B4) facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 16. (2 Total Signs)

AT&T Gamma Sector:

- One each of Caution 2 Sign to be posted side-by-side of the antennas (Ant. #B2 & Ant. #B4) facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 16. (2 Total Signs)

- One each of Caution 2 Sign to be posted at the back of antenna (Ant. #B2 & Ant. #B4) facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 16. (2 Total Signs)

Rooftop Access:

- Rooftop access must be restricted via locked door with One Caution 2 Sign & RF Exposure Map to be posted as per RF Exposure diagram shown on page 15 on Rooftop Access Door as shown in the "Recommendations Map – Detailed View" on page 16. (1 Total Sign)

Proposed RF Exposure diagram (Cumulative) for RF Exposure Map:

Proposed Barrier
Proposed Posts

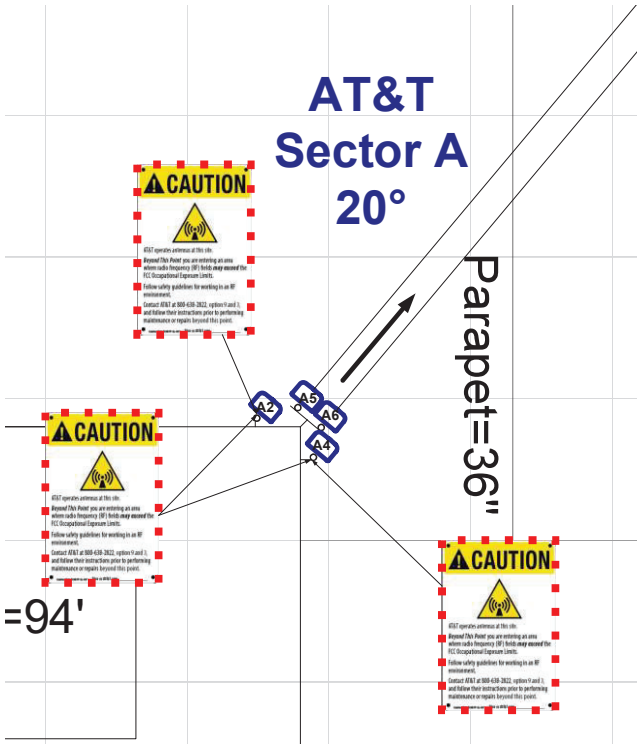
% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

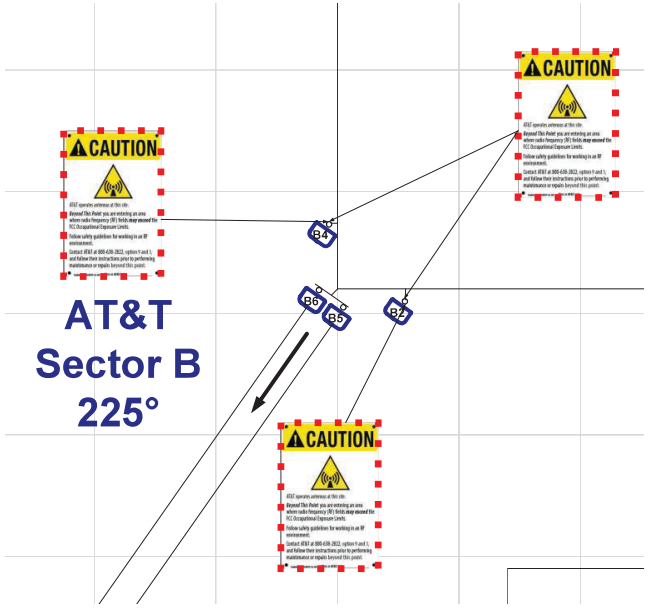
Map Scale = 10 ft

Recommendations Map – Detailed View

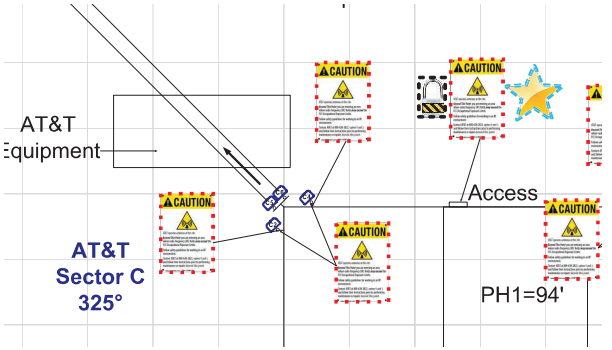
AT&T Alpha Sector



AT&T Beta Sector



AT&T Gamma Sector & Rooftop Access



AT&T Antenna	Proposed	Proposed Signage										
Panel	Barrier	Safety Instructions	Notice 2D Adjacent	Caution 2	Caution 2A	Caution 2D Adjacent	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	*Map Scale = 10 ft*
OMNI	Posts											

Appendix A – Statement of Limiting Conditions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at full power at all times. AT&T has further recommended to assume a 75% duty cycle of maximum radiated power for all LTE & 5G carriers (& consider 100% duty cycle for all UMTS carriers).

In this site compliance report, it is assumed that Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS^ antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.

AT&T recommended to consider - For C-BAND and/or DoD AAS^ antenna(s) 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP.

AT&T recommended to use worst-case (small E-tilt range) tilts for the simulations.

***Power Reduction Factor**: IEC Standard 62232: 2017 allows for a statistically conservative power density model to more realistically define the RF exposure area. AT&T recommends a "0.32" factor to calculate the "Actual Maximum" (time averaged) power value, which accounts for "Beam Scanning," "Scheduling," and "RBS Utilization" This recommended value is a conservative figure modelled and supported by other vendors and through measurements published in scientific articles and white papers by IEEE and others. Those publication are listed below:*

1. IEEE Access, Time-Averaged Realistic Maximum Power Levels for the Assessment of RF Exposure for 5G Radio Base Stations Using Massive MIMO (Published Sept. 18, 2017 / BJÖRN THORS, ANDERS FURUSKÄR, DAVIDE COLOMBI, AND CHRISTER TÖRNEVIK)
2. IEEE Explore, A Statistical Approach for RF Exposure Compliance Boundary Assessment in Massive MIMO Systems (Published Jan. 25, 2018 / Paolo Baracca, Andreas Weber, Thorsten Wild, Christophe Grangeat)
3. IEEE Access, In-situ Measurement Methodology for the Assessment of 5G NR Massive MIMO Base Station Exposure at Sub-6 GHz Frequencies (Published Dec. 20, 2019 / SAM AERTS, LEEN VERLOOCK, MATTHIAS VAN DEN BOSSCHE, DAVIDE COLOMBI, LUC MARTENS, CHRISTER TÖRNEVIK AND WOUT JOSEPH)
4. Applied Sciences, Analysis of the Actual Power and EMF Exposure from Base Stations in a Commercial 5G Network (Published July 30, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)
5. Ofcom Technical Report, Electromagnetic Field (EMF) measurements near 5G mobile phone base stations (Published Feb. 21, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)

MobileComm believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor). Thus, at any time, if power density measurements were made, we believe the real time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modelling in this way, MobileComm has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Other Carrier" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, MobileComm uses the closest frequency in the antenna's range that corresponds to the highest Maximum Exposure Limit (MPE), resulting in a conservative analysis.

Appendix B – FCC Guidelines and Emissions Threshold Limits

All power density values used in this report were analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2).The number of µW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (µW/cm2). The general population exposure limit for the 700 and 800 MHz Bands is approximately 467 µW/cm2 and 567 µW/cm2 respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is 1000 µW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure, have been properly trained in RF safety and can exercise control over their exposure. Occupational/Controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations.

A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- *are exposed to RF energy as a consequence of their employment;*
- *have been made aware of the possibility of exposure; and*
- *can exercise control over their exposure.*

FCC guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

Appendix D – General Safety Recommendations

The following are general recommendations appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.

2. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:

- *adding new antennas that may have been located on the site*
- *removing of any existing antennas*
- *changes in the radiating power or number of RF emitters*

3. Post the appropriate SAFETY INSTRUCTIONS, NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in the report section above, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.

4. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.

5. For a General Public environment the five color levels identified in measured RF emission diagram can be interpreted in the following manner:

- *White represents areas predicted to be greater than or equal to 0% and less than 1% of the MPE general public limits*
- *Green represents areas predicted to be greater than or equal to 1% and less than 100% of the MPE general public limits*
- *Blue represents areas predicted to be greater than or equal to 100% and lesser than 500% of the MPE general public limits.*
- *Yellow represents areas predicted to be greater than or equal to 500% and lesser than 5000% of the MPE general public limits.*
- *Red areas indicates predicted levels greater than or equal to 5000% of the MPE general public limits.*

Appendix E – References

1 - FCC Definition

FCC defines an Occupational or Controlled environment as one where persons are exposed to RF fields as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Typical criteria for an Occupational or Controlled environment is restricted access (i.e. locked doors, gates, etc.) to areas where antennas are located coupled with proper RF warning signage.

FCC defines a site as a General Public or Uncontrolled environment when human exposure to RF fields occurs to the general public or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over the exposure. Typical criteria for a General Public or Uncontrolled environment are unrestricted access (i.e. unlocked or no restrictions) to areas where antennas are located without proper RF warning signage being posted.

2 - Physical Testing measurement procedure and Tools

The Narda Broadband Field Meter NBM-550 can make rapid conformance measurements with evaluation in the time domain when used in conjunction EA5091 probe. This probe is a so-called Shaped Probe, i.e. it is frequency weighted so that it automatically takes account of the FCC Occupational limit values. To collect data, the probe is pointed towards the potential source(s) of EME radiation and moved slowly from ground level up to slightly above head height (approx. 6 ft).

Spatial Average Measurement A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

3 - Site Safety Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: *Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.*

Training and Qualification Verification: *All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).*

Physical Access Control: *Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:*

- *Locked door or gate*
- *Alarmed door*
- *Locked ladder access*
- *Restrictive Barrier at antenna locations (e.g. Chain link with posted RF Sign)*

RF Signage: *Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.*

Assume all antennas are active: *Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.*

Maintain a 3 foot clearance from all antennas: *There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.*

Rooftop RF Emissions Diagram: *Section 4 of this report contains an RF Emissions Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas on the rooftop. This analysis is all theoretical and assumes a duty cycle of 75% for each transmitting antenna at full power. This analysis is a worst case scenario. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.*

4 - Definitions

Compliance- *The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.*

Decibel (dB) – *A unit for measuring power or strength of a signal.*

Duty Cycle – *The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 75% corresponds to continuous operation.*

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – *The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna, this product is divided by the cable losses*

Effective Radiated Power (ERP) – *In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.*

Gain (of an antenna in dbd) – *The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from a reference dipole. Gain is a measure of the relative efficiency of a directional antennas as compared to a reference dipole.*

General Population/Uncontrolled Environment – *Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.*

Generic Antenna – *For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.*

Isotropic Antenna – *An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.*

Maximum Measurement – *This measurement represents the single largest measurement recorded when performing a spatial average measurement.*

Maximum Exposure Limit (MPE) – *The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.*

Occupational/Controlled Environment – *Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.*

Radio Frequency Radiation – *Electromagnetic waves that are propagated from antennas through space.*

Spatial Average Measurement – *A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.*

Transmitter Power Output (TPO) – *The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.*

Appendix F – Proprietary Statement

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by MobileComm are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to MobileComm so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.