

GENERAL NOTES:

1. ALL REFERENCES TO OWNER HEREIN SHALL BE CONSTRUED TO MEAN AT&T OR IT'S DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT ASSIGNED HEREIN. THE CONTRACTOR HAS REPRESENTED TO THE OWNER THAT HE IS AWARE OF THE SCOPE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY TRAINED TO DO THIS WORK IN THE STATE AND/OR COUNTY IN WHICH IT IS TO BE PERFORMED.
3. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT:
 4. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENTS, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
 5. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE TESTING AGENCY PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS ALLOWED TO BEGIN CONSTRUCTION WORK. THE CONTRACTOR SHALL ADVISE AND DIRECT THE METHOD OF CONSTRUCTION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
 6. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY. ALL MATERIALS AND EQUIPMENT MUST BE APPROVED BY THE TESTING AGENCY PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS ALLOWED TO BEGIN CONSTRUCTION WORK. THE CONTRACTOR SHALL ADVISE AND DIRECT THE METHOD OF CONSTRUCTION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION OF THIS PROJECT AND RELATED WORK COMPLETES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
 8. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST EDITION OF THE LOCAL BUILDING CODE.
 9. ALL PROPOSED CELLULAR EQUIPMENT AND EXTURES SHALL BE FURNISHED BY OWNER FOR INSTALLATION BY THE CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE HEREIN.
 10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE A.I.S.C. SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN INCLUDING THE COMPLEMENTARY AND THE A.I.S.C. CODE OF STANDARD PRACTICE.
2. STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A36. ALL STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B. ALL STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500 GRADE B. ALL STRUCTURAL STEEL COMPONENTS AND FABRICATED ASSEMBLIES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
3. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) D.1.1/D1.1M:2010. STRUCTURAL WELDING CODE-STEEL WELD ELECTRODES SHALL BE E70XX.

4. ALL COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE AS SPECIFIED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE GRADE 304 STAINLESS STEEL.
 5. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60, DEFORMED BILLET STEEL BARS. WELDED WIRE FABRIC REINFORCING SHALL CONFORM TO ASTM A185.
 6. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST A.I.S.C. SPECIFICATIONS.
 7. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS.
 8. HOT-DIP GALVANIZE ITEMS SPECIFIED TO BE ZINC-COATED, AFTER FABRICATION WHERE PRACTICAL. GALVANIZING: ASTM A 123, ASTM A 153/A 153M OR ASTM A 653/A 653M, 990, AS APPLICABLE.
 9. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT REPAIR METHOD. REPAIR OF SURFACES DAMAGED BY RUST OR OTHER STEEL MATERIAL SPECIFICALLY DESIGNER FOR REPAIR OF GALVANIZING OR CLEAN AREAS TO BE REPAIRED. AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STOCK OR PASTE MATERIAL IS APPLIED WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS, IN STOCK OR PASTE, SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
 10. CONTRACTOR SHALL FOLLOW THE MANUFACTURER'S INSTRUCTIONS/SPECIFICATIONS IF NO INFORMATION IS CONTAINED IN THESE PLANS OR IF THE MANUFACTURER'S SPECIFICATIONS ARE STRICTER.

PERMITS:

1. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM ALL APPLICABLE GOVERNMENTAL AGENCIES.
2. ANY PERMITS WHICH MUST BE OBTAINED SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
3. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND THE ACI 318-14, "BUILDING REQUIREMENTS FOR STRUCTURAL CONCRETE".
4. THE CONTRACTOR SHALL NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
5. ALL DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE OWNER IMMEDIATELY IF DISCREPANCIES ARE DISCOVERED. THE CONTRACTOR SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.

MISCELLANEOUS:

1. ALL THREADED STRUCTURAL FASTENERS FOR ANTENNA SUPPORT ASSEMBLIES SHALL CONFORM TO ASTM A307 OR ASTM 36. ALL STRUCTURAL FASTENERS FOR STRUCTURAL STEEL FRAMING SHALL CONFORM TO ASTM A325. FASTENERS SHALL BE 5/8" MIN. DIA. BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED FROM THE PLANE. ALL EXPOSED FASTENERS, NUTS, AND WASHERS SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED. ALL ANCHORS INTO CONCRETE SHALL BE STAINLESS STEEL.
2. THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
3. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY NORTH AND NOTIFY CONSULTANT OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.
4. PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS THROUGH GROUND CONDUCTORS. USE GRADE 304 STAINLESS STEEL HARDWARE THROUGHOUT.
5. THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTIONS.

6. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS TO BE A MIN. OF 8" RADIUS.
7. FOR ROUNDING TO BUILDING FRAME AND HATCH PLATE GROUND BARS, USE A TWO-BOLT HOLE NEPA DRILLED CONNECTOR SUCH AS T&B 32007 OR APPROVED EQUAL.
8. FOR ALL EXTERNAL GROUND CONNECTIONS, CLAMPS AND GAWELOS APPLY A LIBERAL PROTECTIVE COATING OR AN ANTI-OXIDE COMPOUND SUCH AS NO-OXIDE A BY DEARBORN CHEMICAL COMPANY.
9. REPAIR ALL METAL SURFACES THAT HAVE BEEN CUT OR DAMAGED BY REMOVING ANY EXISTING RUST AND APPLYING COULD GALVANIZATION.
10. ANTENNA CABLE LENGTHS HAVE BEEN DETERMINED BASED ON THESE PLANS. CABLE LENGTHS LISTED ARE APPROXIMATED AND ARE NOT INTENDED TO BE USED FOR FABRICATION, DUE TO FIELD CONDITIONS. ACTUAL CABLE LENGTHS VARY. CONTRACTOR MUST FIELD VERIFY ANTENNA CABLE LENGTHS PRIOR TO ORDER.

REV	DATE	DESCRIPTION
A	7/19/19	PRELIMINARY CD-REV '2'
B	8/4/19	PRELIMINARY CD-REV '3'
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USA ENG PROJECT NO.: -
 DRAWN BY: _____ CHECKED BY: _____
 WK: _____



8801 W SUNRISE BLVD
 PLANTATION, FL 33322



6100 BROKEN SOUND PKWY
 SUITE 9, 33487
 BOCA RATON, FL



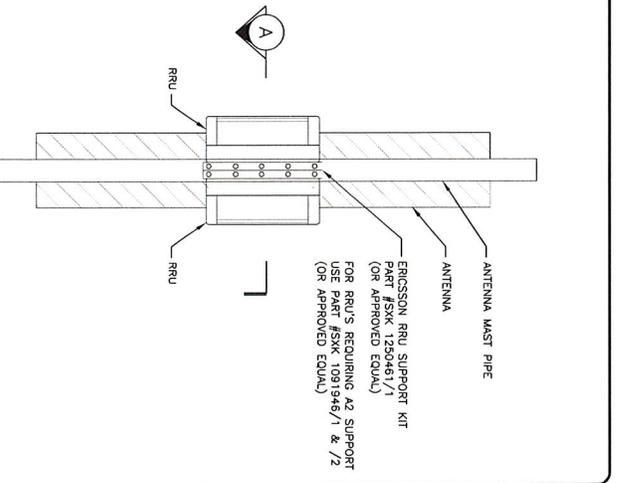
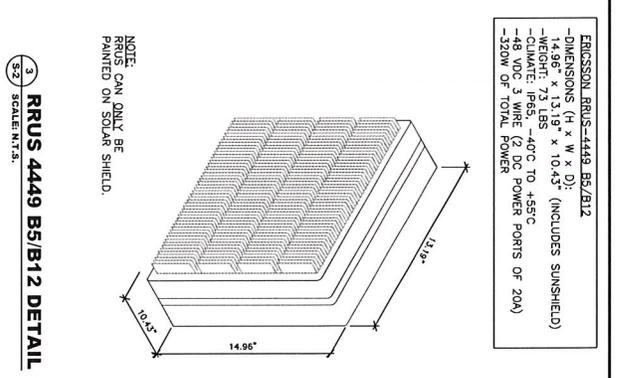
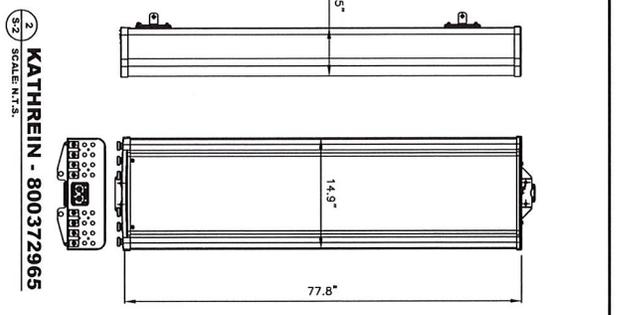
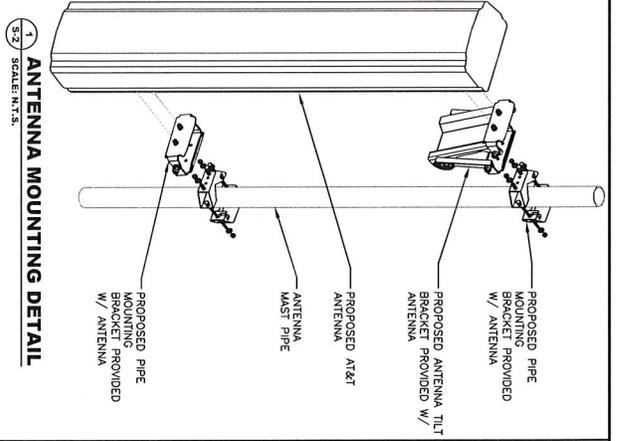
2818 CRESSWELL BLVD.
 WESTLEY SHIELD, FL 33544
 (813) 994-0265
 FL CO# #31705

MARC P MAIER, PE
 FL PROFESSIONAL ENGINEER #C 75153

DXZW
FA #10023437
 2000 CITY HALL DRIVE
 LAUDERHILL, FL 33313

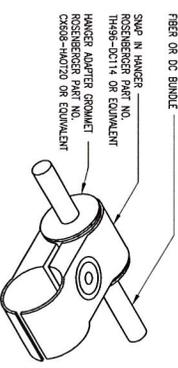
GENERAL NOTES,
 ABBREVIATIONS,
 SHEET NUMBER

GN-1



MISCELLANEOUS MATERIALS SCHEDULE

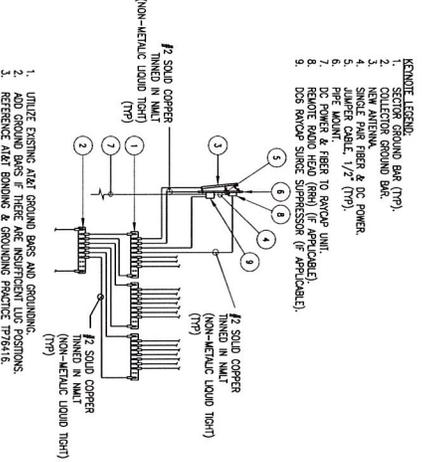
DESCRIPTION	MODEL NUMBER	QUANTITY
SMP-IN HANGER	TH498-DC114	150
HANGER ADAPTER GROMMET	CH603-HA0711	150
HANGING GRIP	CH051-HCS99PL	2
HANGING GRIP	CH06-HC12PL	1
GROUNDING KIT	-	-



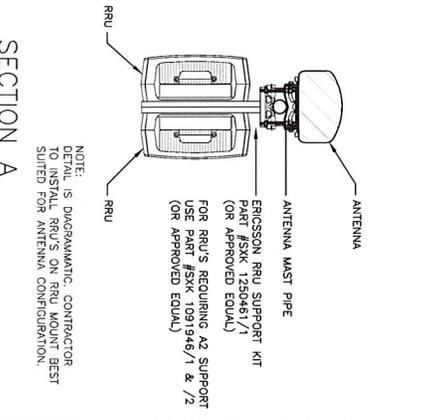
5 HANGER ADAPTER GROMMET DETAILS
SCALE: N.T.S.

NOTES:
1. REFER TO USA DOCUMENTS FOR EXACT CABLE CROSS SECTION AND GROUNDING STRAP TYPES FOR PROPOSED ANTENNA HANGER TYPES.
2. SUPPORT THE FIBER AND DC CABLE BUNDLES REFER TO STRUCTURAL ANALYSIS FOR EXACT CABLE ROUTING AND MOUNTING CONFIGURATION.

6 ANTENNA GROUNDING SCHEMATIC
SCALE: N.T.S.



7 RRU MOUNTING DETAIL
SCALE: N.T.S.



DXZW
FA #10023437
2000 CITY HALL DRIVE
LAUDERHILL, FL 33313
MISC. DETAILS
SHEET NUMBER
S-2

MAEC P MAIER, PE
FL PROFESSIONAL ENGINEER LIC # 7513

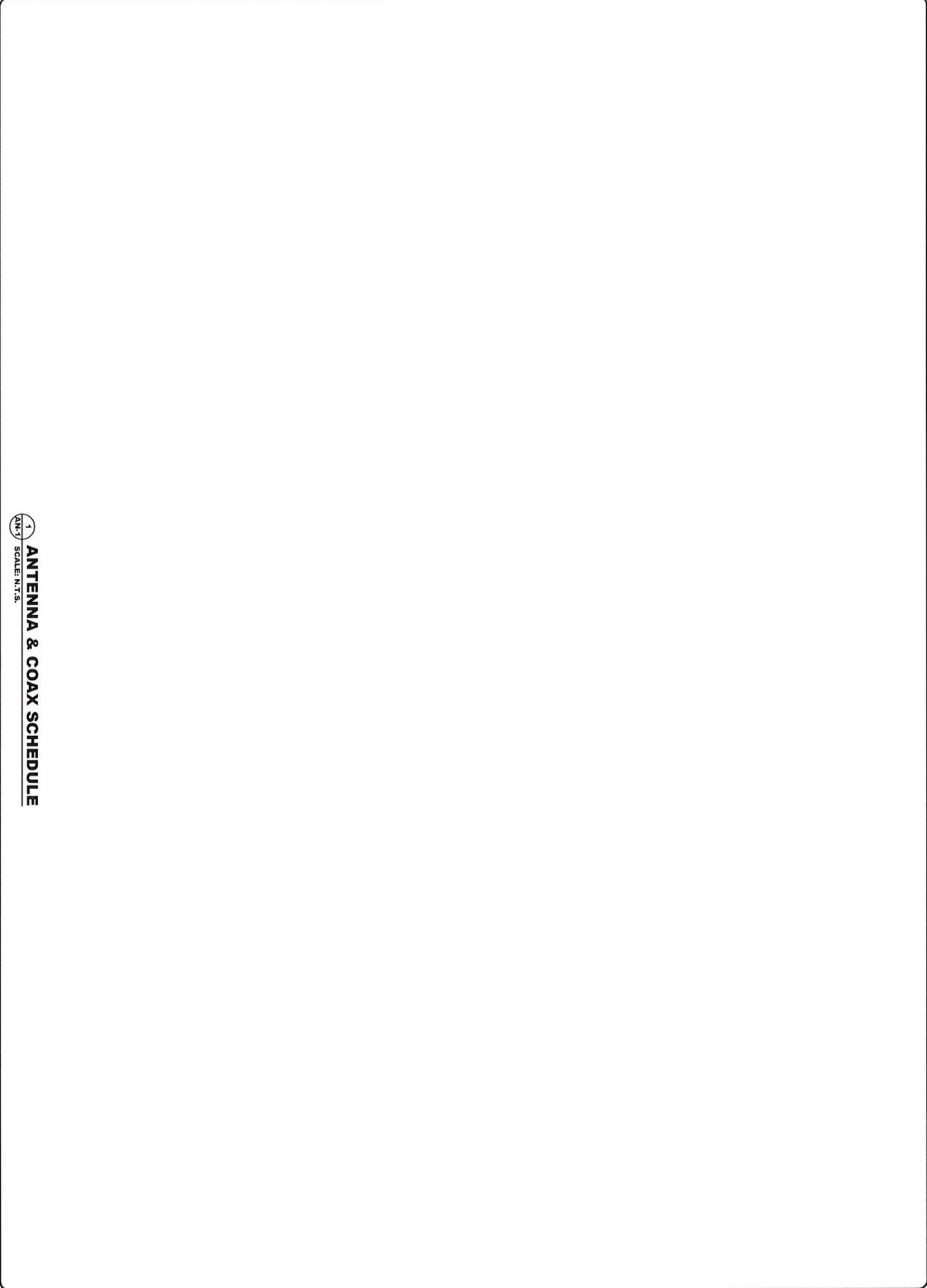
PREPARED BY:
USA ENGINEERING
2818 CYPRESS RIDGE BLVD.
WESTLEY CAVEN, FL 33544
(813) 994-0365
FL COA #31705

Mastec
Network Solutions
6100 BROKEN SOUND PKWY
SUITE 100
BOCA RATON, FL 33487

at&t
8601 W SUNRISE BLVD
PLANTATION, FL 33322

USA ENG PROJECT NO.:
DRAWN BY: CHECKED BY:
WL RI

REV	DATE	DESCRIPTION
A	1/13/19	PRELIMINARY CD, REV 'A'
B	6/2/19	REBALANCER CD, REV 'B'
0	9/7/19	REV '0' CD, SSIBD
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ANTENNA & COAX SCHEDULE
SCALE: N.T.S.

REV	DATE	DESCRIPTION
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B	9/4/19	PRELIMINARY COA REV 'B'
C	9/9/19	REV 'C' COA SHEET
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USA ENG PROJECT NO.:

DRAWN BY: _____ CHECKED BY: _____

WL: _____ RI: _____



8801 W SUNRISE BLVD
PLANTATION, FL 33322



6100 BROKEN SOUND PKWY
BOCA RATON, FL 33487



2818 CYPRESS RIDGE BLVD.
WESLEY CHURCH, FL 33544
(813) 994-0365
FL COA #31705

PREPARED BY:

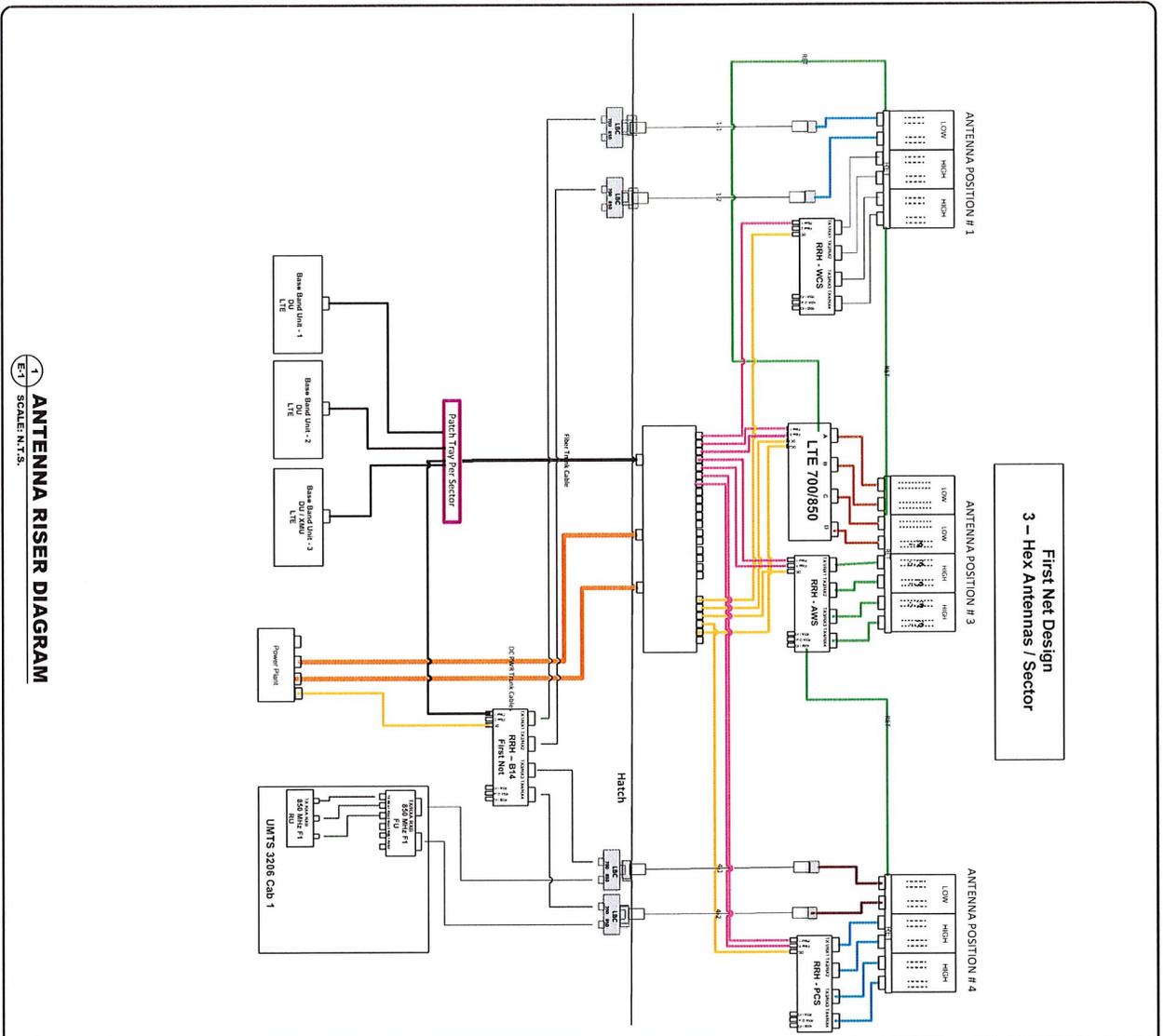
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FL PROFESSIONAL ENGINEER LIC # 72513

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FA #10023437

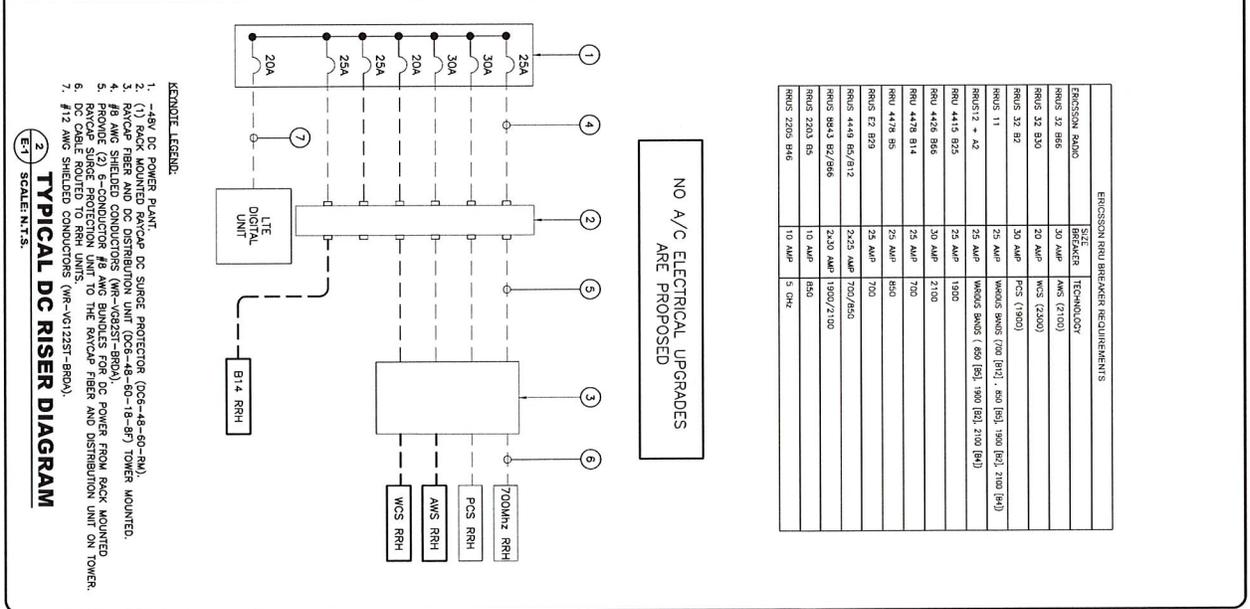
2000 CITY HALL DRIVE
LAUDERHILL, FL 33313

ANTENNA SCHEDULE

SHEET NUMBER
AN-1



1 ANTENNA RISER DIAGRAM
 E1 SCALE:N.T.S.



- KEYNOTE LEGEND:**
- 48V DC POWER PLANT
 - (1) RACK MOUNTED RAYCAP DC SURGE PROTECTOR (DCS-48-80-RN).
 - RAYCAP FIBER AND DC DISTRIBUTION UNIT (DCS-48-80-18-8F) TOWER MOUNTED.
 - RAYCAP FIBER AND DC DISTRIBUTION UNIT (DCS-48-80-18-8F) TOWER MOUNTED.
 - RAYCAP SURGE PROTECTION UNIT TO THE RAYCAP FIBER AND DISTRIBUTION UNIT ON TOWER.
 - DC CABLE ROUTED TO RRH UNITS.
 - #12 AWG SHIELDED CONDUCTIONS (WR-4012ST-BROA).

ERICSSON RRH BREAKER REQUIREMENTS

ERICSSON RADIO BREAKER TECHNOLOGY	AMS (7100)	WCS (2300)	PCS (1900)	WCS SWMS (700 [81], 800 [81], 900 [81], 2100 [81])	WCS SWMS (600 [81], 800 [81], 900 [81], 2100 [81])	AMS (700)	WCS (2300)	PCS (1900)	WCS SWMS (700 [81], 800 [81], 900 [81], 2100 [81])	WCS SWMS (600 [81], 800 [81], 900 [81], 2100 [81])	AMS (700)	WCS (2300)	PCS (1900)	WCS SWMS (700 [81], 800 [81], 900 [81], 2100 [81])	WCS SWMS (600 [81], 800 [81], 900 [81], 2100 [81])
RRUS 32 856	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP
RRUS 32 850	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP
RRUS 32 82	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP
RRUS 11	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRUS12 - 42	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRU 4415 925	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRU 4428 866	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRU 4478 814	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRU 4478 814	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRU 4478 814	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRUS 4448 B6/B12	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP
RRUS 4448 B6/B12	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP	30 AMP
RRUS 8043 B1/866	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP	25 AMP
RRUS 2203 B5	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP
RRUS 2208 H46	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP	10 AMP

REV	DATE	DESCRIPTION
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USA ENG PROJECT NO. -
 DRAWN BY: _____ CHECKED BY: _____
 WL _____ RN _____

at&t
 8601 W SUNRISE BLVD
 PLANTATION, FL 33322

Mastec
 Network Solutions
 6100 BROCKLEY SOUND PKWY
 BOCA RATON, FL 33487

PREPARED BY:
USA ENGINEERING
 2818 CRESSKROCK BLVD.
 WESTLEY CHAPEL, FL 33544
 (813) 994-0355
 FL COA #311705

MARC P MAIER, PE
 FL PROFESSIONAL ENGINEER LIC # 75513

DXZW
FA #10023437
 2000 CITY HALL DRIVE
 LAUDERHILL, FL 33313
 ELECTRICAL AND
 GROUNDING DIAGRAMS

SHEET NUMBER
E-1