

CONSTRUCTION SET



**PROJECT:** DO MACRO  
**SITE NAME:** NY13/366 CAC  
**SITE CASCADE:** AL43XC750  
**CROWN BUN:** 803589  
**SITE ADDRESS:** 1397 DRYDEN ROAD  
 ITHACA, NY 14850  
**SITE TYPE:** 125'-0" MONOPOLE

**Sprint**  
 6500 Sprint Parkway  
 Overland Park, KS 66251

**CC CROWN CASTLE**  
 The Foundation for a Physical World

**FPA FRENCH & PARRELLO ASSOCIATES**  
 1800 Pine Street, Suite 907, Wall Street Station, New York, NY 10038  
 Tel: (212) 691-1000 Fax: (212) 691-1001

SEAL:  
  
 PETER J. TARDY, P.E.  
 NEW YORK PROFESSIONAL ENGINEER U.C. NO. 077612

SITE INFORMATION	AREA MAP	PROJECT DESCRIPTION	DRAWING SCHEDULE	REVISIONS																															
<p><b>APPLICANT:</b>                      SPRINT                      6500 SPRINT PARKWAY                      OVERLAND PARK, KS 66251</p> <p><b>PROPERTY OWNER:</b>                      CROWN ATLANTIC COMPANY L.L.C.                      850 PINETOWN ROAD, SUITE 518                      FORT WASHINGTON, PA 19034</p> <p><b>TOWER OWNER:</b>                      CROWN ATLANTIC COMPANY L.L.C.                      850 PINETOWN ROAD, SUITE 518                      FORT WASHINGTON, PA 19034</p> <p><b>LATITUDE (NAD83):</b>                      N 41° 50' 24.6" (NAD83)</p> <p><b>LONGITUDE (NAD83):</b>                      W 75° 18' 4.0" (NAD83)</p> <p><b>COUNTY:</b>                      DELAWARE COUNTY</p> <p><b>ZONING JURISDICTION:</b>                      VILLAGE OF HANCOCK</p>		<p><b>PROJECT DESCRIPTION</b></p> <ul style="list-style-type: none"> <li>THIS IS A MODIFICATION TO AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY</li> <li>NO POTABLE WATER SUPPLY IS TO BE PROVIDED TO THIS SITE</li> <li>NO WASTE WATER WILL BE GENERATED AT THIS LOCATION</li> <li>APPLICANT'S MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH</li> </ul> <p><b>SCOPE OF WORK</b></p> <p>PROJECT CONSISTS OF REMOVING (3) EXISTING PANEL ANTENNAS AND (6) COAX CABLES, AND INSTALLING (8) PROPOSED PANEL ANTENNAS, (3) PROPOSED RRHS, (5) PROPOSED FILTERS, (4) PROPOSED FEEDLINES AND RELOCATING (3) RRHS FROM GROUND TO TOWER TOP TO THE EXISTING WIRELESS TELECOMMUNICATIONS FACILITY</p>	<table border="1"> <thead> <tr> <th>DWG #</th> <th>DRAWING TITLE</th> </tr> </thead> <tbody> <tr> <td>T-1</td> <td>TITLE SHEET</td> </tr> <tr> <td>SP-1</td> <td>CONSTRUCTION SPECIFICATIONS</td> </tr> <tr> <td>SP-2</td> <td>CONSTRUCTION SPECIFICATIONS</td> </tr> <tr> <td>A-1</td> <td>COMPOUND PLANS AND NOTES</td> </tr> <tr> <td>A-2</td> <td>ELEVATIONS</td> </tr> <tr> <td>A-3</td> <td>ANTENNA AND RRU CONFIGURATIONS AND DETAILS</td> </tr> <tr> <td>A-4</td> <td>CABINET DETAILS AND ANTENNA SCHEDULE</td> </tr> <tr> <td>A-5</td> <td>ANTENNA PLUMBING DIAGRAMS</td> </tr> <tr> <td>E-1</td> <td>ELECTRICAL ONE-LINE DIAGRAM AND DETAILS</td> </tr> <tr> <td>E-2</td> <td>GROUND DETAILS AND NOTES</td> </tr> </tbody> </table>	DWG #	DRAWING TITLE	T-1	TITLE SHEET	SP-1	CONSTRUCTION SPECIFICATIONS	SP-2	CONSTRUCTION SPECIFICATIONS	A-1	COMPOUND PLANS AND NOTES	A-2	ELEVATIONS	A-3	ANTENNA AND RRU CONFIGURATIONS AND DETAILS	A-4	CABINET DETAILS AND ANTENNA SCHEDULE	A-5	ANTENNA PLUMBING DIAGRAMS	E-1	ELECTRICAL ONE-LINE DIAGRAM AND DETAILS	E-2	GROUND DETAILS AND NOTES	<table border="1"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>12/05/17</td> <td>ISSUED FOR REVIEW</td> </tr> <tr> <td>1</td> <td>01/24/18</td> <td>ISSUED AS FINAL</td> </tr> </tbody> </table> <p><b>NOTES:</b></p> <p>THIS DOCUMENT HAS BEEN PREPARED FOR A 24" X 36" FORMAT DO NOT SCALE IF PLOTTED ON ANY OTHER FORMAT</p> <p>IF THIS DOCUMENT DOES NOT CONTAIN THE RAISED SEA OF THE UNDERSIGNED PROFESSIONAL, IT IS NOT A VALID DOCUMENT AND NO LIABILITY IS ASSUMED FOR THE INFORMATION SHOWN HEREON.</p> <p>THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.</p>	REV.	DATE	REVISION DESCRIPTION	0	12/05/17	ISSUED FOR REVIEW	1	01/24/18	ISSUED AS FINAL
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	<p><b>LOCATION MAP</b></p>	<p><b>APPLICABLE CODES</b></p> <p>ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL 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.</p> <ol style="list-style-type: none"> <li>INTERNATIONAL BUILDING CODE, 2015 EDITION</li> <li>INTERNATIONAL MECHANICAL CODE, 2015 EDITION</li> <li>ANSI EM/ITA-222 STRUCTURAL STANDARD</li> <li>NFPA 780 - LIGHTNING PROTECTION CODE</li> <li>UNIFORM PLUMBING CODE</li> <li>NATIONAL ELECTRICAL CODE</li> </ol>	<p><b>DIRECTIONS</b></p> <p>START: 3329 STREET RD., BENSALLEN, PA 19020</p> <ol style="list-style-type: none"> <li>GET ON I-85 S IN EDDINGTON FROM PA-132 E/STREET RD</li> <li>HEAD SOUTHEAST</li> <li>TURN RIGHT ONTO PA-132 WEST</li> <li>KEEP LEFT TO MERGE ONTO US-1 NORTH</li> <li>TAKE THE PENNSYLVANIA TURNPIKE EXIT</li> <li>TAKE EXIT #20 TO MERGE ONTO I-476 NORTH</li> <li>TAKE EXIT #115 TOWARD SCRANTON</li> <li>MERGE ONTO PA-318 NORTH</li> <li>SLIGHT RIGHT TO MERGE ONTO I-81 NORTH</li> <li>TAKE EXIT #167 ONTO US-6 EAST</li> <li>TURN LEFT ONTO BELMONT STREET</li> <li>TURN RIGHT ONTO SHERWOOD DRIVE</li> <li>MERGE ONTO PA-170 SOUTH</li> <li>SLIGHT LEFT ONTO CREEK DRIVE</li> <li>SLIGHT RIGHT ONTO PLEASANT VIEW DRIVE</li> <li>CONTINUE ONTO SOUTH PRESTON ROAD</li> <li>TURN RIGHT ONTO PA-370 EAST</li> <li>TURN LEFT ONTO PA-191 NORTH</li> <li>CONTINUE ON SOUTH PENNSYLVANIA AVENUE</li> <li>TURN RIGHT ONTO W. FRONT STREET</li> <li>CONTINUE ONTO NY-268 NORTH</li> <li>CONTINUE STRAIGHT ONTO CR-17</li> <li>TURN LEFT ONTO CITY BROOK ROAD</li> </ol>	<p><b>NY13/366 CAC</b>  <b>AL43XC750</b>  <b>1387 DRYDEN ROAD</b>  <b>ITHACA, NY 14850</b>  <b>TOMPKINS COUNTY</b></p> <p><b>TITLE SHEET</b></p> <table border="1"> <tr> <td>DATE: 12/05/17</td> <td>SCALE: AS NOTED</td> </tr> <tr> <td>DRAWN BY: R.P.J.</td> <td>SHEET #: T-1</td> </tr> <tr> <td>CHECKED BY: P.A.T.</td> <td></td> </tr> <tr> <td>PROJECT # 24381171</td> <td></td> </tr> </table>	DATE: 12/05/17	SCALE: AS NOTED	DRAWN BY: R.P.J.	SHEET #: T-1	CHECKED BY: P.A.T.		PROJECT # 24381171																								
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**SP-1**

DATE: 12/03/17  
SCALE: AS NOTED

DRAWN BY: MJA  
CHECKED BY: PLT  
PROJECT # 2434171

**CONSTRUCTION SPECIFICATIONS**

**NY13/966-CAC**  
AT43XC750  
1887 DRYDEN ROAD  
ITHACA, NY 14850  
TOMPKINS COUNTY

NOTES:  
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THESE DOCUMENTS ARE CONSIDERED TO BE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED, OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REV	DATE	DESCRIPTION

REVISIONS

DATE: 12/03/17  
BY: MJA

**FRENCH & PARFIELD ASSOCIATES**

**CC CROWN CASTLE**

**SECTION 01 100 - SCOPE OF WORK**  
THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL, CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF.  
PREFERENCE SHOULD BE GIVEN TO THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS.  
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**SECTION 01 200 - COMPANY FINISHED MATERIAL AND EQUIPMENT**  
C. APPLICABLE INSTALLATION MORE IDENTIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS  
COMPANY FINISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DRAWINGS.  
CONTRACTOR IS RESPONSIBLE FOR PROTECTING MATERIAL AND EQUIPMENT THROUGHOUT THE CONSTRUCTION DURATION.  
CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS.  
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**SECTION 01 300 - CELL SITE CONSTRUCTION**  
NOTICE TO PROCEED  
NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE SIGNATURE OF WORK ORDER.  
CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, DEBRIS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.  
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**SECTION 01 400 - SUBMITTALS & TESTS**  
ALL TESTS SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE GRANTED.  
TESTS AND INSPECTIONS:  
A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.  
B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:  
1. COAX SWEEPS AND FIBER TESTS PER T36-0200 (LATEST REVISION) ANTENNA LINE ACCEPTANCE STANDARDS.  
2. AZIMUTH, DOWN TILT, CENTRALISE AND DOWNTILT MUST CONFORM WITH RF CONFIGURATION DATA.  
3. ANTENNA ASSEMBLY SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.  
4. ALL TESTING REQUIRED BY APPLICABLE INSTALLATION MORE IDENTIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS, BUT IS NOT LIMITED TO THE FOLLOWING:  
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1. AZIMUTH, DOWN TILT, AZI FROM SUNSIGHT INSTRUMENTS - ANTENNA ALIGNMENT TOOL (AAT), INSTALLED AZIMUTH, CENTRALISE AND DOWNTILT MUST CONFORM WITH RF CONFIGURATION DATA.  
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**SECTION 11 700 - ANTENNA ASSEMBLY, REMOTE RADIO UNITS AND CABLE INSTALLATION**  
REMARKS:  
THIS SECTION SPECIFICATION OF ANTENNAS, RUPS, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FEED CABLE.  
ANTENNAS AND RUPS -  
THE NUMBER AND TYPE OF ANTENNAS AND RUPS TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.  
HYBRID CABLES -  
HYBRID CABLES WILL BE ORDERED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DIMENSIONS AND THE APPLICABLE MANUFACTURER'S RECOMMENDATIONS.  
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**CONTINUE FROM SP-1**

- A. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
- B. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED IN TS 0200 (LATEST REVISION).
- C. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL BTTZ ENGINEERING NOTICE - EN 2012-001, REV 1

**WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:**

- A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.
- B. WEATHERPROOFING USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.
  - 1. COLD SHRINK ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CTS SERIES OR EQUAL.
  - 2. SELF-AMALGAMATING TAPE: CLEAN SURFACES, APPLY A DOUBLE WRAP OF SELF-AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF-AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF-AMALGAMATING TAPE.
  - 3. 3M SLIM LOCK CLOSURE 718: SUBSTITUTIONS WILL NOT BE ALLOWED.
  - 4. **OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE**

**SECTION 11 600 - INSTALLATION OF MULTIMODAL BASE STATIONS (MMBS) AND RELATED EQUIPMENT**

**SUMMARY:**

- A. THIS SECTION SPECIFIES MMBS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).
- B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRED BY THE APPLICABLE INSTALLATION MOPS.
- C. COMPLY WITH MANUFACTURER'S INSTALLATION AND START-UP REQUIREMENTS

**DC CIRCUIT BREAKER LABELING**

- A. NEW DC CIRCUIT BREAKERS REQUIRED IN MMBS CABINET SHALL BE CLEARLY IDENTIFIED AS TO RRU BEING SERVICED

**SECTION 26 100 - BASIC ELECTRICAL REQUIREMENTS**

**SUMMARY:**

THIS SECTION SPECIFIES BASIC ELECTRICAL REQUIREMENTS FOR SYSTEMS AND COMPONENTS.

**QUALITY ASSURANCE:**

- A. ALL EQUIPMENT FURNISHED UNDER DIVISION 26 SHALL CARRY UL LABELS AND LISTINGS WHERE SUCH LABELS AND LISTINGS ARE AVAILABLE IN THE INDUSTRY.
- B. MANUFACTURERS OF EQUIPMENT SHALL HAVE A MINIMUM OF THREE YEARS EXPERIENCE WITH THEIR EQUIPMENT INSTALLED AND OPERATING IN THE FIELD IN A USE SIMILAR TO THE NEW USE FOR THIS PROJECT.
- C. **MATERIALS AND EQUIPMENT:** ALL MATERIALS AND EQUIPMENT SPECIFIED IN DIVISION 26 OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER AND SHALL BE NEW, OF THE BEST QUALITY AND DESIGN, AND FREE FROM DEFECTS

**SUPPORTING DEVICES:**

- A. ALL EQUIPMENT FURNISHED UNDER DIVISION 26 SHALL CARRY UL LABELS AND LISTINGS WHERE SUCH LABELS AND LISTINGS ARE AVAILABLE IN THE INDUSTRY.
- B. MANUFACTURERS OF EQUIPMENT SHALL HAVE A MINIMUM OF THREE YEARS EXPERIENCE WITH THEIR EQUIPMENT INSTALLED AND OPERATING IN THE FIELD IN A USE SIMILAR TO THE NEW USE FOR THIS PROJECT.
- C. **MATERIALS AND EQUIPMENT:** ALL MATERIALS AND EQUIPMENT SPECIFIED IN DIVISION 26 OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER AND SHALL BE NEW, OF THE BEST QUALITY AND DESIGN, AND FREE FROM DEFECTS

**SUPPORTING DEVICES:**

A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:

- 1. ALLIED TUBE AND CONDUIT
- 2. B-LINE SYSTEM
- 3. UNISTRUT DIVERSIFIED PRODUCTS
- 4. THOMAS & BETTS

B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:

- 1. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
- 2. POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
- 3. FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
- 4. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
- 5. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
- 6. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
- 7. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
- 8. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
- 9. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

**SUPPORTING DEVICES:**

- A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.
- B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.
- C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:
- D. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
- E. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

**ELECTRICAL IDENTIFICATION:**

- A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.
- B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

**SECTION 26 200 - ELECTRICAL MATERIALS AND EQUIPMENT**

**CONDUIT:**

- A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C90.1, FEDERAL SPECIFICATION WW-C-361 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED - SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.
- B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.
- C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.
- D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C90.3, FEDERAL SPECIFICATION WW-C-363, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.
- E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC CLAMP TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6 FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRED BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.
- F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

**HUBS AND BOXES:**

- A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.
- B. CABLE TERMINATION FITTINGS FOR CONDUIT
  - 1. CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRQ BY O-Z/GEHNEY OR EQUAL BY ROYTEC.
  - 2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO - CL2075, OR MADE FOR THE PURPOSE PRODUCTS BY ROYTEC.
- C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAS SERIES OR EQUAL.
- D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.
- E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE 'D', CROUSE-HINDS, COOPER, ADLLET, APLETON, O-Z GEHNEY, RACO, OR APPROVED EQUAL.

**SUPPLEMENTAL GROUNDING SYSTEM**

- A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM TO THE EXTENT INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS EXCEPT AS OTHERWISE NOTED.
- B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.
- C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

**EXISTING STRUCTURE:**

- A. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE-ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.

**CONDUIT AND CONDUCTOR INSTALLATION:**

- A. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES 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 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.
- B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.



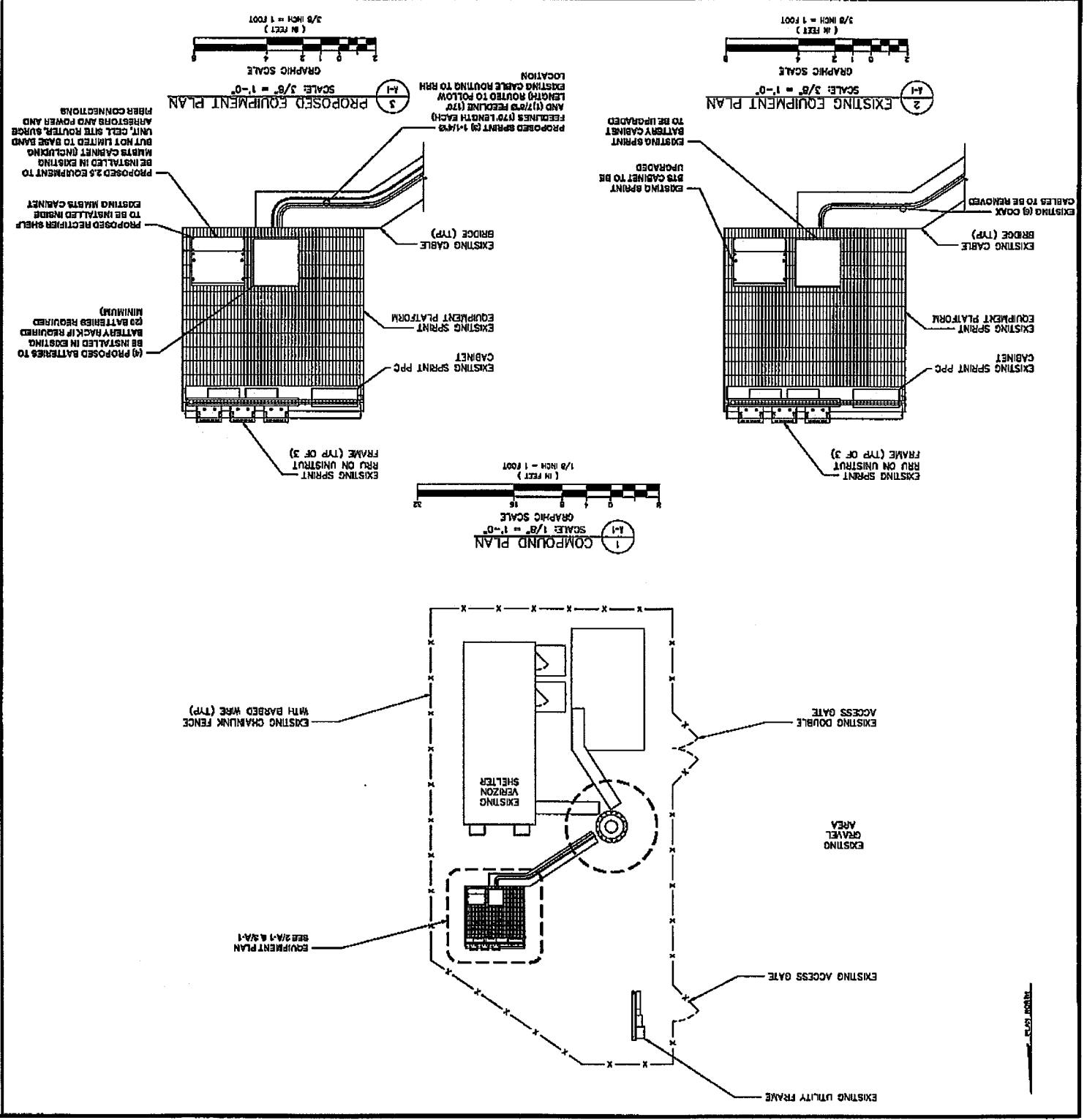
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REV.	DATE	REVISION DESCRIPTION
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**NY13/366 CAC  
 AL43XC750  
 1387 DRYDEN ROAD  
 ITHACA, NY 14850  
 TOMPKINS COUNTY**

**CONSTRUCTION SPECIFICATIONS**

DATE: 12/05/17	SCALE: AS NOTED
DRAWN BY: R.P.L.	SHEET #: SP-2
CHECKED BY: P.A.T.	
PROJECT #: 2436.1171	



**SITE NOTES**

- PROPERTY LINE INFORMATION WAS PREPARED USING CERDS, T&M MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSIDERED AS AN ACCURATE BOUNDARY SURVEY.
- THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
- THE HORIZONTAL DATUM (COORDINATES) ARE IN TERMS OF THE NORTH AMERICAN DATUM OF 1983 (NAD 83). THE VERTICAL DATUM (ELEVATIONS) ARE IN TERMS OF THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- NO NOISE, SHADOW, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THERE IS NO HANDICAP ACCESS REQUIRED.
- THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
- THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OR ANY TYPE.
- ANY SOLID WASTE RECEPTACLES.

**GENERAL NOTES**

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IN WRITING OF ANY CONFLICTS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID PROJECT IN ACCORDANCE WITH THE OVERALL INTENT OF THESE DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF THE CONSTRUCTION OF THIS FACILITY.
- THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
- CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
- TRANSMITTERS AND ANTENNAS ARE DESIGNED TO MEET ANS/MICHA 224 REQUIREMENTS.
- ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
- CONTRACTOR SHALL MAKE A UTILITY ONE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATION.
- IF ANY PILING EXISTS AT THE SITE AREA, CONTRACTOR MUST LOCATE IT AND CONTACT OWNERS REPRESENTATIVE.
- A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING COMMUNICATION STRUCTURE AND ITS COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT THE EQUIPMENT. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, THE OWNERS APPOINTED OR MODIFICATION OF THE EXISTING STRUCTURE, THE OWNERS AGENT SHALL FURNISH A CERTIFICATION LETTER SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

**STRUCTURAL NOTE:**  
A STRUCTURAL ANALYSIS OF THE EXISTING ANTENNAS AND CABLING. CONTRACTOR TO VERIFY CONDITIONS OF THE EXISTING STRUCTURE HAS DETERIORATED. SUPPORTING STRUCTURE HAS DETERIORATED AS PER THE ORIGINAL INSTALLATION OR THE MODIFICATIONS. IF THE CONDITIONS ARE NOT SATISFACTORY PRIOR TO INSTALLATION OF NEW ANTENNAS AND CABLING.

**CONTRACTOR TO VERIFY CONDITIONS OF THE EXISTING STRUCTURE HAS DETERIORATED. SUPPORTING STRUCTURE HAS DETERIORATED AS PER THE ORIGINAL INSTALLATION OR THE MODIFICATIONS. IF THE CONDITIONS ARE NOT SATISFACTORY PRIOR TO INSTALLATION OF NEW ANTENNAS AND CABLING.**

**COMPUND PLANS AND NOTES**

**TOMPKINS COUNTY**  
**THACA, NY 14850**  
**1387 DRYDEN ROAD**  
**AL43X0750**  
**NY13/366 CAC**

DATE: 12/05/17  
SCALE: AS NOTED  
DRAWN BY: M.F.A.  
CHECKED BY: P.L.T.  
PROJECT #: 234017M

**REVISIONS**

REV.	DATE	REVISION DESCRIPTION
1	12/05/17	ISSUED AS SHOWN
0	12/05/17	ISSUED FOR REVIEW

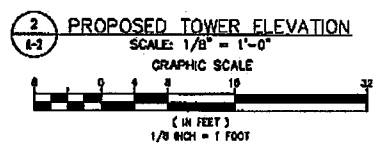
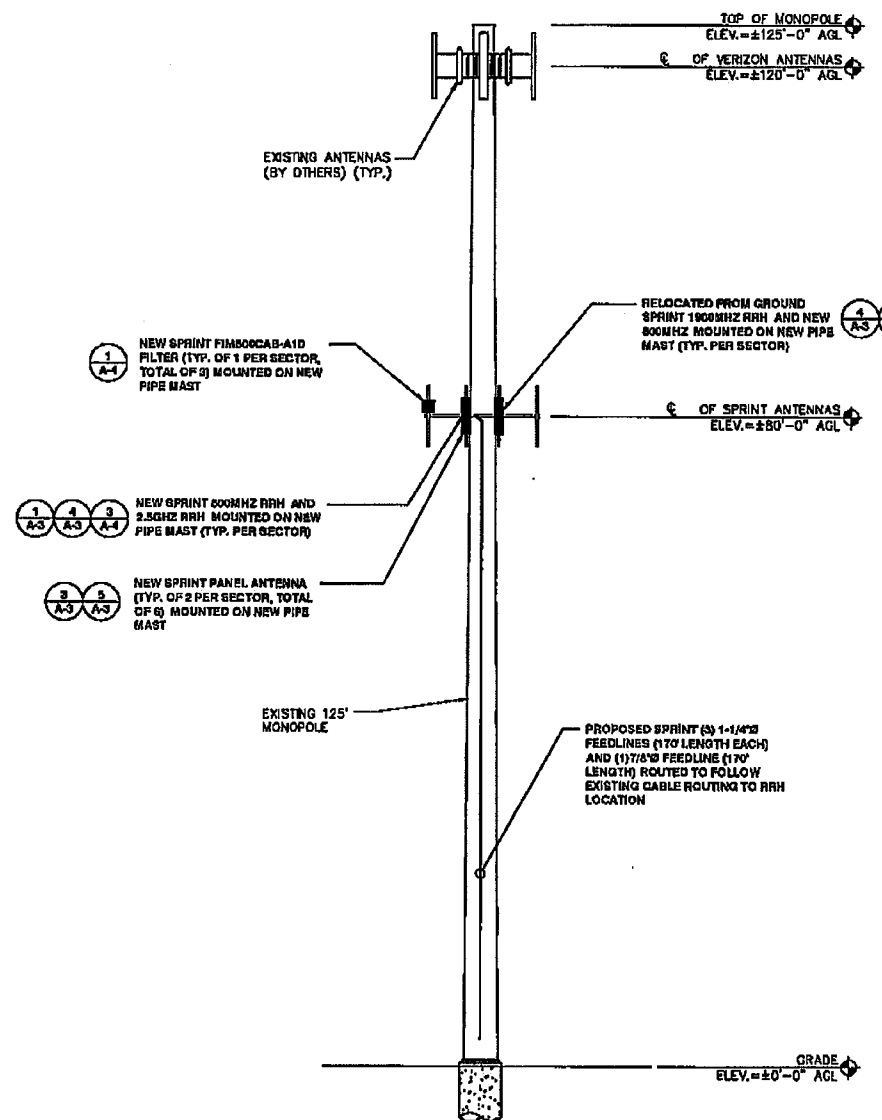
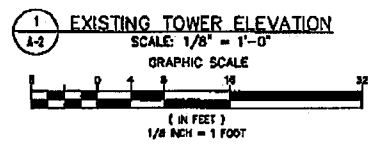
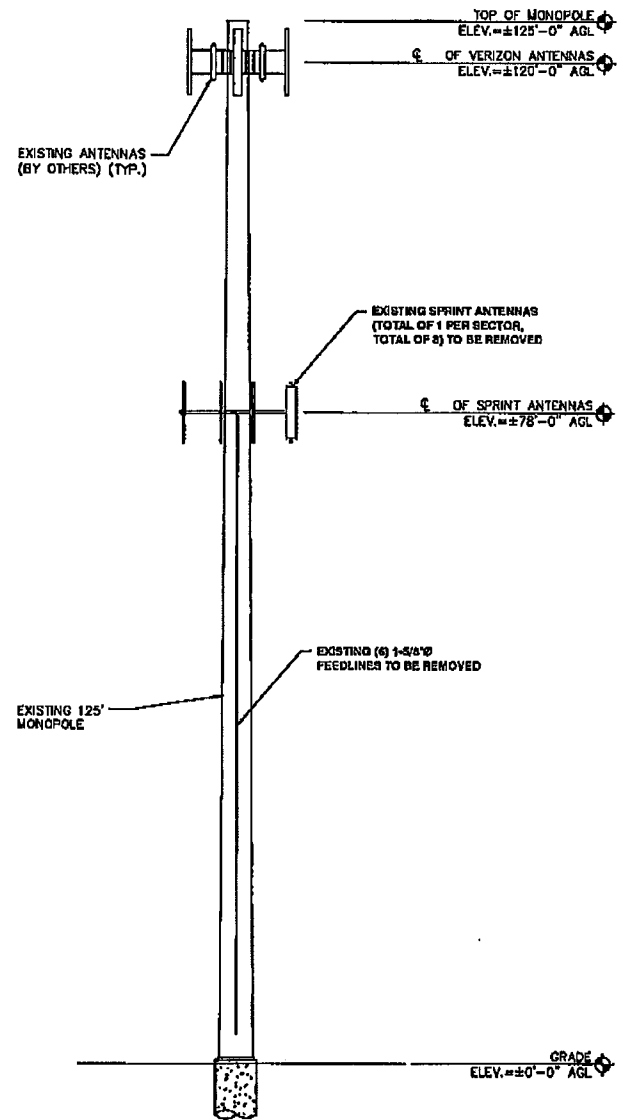
SEAL: STATE OF NEW YORK, PETER J. TARKO, LIC. ENGR. NO. 11573

**FRENCH & PARELLO**  
ASSOCIATES  
1000 NEW YORK STATE THRUWAY OFFICE BUILDING  
ALBANY, NY 12219

**OC CROWN CASTLE**  
5890 Spring Parkway  
Overland Park, KS 66201

**sprint**

A-1



STRUCTURAL NOTE:  
A STRUCTURAL ANALYSIS OF THE EXISTING TOWER SHALL BE PERFORMED TO CONFIRM ADEQUACY PRIOR TO INSTALLATION OF NEW ANTENNAS AND CABLING.

CONTRACTOR TO VERIFY CONDITIONS OF THE EXISTING WIRELESS INSTALLATION PRIOR TO MODIFICATIONS. IF THE CONDITIONS ARE NOT AS PER THE ORIGINAL INSTALLATION OR THE SUPPORTING STRUCTURE HAS DETERIORATED, THE ENGINEER MUST BE NOTIFIED IMMEDIATELY.

**Sprint**  
6580 Sprint Parkway  
Overland Park, KS 66251

**CROWN CASTLE**  
The Foundation for a Wireless World

**FPA**  
FRENCH & PARRELLO  
ASSOCIATES  
2800 Route 94, Suite 101, Valhalla, New York 10779  
or 732.212.2628 or 732.212.2629

SEAL:  
STATE OF NEW YORK  
PETER J. TARDY  
LICENSED PROFESSIONAL ENGINEER  
078612  
DATE: 12/05/17  
NEW YORK PROFESSIONAL ENGINEER, License No. 078612

REV.	DATE	REVISION DESCRIPTION
0	01/28/18	ISSUED FOR REVIEW
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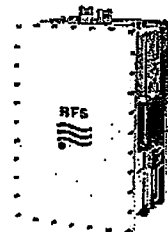
NY13/366 CAC  
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1387 DRYDEN ROAD  
ITHACA, NY 14850  
TOMPKINS COUNTY

ELEVATIONS

DATE: 12/05/17	SCALE: AS NOTED
DRAWN BY: R.P.A.	SHEET #: A-2
CHECKED BY: P.A.T.	
PROJECT #: 2436.1171	

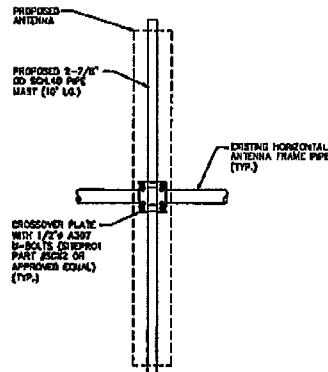


ANTENNA INFORMATION AND BILL OF MATERIALS							
ITEM	SECTOR	DESCRIPTION	QTY	DIMENSIONS	PART/MODEL#	AZIMUTH	RAD CENTER
1	ALPHA	2.5 GHz ANTENNA	1	56.3"x12.6"x6.3"	RFS/APXVTM14-AL-120	60°	80'-0"
2		2.5 GHz ANTENNA	1	82.6"x19.6"x8.5"	RFS/APXVBLL20X_43-C-120	60°	80'-0"
3		2.5 GHz RRH	1	25.4"x17.5"x5.7"	ALU RRH8x20-25	N/A	80'-0"
4		1900 MHz RRH	1	25.1"x11.0"x11.4"	ALU PCS 1900MHz 4X45W-65MHz	N/A	80'-0"
5		800 MHz RRH	2	15.7"x13.0"x9.8"	ALU RRH2X50-800	N/A	80'-0"
6		FILTER	1	15.2"x9.65"x8.5"	FIM8000CAB-A1D	N/A	80'-0"
7	BETA	2.5 GHz ANTENNA	1	56.3"x12.6"x6.3"	RFS/APXVTM14-AL-120	270°	80'-0"
8		2.5 GHz ANTENNA	1	82.6"x19.6"x8.5"	RFS/APXVBLL20X_43-C-120	270°	80'-0"
9		2.5 GHz RRH	1	25.4"x17.5"x5.7"	ALU RRH8x20-25	N/A	80'-0"
10		1900 MHz RRH	1	25.1"x11.0"x11.4"	ALU PCS 1900MHz 4X45W-65MHz	N/A	80'-0"
11		800 MHz RRH	2	15.7"x13.0"x9.8"	ALU RRH2X50-800	N/A	80'-0"
12		FILTER	1	15.2"x9.65"x8.5"	FIM8000CAB-A1D	N/A	80'-0"
13	GAMMA	2.5 GHz ANTENNA	1	56.3"x12.6"x6.3"	RFS/APXVTM14-AL-120	350°	80'-0"
14		2.5 GHz ANTENNA	1	82.6"x19.6"x8.5"	RFS/APXVBLL20X_43-C-120	350°	80'-0"
15		2.5 GHz RRH	1	25.4"x17.5"x5.7"	ALU RRH8x20-25	N/A	80'-0"
16		1900 MHz RRH	1	25.1"x11.0"x11.4"	ALU PCS 1900MHz 4X45W-65MHz	N/A	80'-0"
17		800 MHz RRH	2	15.7"x13.0"x9.8"	ALU RRH2X50-800	N/A	80'-0"
18		FILTER	1	15.2"x9.65"x8.5"	FIM8000CAB-A1D	N/A	80'-0"
19		FEEDLINE	3	130' (EACH)(1-1/4"Ø)	HB114-1-08U4-M5F	N/A	N/A
20		FEEDLINE	1	130' (7/8"Ø)	HB114-21U3M12-XXCF	N/A	N/A

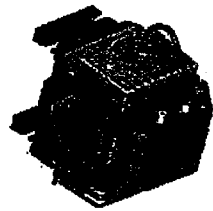


NOTES:  
WEIGHT: 23.0 LBS  
DIMENSIONS: HxWxD 15.2"x9.65"x8.21"

1 FILTER DETAIL  
A-4  
NOT TO SCALE



2 ANTENNA MOUNT  
A-3  
SCALE: N.T.S.



NOTES:  
TX CONFIG: 2x50  
WEIGHT: 60 LBS  
VOLUME: 49 LITERS  
DIMENSIONS: HxWxD 18.4"x12.8"x10.7"

3 800 MHz 2x50W RRH DETAIL  
A-3  
NOT TO SCALE



NOTES:  
TX CONFIG: 4x45  
WEIGHT: 44.09 LBS  
VOLUME: 49 LITERS  
DIMENSIONS: HxWxD 21.65"x12.89"x8.89"

4 1900 MHz 4x45W-65 RRH  
A-3  
NOT TO SCALE

Sprint

6500 Sprint Parkway  
Overland Park, KS 66261

CROWN CASTLE  
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1900 Route 24E, Suite 201 • Wall, New Jersey 07719  
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SEAL:



PETER J. WARDY, P.E.  
NEW YORK PROFESSIONAL ENGINEER  
LIC. NO. 071612

REVISIONS		
REV.	DATE	REVISION DESCRIPTION
1	02/03/16	ISSUED FOR REVIEW
2	04/03/16	ISSUED AS FINAL

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AL43XC750  
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ITHACA, NY 14850  
TOMPKINS COUNTY

CABINET DETAILS AND  
ANTENNA SCHEDULE

DATE: 12/05/17	SCALE: AS NOTED
DRAWN BY: R.P.A.	SHEET #: A-4
CHECKED BY: P.J.T.	
PROJECT #: 2438.1171	

**Sprint**  
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Overland Park, KS 66207

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Professional Engineers & Surveyors  
1100 North 11th Street, Suite 200  
Overland Park, KS 66202

**SEAL:**

**PETER J. HARDY, JR.**  
Professional Engineer  
No. 100-0018

REV.	DATE	REVISION DESCRIPTION
1	04/24/12	Issue for RFP
2	02/27/12	Issue for Review

REVISIONS

PETER J. HARDY, JR.  
Professional Engineer  
No. 100-0018

STATE OF NEW YORK  
PETER J. HARDY, JR.  
Professional Engineer  
No. 076612

REVISIONS

REV.	DATE	REVISION DESCRIPTION
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REVISIONS

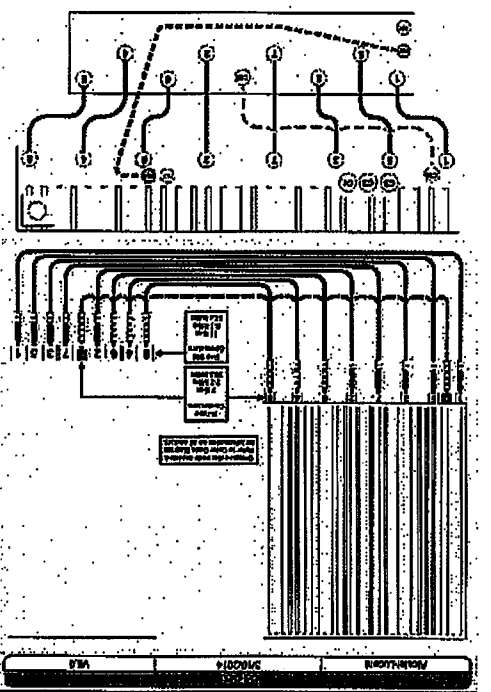
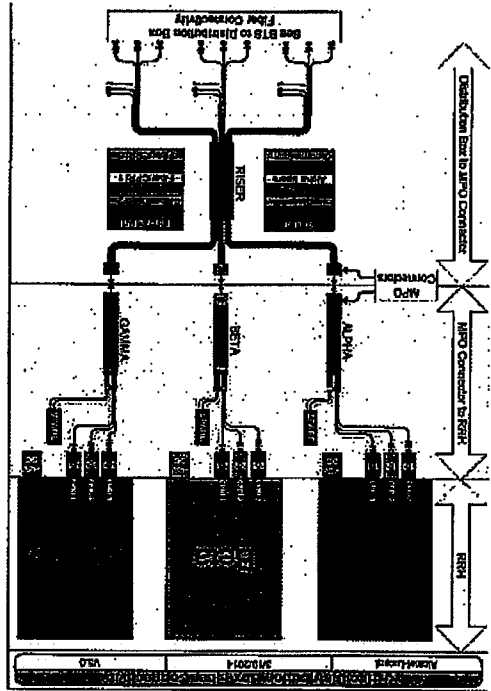
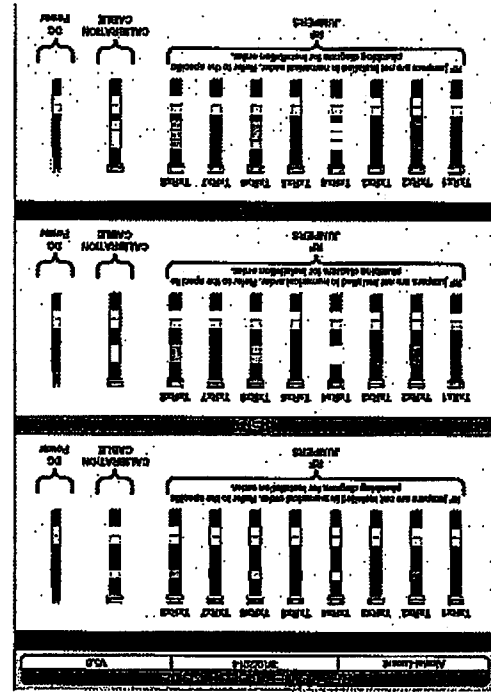
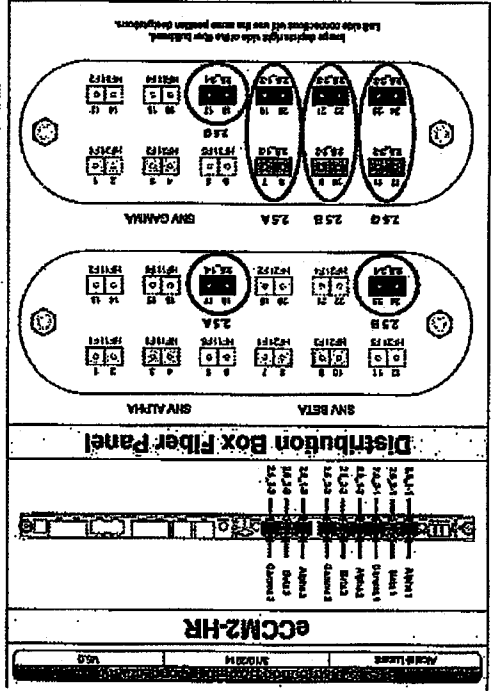
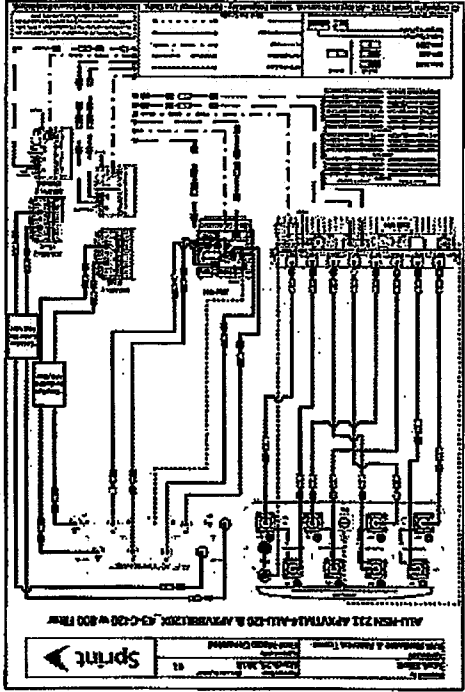
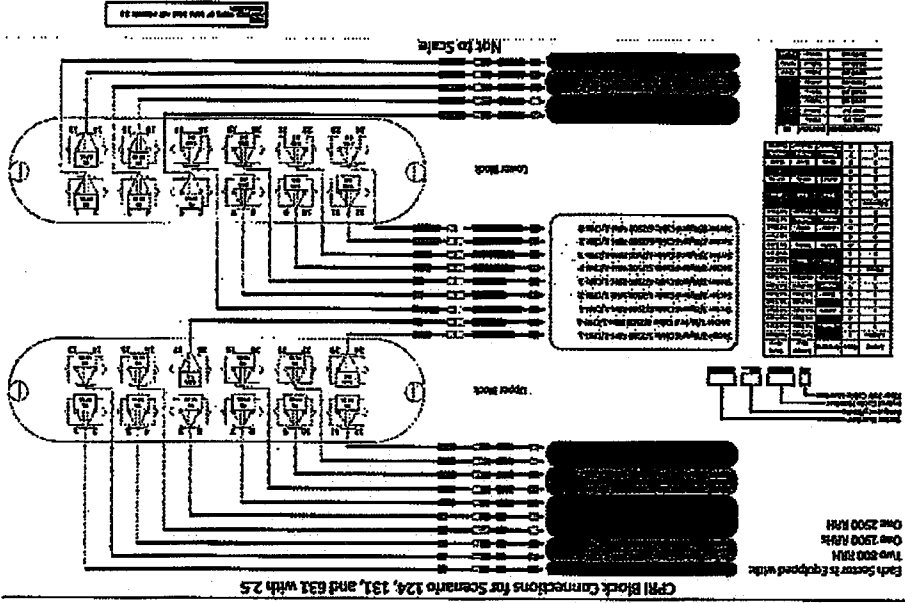
DATE: 12/15/17  
SCALE: AS NOTED  
SHEET # 1  
PROJECT # 248317M

DRAWN BY: RJA  
CHECKED BY: MVT  
PROJECT # 248317M

A-5

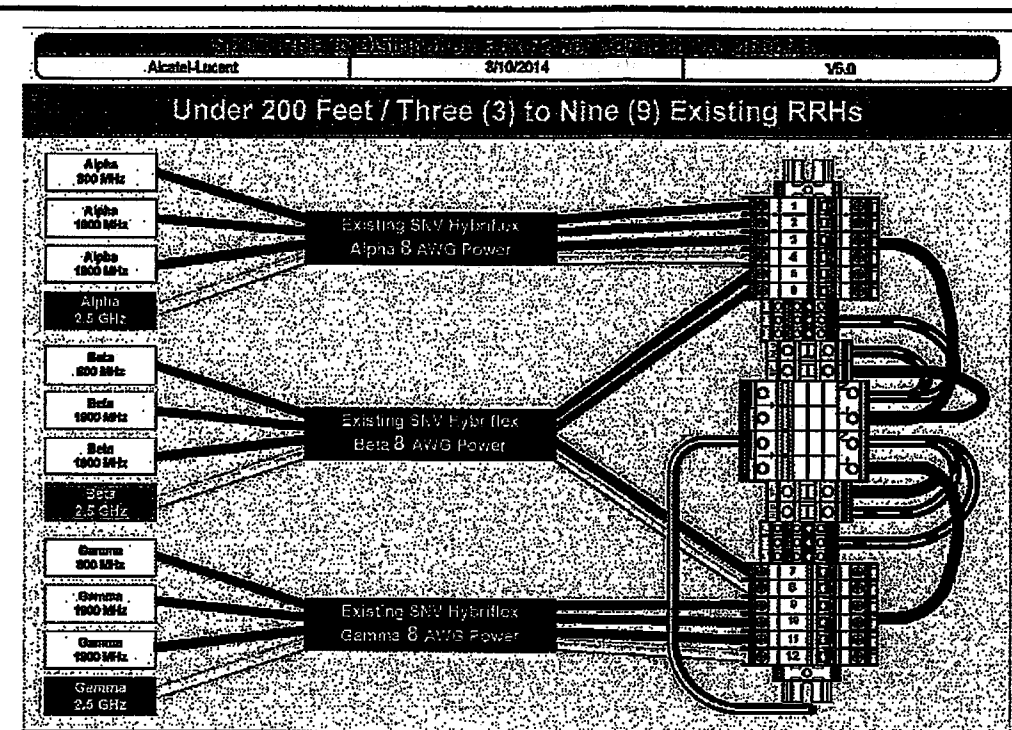
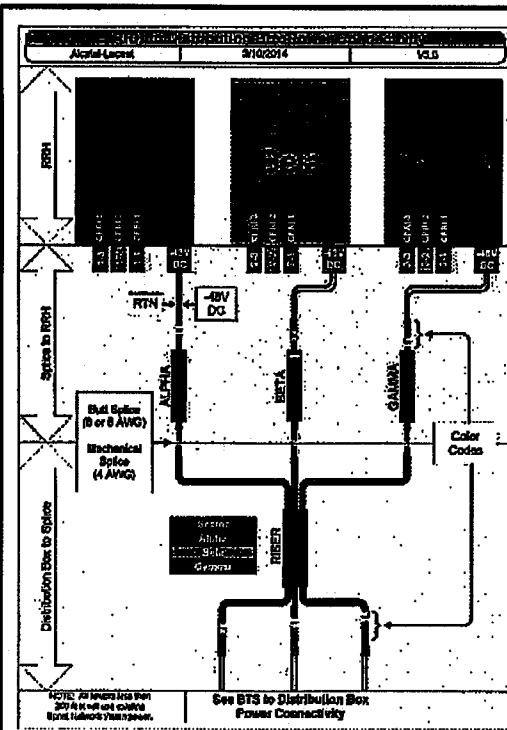
**ANTENNA PLUMBING**  
TOMPKINS COUNTY  
1887 HYDEN ROAD  
AL43XC750  
NY13/366 CAC

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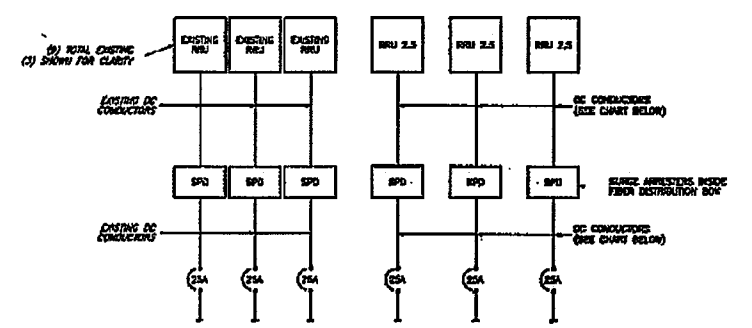
NOTES: TERMINATE ALL USED/UNUSED FIBER PAIRS ON THE LC DUPLEX ADAPTER PLATES





- NOTE:**
1. CIRCUIT BREAKERS WITHIN THE SPRINT FIBER DISTRIBUTION BOX ARE 25 AMP.
  2. DC SERVICE LOOP SHALL BE UTILIZED.
  3. ALL UNUSED DC FEEDERS TO BE TERMINATED WITH WIRE NUTS AND TAPED.
  4. WHEN COMPLETE, REMOVE ALL DEBRIS FROM INTERIOR OF DISTRIBUTION BOX.

**1 DC POWER CONNECTIVITY**  
E-1 NOT TO SCALE



**DC CONDUCTOR SIZE CHART**

CABLE RUN < 300'	8 AWG POWER
CABLE RUN 300' TO 325'	6 AWG POWER
CABLE RUN > 325'	4 AWG POWER

**2 DC ONE-LINE DIAGRAM**  
E-1 NOT TO SCALE

**Sprint**  
6500 Sprint Parkway  
Overland Park, KS 66251

**CROWN CASTLE**  
The Foundation for a Successful World

**FPA**  
FRENCH & PARRELLO  
ASSOCIATES  
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or 700 Montross St • Washington, DC 20001

SEAL:  
STATE OF NEW YORK  
PETER J. TARDY  
LICENSED PROFESSIONAL ENGINEER  
077617  
NEW YORK PROFESSIONAL ENGINEER  
E.C. NO. 074613

REV.	DATE	REVISION DESCRIPTION
0	02/05/17	ISSUED FOR REVIEW
1	02/08/18	ISSUED AS FINAL

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TOMPKINS COUNTY**

**ELECTRICAL ONE-LINE  
DIAGRAM AND DETAILS**

DATE: 02/05/17	SCALE: AS NOTED
DRAWN BY: R.P.A.	SHEET #: E-1
CHECKED BY: P.A.T.	
PROJECT # 24381171	

