Memorandum
Planning & Development Services Division

To: **Planning and Public Works Committee**

From: Jonathan Raiche, Senior Planner

Date: June 18, 2015

RE: **T.S.P. 50-2015 Sprint (16090 Swingley Ridge Rd):** A request to obtain approval for a Telecommunications Siting Permit to accommodate six (6) new antennas and additional related equipment for an existing building-mounted telecommunication site within the "C8" Planned Commercial District of land located at the southeast corner of the intersection of Swingley Ridge Road and Olive Boulevard.

Summary

Russell Been of Cellective Solutions, LLC on behalf of Sprint (applicant) has submitted a request for a Telecommunications Siting Permit (TSP) for the above referenced property. The proposed TSP is to accommodate six (6) additional antennas to an existing building-mounted telecommunication site located on the building at 16090 Swingley Ridge Road. The first rooftop antennas at this location were approved in 1995 through administrative procedure prior to the adoption of the City's current Telecommunication requirements. Since there will be an addition of antennas beyond the current amount, the site must receive a Telecommunications Siting Permit (TSP) as required by current code. Aerial and site photos are embedded below showing the existing conditions of the site.

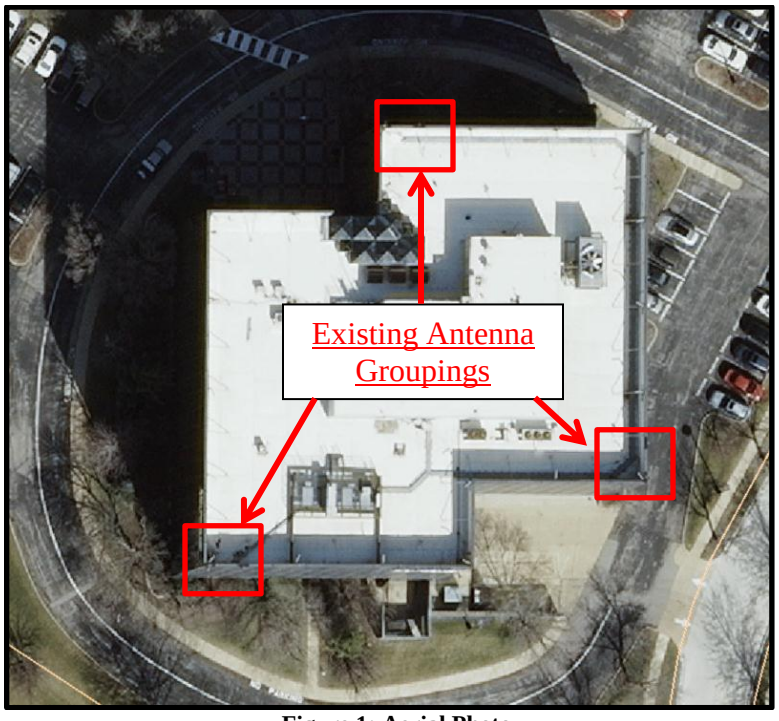


Figure 1: Aerial Photo

Figure 2. Site Photo – North and East Facades

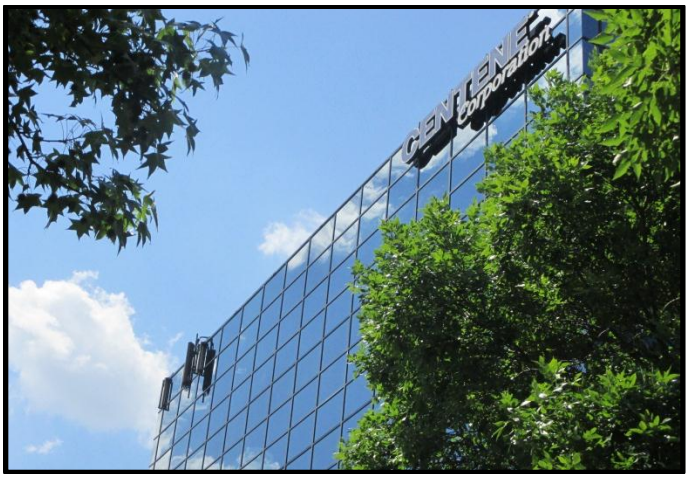


Figure 3. Site Photo – South Facade

Discussion

The Unified Development Code (UDC) requires that any new equipment or updates to an existing telecommunication facility receive a TSP or amend the existing TSP. Since the equipment was constructed prior to current ordinance, no TSP has ever been applied for nor issued for this site and is therefore considered a legal non-conforming use or also known as a grandfathered use. The site is currently compliant with the previous approval and the City has not received any complaints on the facility.

The UDC permits applications for equipment upgrades to be submitted for sites that do not currently hold a Telecommunications Siting Permit (TSP) without the need for a public hearing if the update does not reflect a Material Modification. A Material Modification is defined by the UDC as an important, essential or significant change to an existing wireless telecommunication facility. Material modifications do not include collocations which do not increase the height or increase the existing antenna array. In this application, six (6) new antennas with related equipment are requested which will collocate on the existing building and will not increase the height of the structure. The intent of the definition of Material Modification is to ensure that a facility which exceeds the previous City approval by a substantial height increase or major visual change would require City review via a public hearing. Staff has reviewed the request by Sprint against the UDC and has determined that the proposal is not a Material Modification and therefore may receive a TSP without a public hearing. Staff recommends approval of a TSP for Sprint as proposed.

After receiving a recommendation from the Planning and Public Works Committee, this request may be forwarded to the City Council for review. Attached please find a copy of the construction plans.

Respectfully submitted,

Jonathan D. Raiche, AICP
Senior Planner

cc. Aimee Nassif, Planning and Development Services Director

Sprint

PROJECT: 2.5 EQUIPMENT DEPLOYMENT

SITE NAME: ROOSEVELT BUILDING

SITE CASCADE: ST03XC017

SITE ADDRESS: 16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SITE TYPE: 75'-0" BUILDING

2.5MHz 75'-0" BUILDING

RECEIVED
City of Chesterfield
Jun 08 2015
Department of Public Services

SITE INFORMATION

PROPERTY OWNER:
CHESTERFIELD NORTHEAST INC A MO CORP

LATITUDE (NAD83):
38° 39' 11" N
38.653056°

LONGITUDE (NAD83):
90° 33' 21" W
-90.555833°

COUNTY:
ST. LOUIS

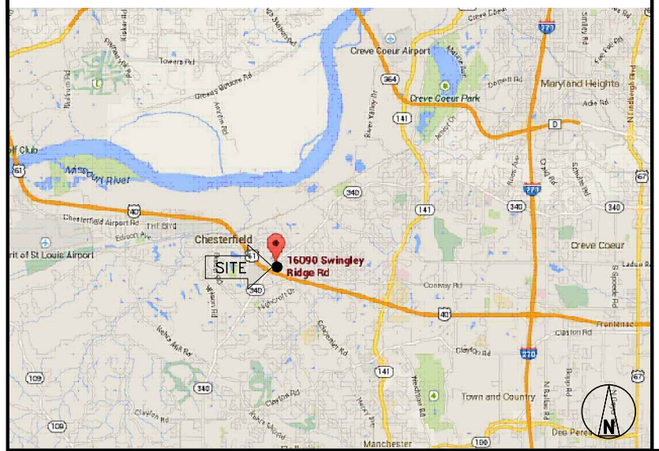
ZONING JURISDICTION:
CHESTERFIELD, MO

ZONING DISTRICT:
C8 - PLANNED COMMERCIAL DISTRICT

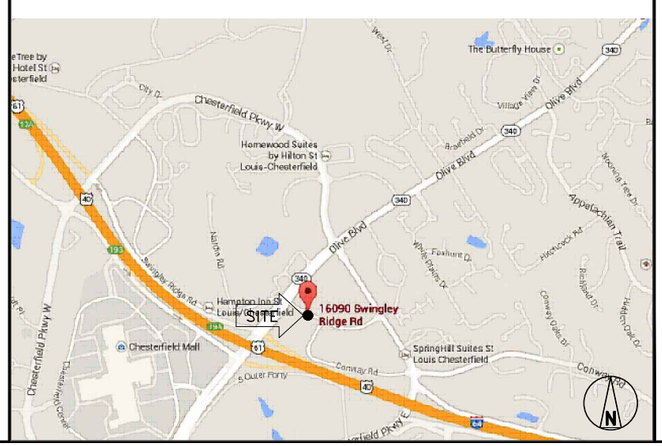
POWER COMPANY:
AMEREN UE

AAV PROVIDER:
AT&T

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

- INSTALLATION OF (3) NEW RFS - APXVSPP18-C-A20 - HIGH CAPACITY ANTENNAS
- INSTALLATION OF (3) NEW SPRINT COMMSCOPE - TTT64AP-1XR 2.5 MHZ ANTENNAS
- INSTALLATION OF (3) NEW FLEXI RF REMOTE UNIT (RRU) OUTDOOR - FZHJ
- INSTALLATION OF (3) NEW RRUs31
- INSTALLATION OF (3) 1900 MHz RRUs31 TO REPLACE (6) EXISTING 1900MHz RRUs11
- INSTALLATION OF (1) NEW RF FILTER AT SECTORS 1 & 3
- INSTALLATION OF (14) JUMPER CABLES AT ANTENNAS

APPLICABLE CODES

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.

1. 2009 INTERNATIONAL BUILDING CODE
2. 2009 INTERNATIONAL MECHANICAL CODE
3. 2009 INTERNATIONAL ENERGY CONSERVATION CODE
4. 2011 NATIONAL ELECTRIC CODE
5. 2009 UNIFORM PLUMBING CODE

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DRAWING INDEX

SHEET NO:	SHEET TITLE	REV	ENGINEER
T-1	TITLE SHEET & PROJECT DATA	2	X
SP-1	OUTLINE SPECIFICATIONS	2	X
SP-2	OUTLINE SPECIFICATIONS	2	X
A-1	ROOF PLAN	2	X
A-2	EQUIPMENT PLAN	2	X
A-3	TOWER ELEVATION & CABLE PLAN	2	X
A-4	ANTENNA LAYOUT & MOUNTING DETAILS	2	X
A-5	RF DATA SHEET EQUIPMENT INFORMATION	2	X
A-6	RF DATA SHEET	2	X
A-7	RF DATA SHEET	2	X
A-8	EQUIPMENT DETAILS	2	X
E-1	GROUNDING & ELECTRICAL PLAN	2	X
E-2	GROUNDING DETAILS	2	X
E-3	DC POWER & DISTRIBUTION	2	X

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
GLS Gateway Land Services Engineering Surveying
Gateway Land Services, Inc.
4 West Drive, Suite 110
Chesterfield, MO 63017
314.881.9556
f-636.530.9825
www.glsstl.com

OEM:

ENGINEERING LICENSE:
STATE OF MISSOURI
MICHAEL A BUESCHER
NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15
Michael A. Buescher, P.E. Civil Engineering
Missouri P.E. E-2001018714
Gateway Land Services, Inc. Missouri Authority No. E-2007027544

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REVISIONS:

DESCRIPTION	DATE	BY	REV
2.5 REVIEW	05-21-14	MB	0
RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-26-15	MB	3

SITE NAME: ROOSEVELT BUILDING

SITE CASCADE: ST03XC017

SITE ADDRESS: 16090 SWINGLEY RIDGE ROAD CHESTERFIELD, MO 63017

SHEET DESCRIPTION: TITLE SHEET

SHEET NUMBER: T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

THE WORK:
SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF.

PRECEDENCE:
SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE.

SITE FAMILIARITY:
CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

ON-SITE SUPERVISION:
THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE:
THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.

B. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.

C. MARK THE FIELD SET OF DRAWINGS IN RED, DOCUMENTING ANY CHANGES FROM THE CONSTRUCTION DOCUMENTS.

METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION:
CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

A. TOP HAT
B. HOW TO INSTALL A NEW CABINET
C. BASE BAND UNIT IN EXISTING UNIT
D. INSTALLATION OF BATTERIES
E. INSTALLATION OF HYBRID CABLE
F. INSTALLATION OF RRU'S
G. CABLING
H. TS-0200 REV 4 - ANTENNA LINE ACCEPTANCE STANDARDS
I. SPRINT CELL SITE ENGINEERING NOTICE - EN 2012-001, REV 1.
J. COMMISSIONING MOPS

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DRAWINGS.

CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT TO ENSURE IT IS PROTECTED AND HANDLED PROPERLY THROUGHOUT THE CONSTRUCTION DURATION.

CONTRACTOR RESPONSIBLE FOR RECEIPT OF SPRINT FURNISHED EQUIPMENT AT CELL SITE OR CONTRACTORS LOCATION. CONTRACTOR TO COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

SECTION 01 300 – CELL SITE CONSTRUCTION

NOTICE TO PROCEED:
NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF WORK ORDER.

SITE CLEANLINESS:
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, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

SECTION 01 400 – SUBMITTALS & TESTS

ALTERNATES:
AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINTS CONSTRUCTION MANAGER FOR APPROVAL. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED.

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 TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT PROVIDE AN AUTOMATED REPORT UPLOADED TO SITERRA USING A COMMERCIAL MADE-FOR THE PURPOSE ELECTRONIC ANTENNA ALIGNMENT TOOL (AAT). INSTALLED AZIMUTH, CENTERLINE AND DOWNTILT MUST CONFORM WITH RF CONFIGURATION DATA
3. CONTRACTOR 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 MOPS.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL FROM SUNSIGHT INSTRUMENTS - ANTENNALIGN ALIGNMENT TOOL (AAT)
2. SWEEP AND FIBER TESTS
3. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
4. ALL AVAILABLE JURISDICTIONAL INFORMATION
5. PDF SCAN OF REDLINES PRODUCED IN FIELD
6. A PDF SCAN OF REDLINE MARK-UPS SUITABLE FOR USE IN ELECTRONIC AS-BUILT DRAWING PRODUCTION
7. LIEN WAIVERS
8. FINAL PAYMENT APPLICATION
9. REQUIRED FINAL CONSTRUCTION PHOTOS
10. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
11. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).
12. CLOSEOUT PHOTOGRAPHS AND CLOSEOUT CHECKLIST: SPRINT WILL PROVIDE SEPARATE GUIDANCE

SECTION 07 500 – ROOF CUTTING, PATCHING AND REPAIR

SUMMARY:
THIS SECTION SPECIFIES CUTTING AND PATCHING EXISTING ROOFING SYSTEMS WHERE CONDUIT OR CABLES EXIT THE BUILDING ONTO THE ROOF OR BUILDING-MOUNTED ANTENNAS, AND AS REQUIRED FOR WATERTIGHT PERFORMANCE. ROOFTOP ENTRY OPENINGS IN MEMBRANE ROOFTOPS SHALL BE CONSTRUCTED TO COMPLY WITH LANDLORD, ANY EXISTING WARRANTY, AND LOCAL JURISDICTIONAL STANDARDS.

1.4 SUBMITTALS:

A. PRE-CONSTRUCTION ROOF PHOTOS: COMPLETE A ROOF INSPECTION PRIOR TO THE INSTALLATION OF SPRINT EQUIPMENT ON ANY ROOFTOP BUILD. AT A MINIMUM INSPECT AND PHOTOGRAPH
(MINIMUM 3 EA.) ALL AREAS IMPACTED BY THE ADDITION OF THE SPRINT EQUIPMENT.

B. PROVIDE SIMILAR PHOTOGRAPHS SHOWING ROOF CONDITIONS AFTER CONSTRUCTION (MINIMUM 3 EA.)

C. ROOF INSPECTION PHOTOGRAPHS SHOULD BE UPLOADED WITH CLOSEOUT PHOTOGRAPHS.

SECTION 09 900 – PAINTING

QUALITY ASSURANCE:

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR VOLATILE ORGANIC COMPOUNDS.

MATERIALS:

A. MANUFACTURERS: BENJAMIN MOORE, ICI DEVOE COATINGS, PPG, SHERWIN WILLIAMS OR APPROVED EQUAL. PROVIDE PREMIUM GRADE, PROFESSIONAL-QUALITY PRODUCTS FOR COATING SYSTEMS.

PAINT SCHEDULE:

A. EXTERIOR ANTENNAE AND ANTENNA MOUNTING HARDWARE: ONE COAT OF PRIMER AND TWO FINISH COATS. PAINT FOR ANTENNAE SHALL BE NON-METALLIC BASED AND CONTAIN NO METALLIC PARTICLES. PROVIDE COLORS AND PATTERNS AS REQUIRED TO MASK APPEARANCE OF ANTENNAE ON ADJACENT BUILDING SURFACES AND AS ACCEPTABLE TO THE OWNER. REFER TO ANTENNA MANUFACTURER'S INSTRUCTIONS WHENEVER POSSIBLE.

B. ROOF TOP CONSTRUCTION: TOUCH UP - PREPARE SURFACES TO BE REPAIRED. FOLLOW INDUSTRY STANDARDS AND REQUIREMENTS OF OWNER TO MATCH EXISTING COATING AND FINISH.

PAINTING APPLICATION:

1. INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.
2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.
3. MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION.
4. CLEAN UP, TOUCH UP AND PROTECT WORK.

TOUCHUP PAINTING:

1. GALVANIZING DAMAGE AND ALL BOLTS AND NUTS SHALL BE TOUCHED UP AFTER TOWER ERECTION WITH "GALVANOX," "DRY GALV," OR "ZINC-IT."
2. FIELD TOUCHUP PAINT SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ALL METAL COMPONENTS SHALL BE HANDLED WITH CARE TO PREVENT DAMAGE TO THE COMPONENTS, THEIR PRESERVATIVE TREATMENT, OR THEIR PROTECTIVE COATINGS.

SECTION 11 700 – ANTENNA ASSEMBLY, REMOTE RADIO UNITS AND CABLE INSTALLATION

SUMMARY:
THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRU'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE.

ANTENNAS AND RRU'S:
THE NUMBER AND TYPE OF ANTENNAS AND RRU'S TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.

HYBRID CABLE:
HYBRID CABLE WILL BE DC/FIBER AND FURNISHED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

JUMPERS AND CONNECTORS:
FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRU'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12-50, CR 540, OR FXL 540. SUPER-FLEX CABLES ARE NOT ACCEPTABLE. JUMPERS BETWEEN THE RRU'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. DO NOT USE SUPERFLEX OUTDOORS. JUMPERS SHALL BE FACTORY FABRICATED IN APPROPRIATE LENGTHS WITH A MAXIMUM OF 4 FEET EXCESS PER JUMPER AND HAVE CONNECTORS AT EACH END, MANUFACTURED BY SUPPLIER. IF JUMPERS ARE FIELD FABRICATED, FOLLOW MANUFACTURER'S REQUIREMENTS FOR INSTALLATION OF CONNECTORS

REMOTE ELECTRICAL TILT (RET) CABLES:

MISCELLANEOUS:
INSTALL SPLITTERS, COMBINERS, FILTERS PER RF DATA SHEET, FURNISHED BY SPRINT.

ANTENNA INSTALLATION:
THE CONTRACTOR SHALL ASSEMBLE ALL ANTENNAS ONSITE IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED BY THE MANUFACTURER. ANTENNA HEIGHT, AZIMUTH, AND FEED ORIENTATION INFORMATION SHALL BE A DESIGNATED ON THE CONSTRUCTION DRAWINGS.

CONTINUE SHEET SP-2

2.5MHz 75'-0" BUILDING

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
GLS Gateway Land Services Engineering Surveying
Gateway Land Services, Inc.
4 West Drive, Suite 110
Chesterfield, MO 63017
314.881.9556
f-636.530.9825
www.glsstl.com

OEM:

ENGINEERING LICENSE:
STATE OF MISSOURI
MICHAEL A BUESCHER
NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15
Michael A. Buescher, P.E. Civil Engineering
Missouri P.E. E-2001018714
Gateway Land Services, Inc. Missouri Authority No. E-2007027544

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HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:
ROOSEVELT BUILDING

SITE CASCADE:
ST03XC017

SITE ADDRESS:
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-1

A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.

B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADII.

C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.

1. FASTENING MAIN HYBRID CABLES: ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.
2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
   a. FIBER: SUPPORT FIBER BUNDLES USING ½" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.
   b. DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.
3. FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.
4. CABLE INSTALLATION:
   a. INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.
   b. CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.
   c. HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.
5. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
6. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED IN TS 0200 REV 4.
7. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE 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. WEATHERPROOFED 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 CXS 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 716: SUBSTITUTIONS WILL NOT BE ALLOWED.
4. OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE

SECTION 11 800 – 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 REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

A. LABEL CIRCUIT BREAKERS ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE - EN 2012-001, REV 1.

SECTION 11 800 – 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 REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

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. SUNISTRUT 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 C80.1, FEDERAL SPECIFICATION WW-C-581 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 C80.3, FEDERAL SPECIFICATION WW-C-563, 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 GLAND 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 REQUIRE 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 CRC BY O-Z/GEDNEY OR EQUAL.
2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO - CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.

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 WAB 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, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS 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 AS INDICATED.

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.

2.5MHz 75'-0" BUILDING

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

GLS Gateway Land Services Engineering Surveying
Gateway Land Services, Inc.
4 West Drive, Suite 110
Chesterfield, MO 63017
314.881.9556
f-636.530.9825
www.glsstl.com

OEM:

ENGINEERING LICENSE:

STATE OF MISSOURI
MICHAEL A BUESCHER
NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15

Michael A. Buescher, P.E. Civil Engineering
Missouri P.E. E-2001018714
Gateway Land Services, Inc. Missouri Authority No. E-2007027544

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REVISIONS:

DESCRIPTION	DATE	BY	REV
2.5 REVIEW	05-21-14	MB	0
RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

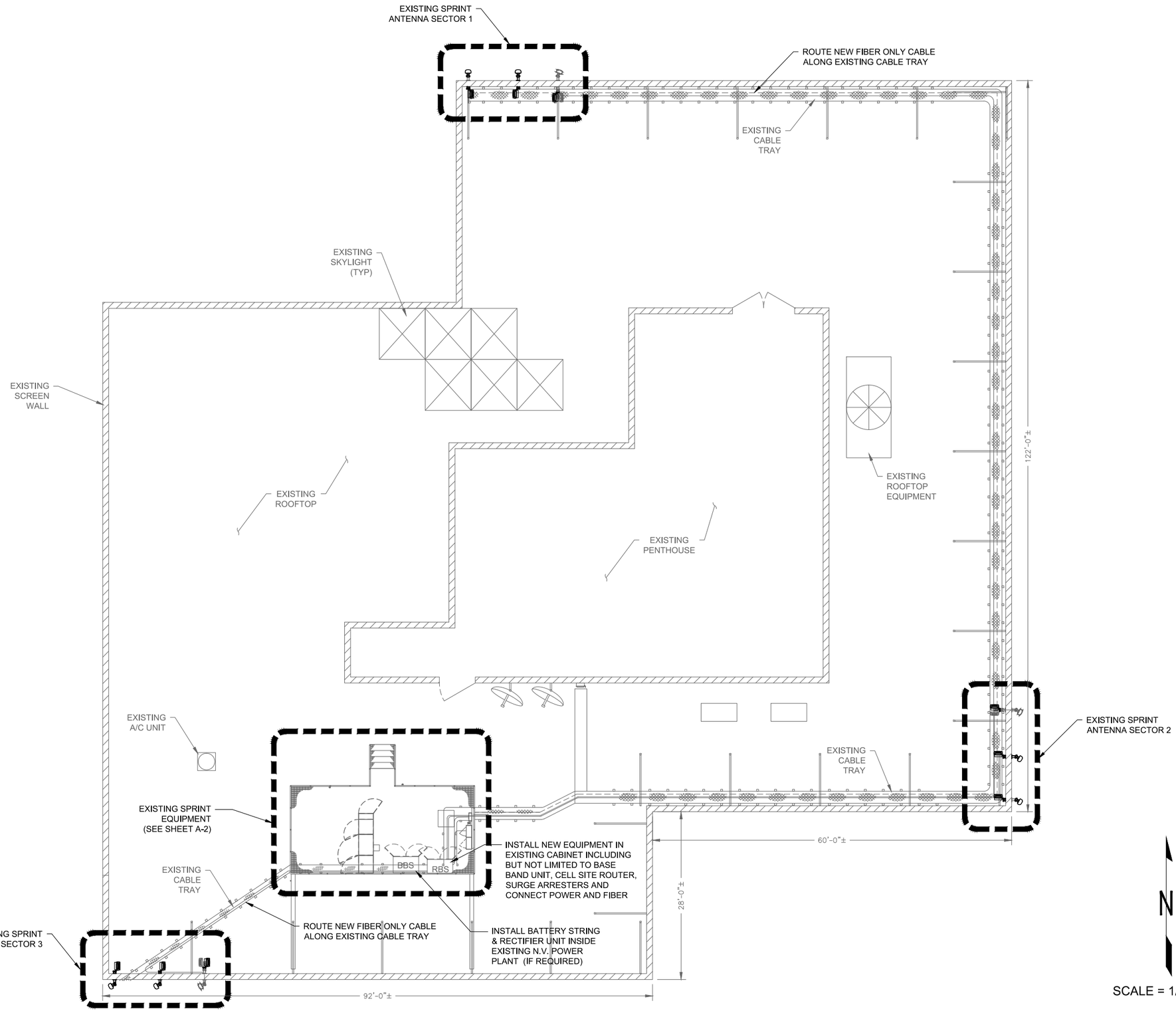
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2



SCALE = 1/8"=1'-0"

2.5MHz 75'-0" BUILDING

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Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

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RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

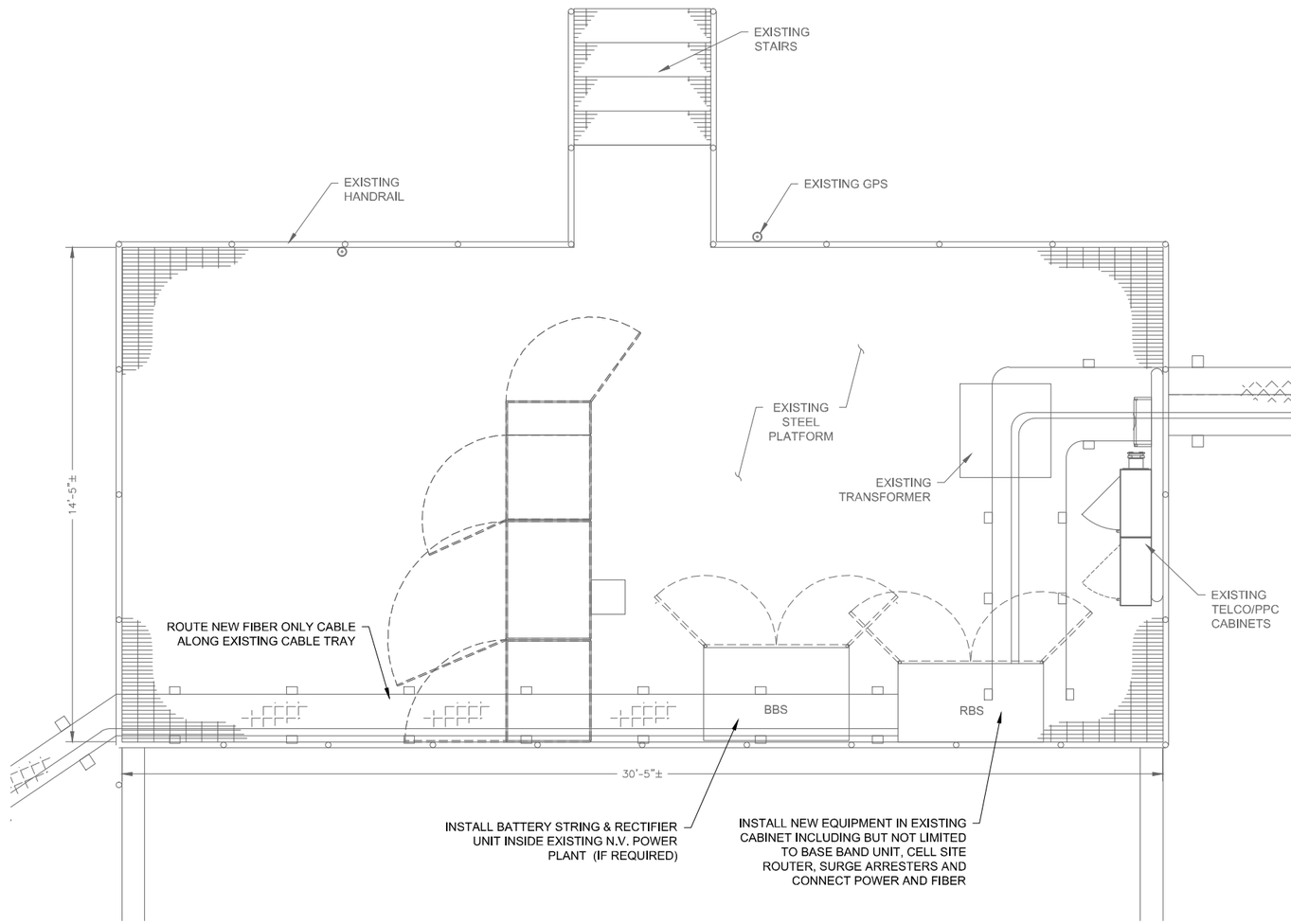
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

ROOF PLAN

SHEET NUMBER:

A-1



N

SCALE = 1/2"=1'-0"

2.5MHz 75'-0" BUILDING

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

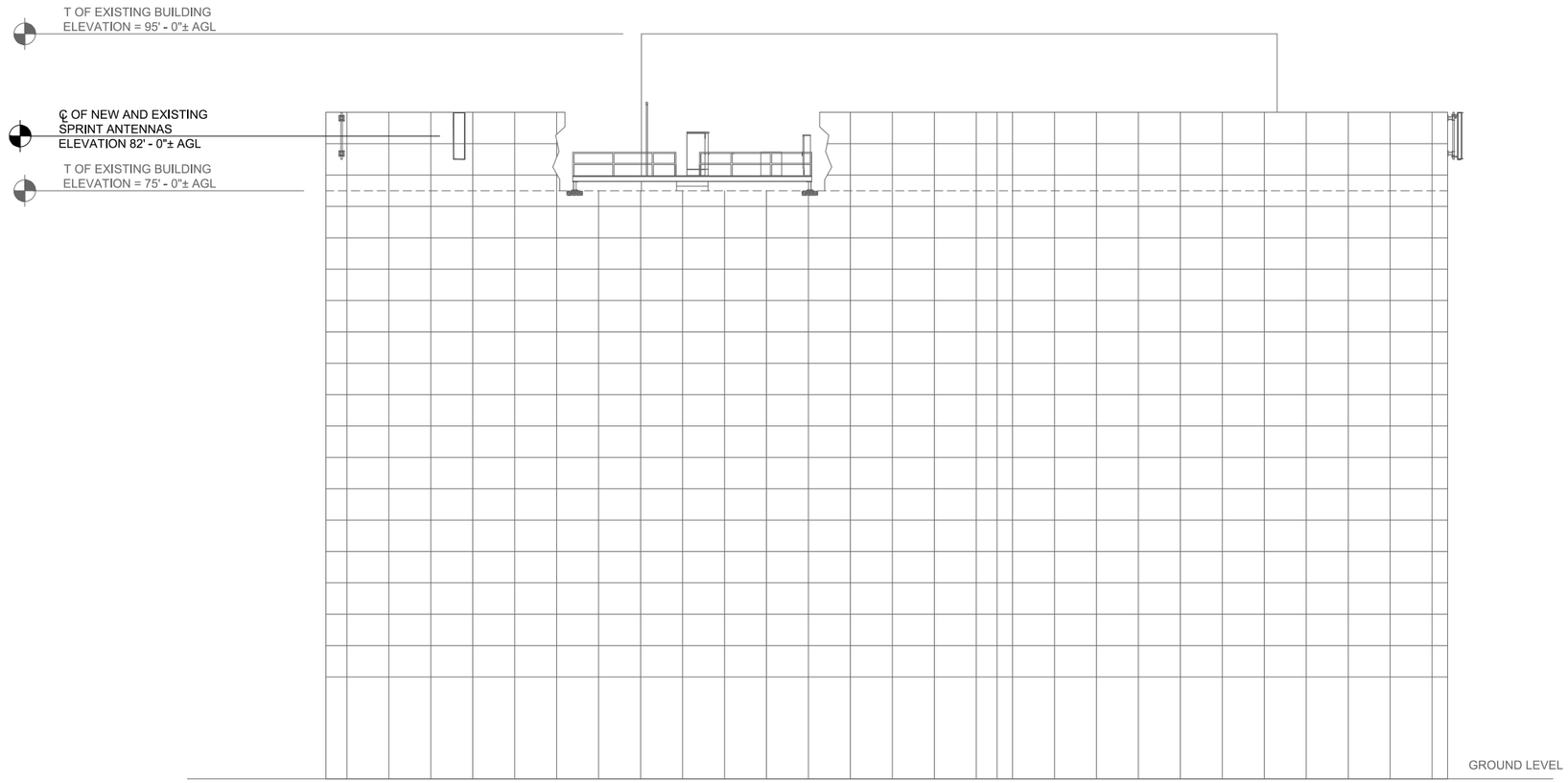
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

EQUIPMENT PLAN

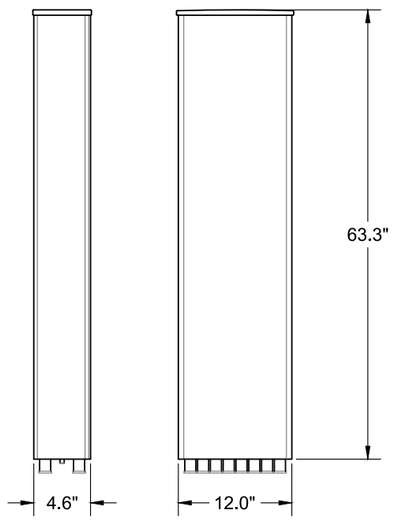
SHEET NUMBER:

A-2



2.5MHz 75'-0" BUILDING

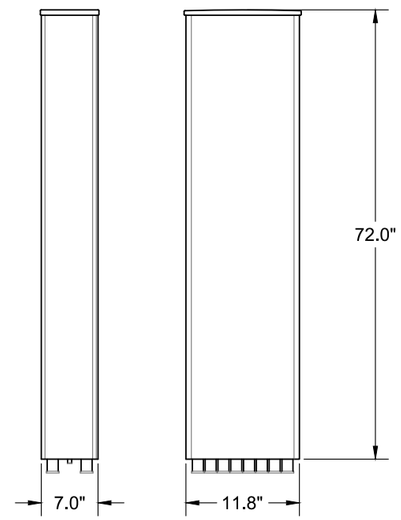
ELEVATION | NO SCALE | A



COMMSCOPE ANTENNA
TTTT64AP-1XR

DIMENSIONS, HxWxD: 63.3" x 12.0" x 4.6"
WEIGHT: 33 LBS.

ANTENNA DIMENTSIONS | NO SCALE | C



RFS ANTENNA
APXVSPP18-C-A20

DIMENSIONS, HxWxD: 72.0" x 11.8" x 7.0"
WEIGHT: 50 LBS.

HIGH CAPACITY ANTENNA DIMENTSIONS | NO SCALE | B

NOT USED | NO SCALE | D

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15

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RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

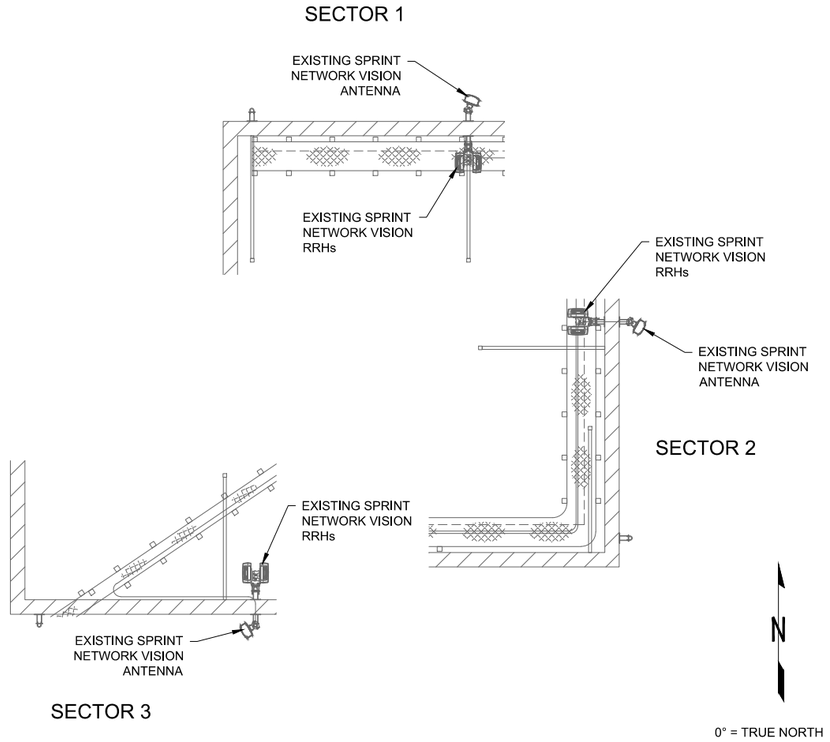
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

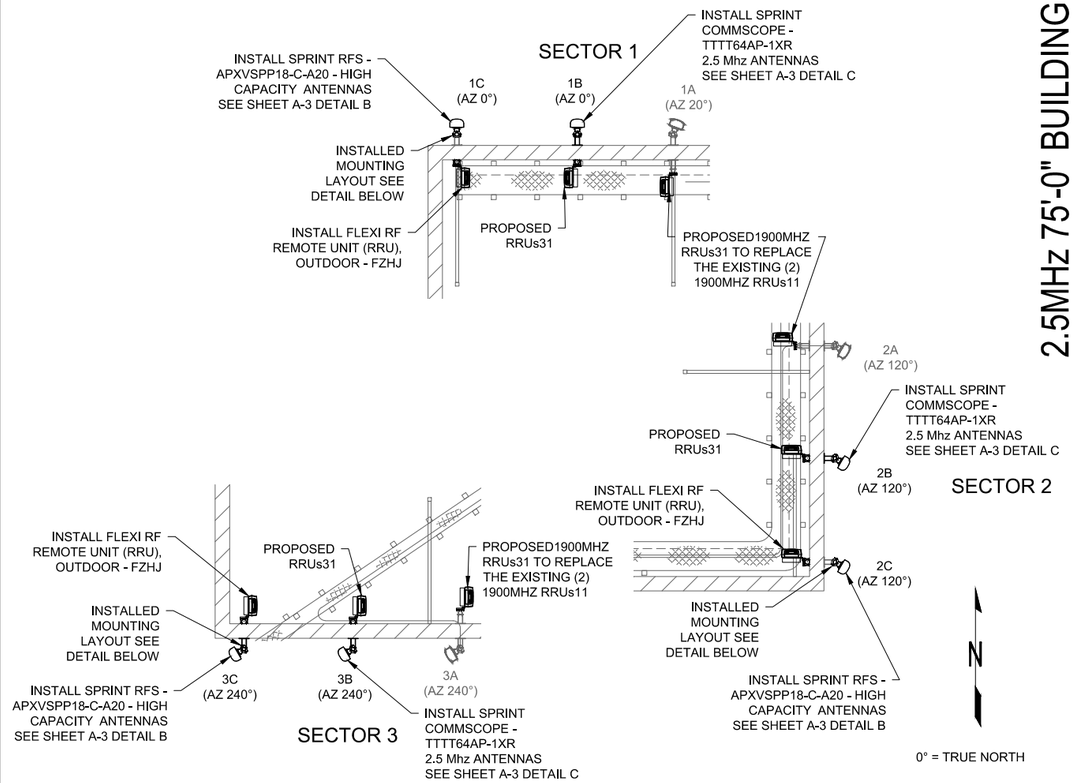
TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:

A-3

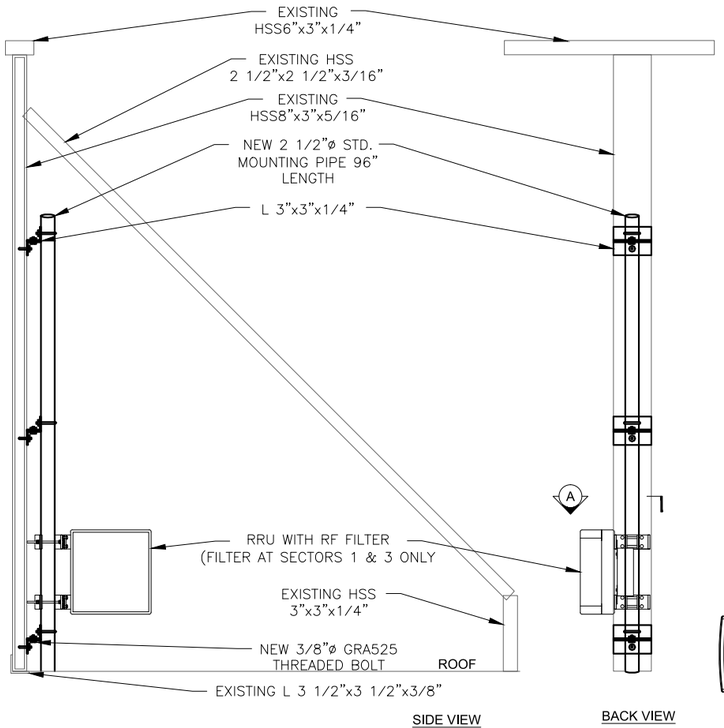


EXISTING ANTENNA LAYOUT | 1" = 60' | C

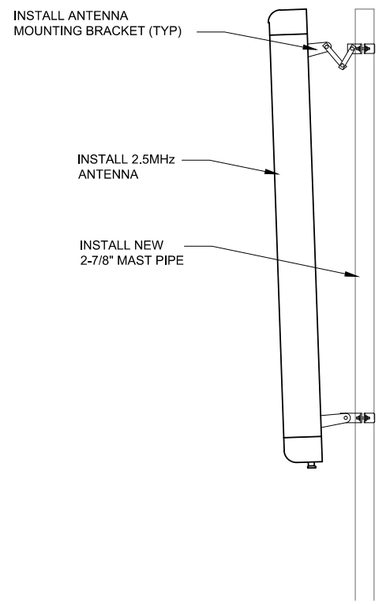


2.5MHz 75'-0" BUILDING

FINAL ANTENNA LAYOUT | 1" = 60' | A



RRU MOUNTING | NO SCALE | D



ANTENNA MOUNTING | NO SCALE | B

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PLANS PREPARED BY:

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RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:

A-4

NO DATA PROVIDED TO DATE

2.5MHz 75'-0" BUILDING

PLANS PREPARED FOR:

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6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

RF DATA SHEET
EQUIPMENT INFORMATION

SHEET NUMBER:

A-5

RF Design Sheet Version 3.1

***NOTE: Build site assuming future growth (ie 13.3 forecast).

Basic Information

Note: Italic text are RFDS instructions for RF Engineer. Please remove these comments prior to issuing RFDS form and remove italic formatting.

Cascade Number	ST03XC017
Site Name	Unknown
Site Number 1 or 2 (for more than 3 sector site)	1
99 Market Name	Missouri
OEM	NSN
Cluster ID	Missouri7
Issue Date	05/28/2014
Revision Date	06/13/2014
Solution ID	MP 4G LTE 24820
PID	25LTEST03XC017
RFDS Engineer (OEM RF Engineer)	
Sprint RF Engineer	Craig Licklider
Sprint RF Engineer (phone/e-mail)	(314) 642-5635/Craig.A.Licklider@sprint.com
Sprint RF Manager	Noel Hansen
Sprint RF Manager (phone/email)	(314) 503-9641/Noel.M.Hansen@sprint.com
RF Need By Date	
Project Description	New 2.5G TDD LTE service at existing site. Add new antennas, RRH and RAN equipment.

Location Information			
Latitude (decimal only)	38.653056		
Longitude (decimal only)	-90.55583300		
Address	900 Roosevelt Pkwy		
City, State, Zip Code	Chesterfield	MO	63017
County, E911 Phase	St. Louis		2

Site Level Design Information 2500Mhz	Number of Sectors	Carrier Count when 2.5G is on air	Tx and Rx start and stop frequencies
LTE 2500	3	To be built with 3 carriers. One carrier will be initially place on air.	2496 MHz - 2690 MHz
3G 1900 Mhz			
LTE PCS G Block			
LTE PCS Block A-F			
3G 800Mhz			
LTE 800Mhz			
Microwave Backhaul			
Existing BTS Location			
Existing BTS Type			
New Growth Cabinet Make/Model	None		
New Growth Cabinet Quantity	0		
New Growth Cabinet Dimensions (L x W x H in inches)			
New Growth Cabinet Loaded weight (lbs)			
New Top Hat Make/Model	*ALU Only*		
New Top Hat Cabinet Quantity	*ALU Only*		
New Top Hat Dimensions (L x W x H in inches)	*ALU Only*		
New Top Hat Loaded weight (lbs)	*ALU Only*		
Incremental Power Draw needed by new Growth Cabinet or Top Hat	0		
Site Structure Type			
Current Ethernet Speed			
Required Ethernet Speed			
Radio Configuration	8T8R		
Split Mode	0		
Radio Scenario	1		
Plumbing Diagram Number	SPRINT_PD_NS8T8RXAAXX		
RRH / RRU Model	FZHJ - 8 x 20W		
RRH / RRU Qty	3		
RRH/RRU Weight (lbs including mount)			
RRH/RRU Dimensions (L x W x H in inches)			
Power Junction Cylinder Make/Model	*Samsung Only*		

Additional GPS antenna required?	
A&E Drawing Requirements:	1) Calculate and call-out hybrid/fiber/coax main line cable route and lengths. 2) Calculate and call-out AISG cable route and lengths. 3) All antenna heights are to center of horizontal antennna. 4) Verify CL height with as-built drawings in Siterra or per Sprint site development. 5) No object is to be located 45 degrees left and right of front of antenna or 67.5 degress from horizontal from top and bottom of antenna. If this is not possible, contact RF Engineer for further instruction. In addition, 2.5G antenna is not to be placed in front of any other antenna using the same rules as above. Reference Sprint Antenna Placement Guidelines in Siterra General Library for more details. This includes Sprint and non-Sprint antennas. If necessary, 2.5G antenna can be placed at far edge of horizontal antenna mount member for clear Line Of Site or even on another sector mount for clear Line Of Site. 6) Horizontally, 2.5G antenna must be at least 18" from 1900Mhz antenna, 30" from 800Mhz antenna and 30Mhz from dual band 1900Mhz and 800Mhz antenna. Reference Sprint Antenna Placement Guidelines in Siterra General Library for vertical spacing requirements.
Special Construction Requirements:	1) AISG tests to verify operation is to be performed AFTER final installation of antennas and AISG cables have been connected. Verfy operation of ALL existing Sprint AISG equipment including 800Mhz, 1.9Ghz and 2.5G. Test include complete downtilt, azimuth (if applicable) and beamwidth swings (if applicable). Document AISG test results in Coax Sweep Test spreadsheet. 3) General Contractor must insure that no object is located in front of antenna. This means no object is to be located 45 degrees left and right of front of antenna or 67.5 degress from horizontal from top and bottom of antenna. If this is not possible, contact RF Engineer for further instruction. In addition, 2.5G antenna is not to be placed in front of any other antenna using the same rules as above. This includes Sprint and non-Sprint antennas. 4) General Contract is required to use a digital alignment tool to set azimuth, roll and downtilt. Azimuth accuracy is to be within 3 degrees. Downtilt and roll (left to right tilt) is to be within 0.1 degrees. If for some reason this accuracy cannot be achieved, update as-built drawings and email Sprint RF Engineer with as-built settings. Use 3Z RF alignment tool or equivalent tool. http://www.3ztelecom.com/antennaz-alignment-tool/
Additional RF Notes:	Site development - if no centerline height and azimuth exists in this RFDS, it means final RFDS has not been completed. If site is already leased and zoned, turn site on per lease. If not yet leased or zoned or if you can easily change the RF configuration, lease and zone, using on-air 1900 CL height and azimuth, mDT=0, eDT=-2 and use antenna called out in this RFDS for leasing and zoning. At some point, the final RFDS will come through. If different than your current configuration, you need to make a judgment call. If you can change the configuration without much delay in turning the site on, then make the change. If not, the build the site with existing configuration. Later one, you will receive funding to release, zone and modify site per final RFDS.

Final/New Configuration	Sector 1	Sector 2	Sector 3
Azimuth	20	120	240
Antenna Center Line (ft)	82.00	82.00	82.00
Antenna Manufacturer	CommScope	CommScope	CommScope
Antenna Model	TTTT65AP-1XR	TTTT65AP-1XR	TTTT65AP-1XR
Antenna Weight (lbs including mount)			
Antenna Dimensions (L x W x H in inches)			
Antenna Qty	1	1	1
Antenna Mechanical Downtilt	0	0	0
Antenna Electrical Downtilt	2	2	2
Combined with ?			
Upper Splitter Make/Model			
Upper Splitter Qty	0	0	0
Upper Splitter Dimensions (L x W x H in inches)			
Upper Splitter Weight (lbs)			
Top Jumper Make/Model	Coax Jumper. Mfg TBD.	Coax Jumper. Mfg TBD.	Coax Jumper. Mfg TBD.
Top Jumper Quantity	9	9	9
Top Jumper length in feet			
Bottom Jumper Make/Model			
Bottom Jumper Quantity	0	0	0
Bottom Jumper length in feet	*For Ground Mount*	*For Ground Mount*	*For Ground Mount*
Surge Arrestor			
Upper Diplexer/Triplexor/Duplexor Model			
Upper Diplexer/Triplexor/Duplexor Qty			
Upper Diplexer/Triplexor/Duplexor Dimensions (L x W x H in inches)			
Upper Diplexer/Triplexor/Duplexor Weight (lbs)			
Upper Diplexer/Triplexor/Duplexor Model			
Upper Diplexer/Triplexor/Duplexor Qty			
DC Block (specify port)			
RF Filter Make/Model			NSN FFHS
RF Filter Quantity	0	0	1
RF Filter Dimenstions (L x W x H in inches)			
RF Filter Weight (lbs)			

2.5MHz 75'-0" BUILDING

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

GLS Gateway Land Services Engineering Surveying

Gateway Land Services, Inc.
4 West Drive, Suite 110
Chesterfield, MO 63017
314.881.9556
f-636.530.9825
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OEM:

ENGINEERING LICENSE:

STATE OF MISSOURI
MICHAEL A BUESCHER
NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15

Michael A. Buescher, P.E. Civil Engineering
Missouri P.E. E-2001018714
Gateway Land Services, Inc. Missouri Authority No. E-2007027544

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RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

RF DATA SHEET

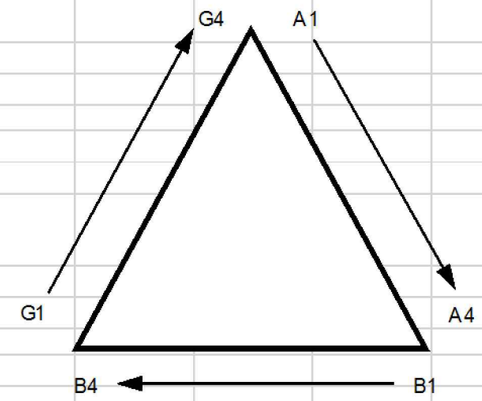
SHEET NUMBER:

A-6

Table 20-5. 2500MHz Radio Calibration Cable Color Code

2500MHz #1 Cal Cable - Sector	Cable	First Ring	Second Ring	Third Ring	Forth Ring	Fifth Ring	Sixth Ring
1 Alpha	1	Yellow		Yellow	White		
2 Beta	2	Yellow	Yellow		Yellow	White	
3 Gamma	3	Yellow	Yellow	Yellow		Yellow	White
2500MHz #2 Cal Cable - Sector	**Cable**	**First Ring**	**Second Ring**	**Third Ring**	**Forth Ring**	**Fifth Ring**	**Sixth Ring**
1 Alpha	1	Yellow		Yellow	Purple		
2 Beta	2	Yellow	Yellow		Yellow	Purple	
3 Gamma	3	Yellow	Yellow	Yellow		Yellow	Purple

Figure 1: Antenna Orientation

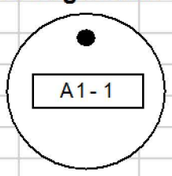


NOTE*: All color code tape shall be 3M-35 and shall be installed using a minimum of (3) wraps of tape.
NOTE*: All color bands installed at the tower top shall be a minimum of 3" wide and shall have a minimum of ¾" of spacing between each color.
NOTE*: All color bands installed at or near the ground may be only ¾" wide. Each top-jumper shall be color coded with (1) set of 3" wide bands.
NOTE*: Each main coax shall be color coded with (1) set of 3" bands near the top-jumper connection and with ¾" color bands just prior to entering the BTS or transmitter building.
NOTE*: All bottom jumpers shall be color coded with (1) set of ¾" bands on each end of the bottom jumper.
NOTE*: All color codes shall be installed so as to align neatly with one another from side-to-side.
NOTE*: Each color band shall have a minimum of (3) wraps and shall be neatly trimmed and smoothed out so as to avoid unraveling.
NOTE*: X-Pole Antennas should use "xx-1" for the "+45" port, "xx-2" for the "-45" port.
NOTE*: Colorband #4 refers to the Frequency Band: ORANGE=850, VIOLET=1900. Used on jumpers only.
NOTE*: RF feedline shall be identified with a metal tag (stainless or brass) and stamped with the sector, antenna position, and cable number.
NOTE*: Antennas must be identified, using the sector letter and antenna number, with a black marker prior to installation.

CABLE MARKING TAGS

TO PROVIDE ADDITIONAL IDENTIFICATION RF CABLES SHALL BE IDENTIFIED WITH A METAL TAG MADE OF STAINLESS STEEL OR BRASS AND STAMPED WITH THE SECTOR, ANTENNA POSITION, AND CABLE NUMBER. THE ID MARKING LOCATIONS SHOULD BE AS PER "CABLE MARKING LOCATIONS TABLE". THE TAG SHOULD BE ATTACHED WITH CORROSIVE PROOF WIRE OR WAX STRING AROUND THE CABLE. THE TAG SHOULD BE LABLED AS SHOWN BELOW IN FIGURE 2.

Figure 2: Tag Detail Example



CABLE MARKING LOCATIONS TABLE		
TAPE	TAG	LOCATIONS
X		EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
X		EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
	X	MARKING TAGS SHALL BE ATTACHED AT CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER
X		ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF BOTTOM JUMPER.

2.5MHz 75'-0" BUILDING

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Overland Park, Kansas 66251

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ROOSEVELT BUILDING

SITE CASCADE:
ST03XC017

SITE ADDRESS:
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:
RF DATA SHEET

SHEET NUMBER:
A-7

Sprint

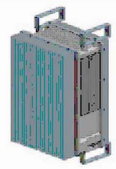
Design Document

3.2.3 RRUS31 Technical Specifications and Description

3.2.3.1 RRUS31 Radio

RRUS 31 B25 OVERVIEW

KRC 118 159/1



- 4T/4R RRU Band 25
- 160W, 40W/Antenna
- 65MHz Instantaneous Bandwidth
- -40ºC to +55ºC

- Ericsson RRU Interfaces
  - -48 V DC Input
  - 2 x 5Gbps CPRI
  - External RET and Alarm Support

- CDMA, LTE Support
  - 3/5/10/15/20MHz LTE
  - Max 4 LTE carriers (4T/4R)
  - Max 6 CDMA carriers (1T/4R)
  - Max 8 carriers in Mixed Mode
  - Max 4 Tx carriers per Ant Port

	RRUS 31 B25
Power Consumption	Max. 740 W
Weight	< 27 kg, 59.5 lb
Volume	< 30 L
Size (without bracket)	300 x 237 x 420 mm 11.8 x 9.3 x 16.5 in

Frequency bands
3GPP Band 25, 3GPP2 B14
UL: 1850-1915MHz, DL: 1930-1995MHz
HW Capacity
Carrier bandwidth CDMA: 6 x CDMA carriers
Carrier bandwidth LTE: 40 MHz of occupied band width or 4 LTE Carriers
Carrier bandwidth in MSMM: 6 x CDMA plus 2 x 4T/4R 5MHz LTE
Maximum Carriers: 4Tx per Ant port, 16Tx per Radio, 8Rx per Ant port
LTE Carrier Bandwidth: 3/5/10/15/20MHz
IBW: 65 MHz
MIMO: Yes, 1T/2R, 2T/2R, 2T/4R, 4T/4R
Output power: 4x40W
Interface specifications

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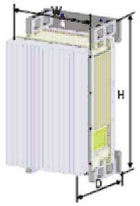
Design Document

Power supply: -48 V DC (2Wire)
Antenna Ports: 4 x DIN 7/16
External ALD: RET 2.0, DIN 8
External Alarms: DIN 8, 2 alarm inputs
CPRI: 2 x 2.5 or 5.0 Gbps CPRI (Changeable SFPs)
Push (Reset) button, 5 x LED
Field Ground
Mechanical Specifications
WxDxH: 300 mm (11.81 in) x 237 mm (9.33 in) x 420 mm (16.54 in)
Weight: < 27kg (59.6lb)
Mounting: Wall, Pole mount, using standard RRU brackets
Power Specifications
Power Consumption: 740W Maximum
Nominal voltage: -48 VDC
Voltage variation: -38.1V to -57.6 VDC
Abnormal / Non Destruction Voltage Range: 0 to -38.1 VDC and -57.6 to –60 VDC
Start/Restart Recovery Voltage: -42.5 +/-0.5 VDC
Stop (Shutdown) voltage:-35.0V +/- 0.5VDC
Tx off voltage: -37.6V +/- 0.4VDC
Environmental specifications
Environment: Outdoor class with IP55
Normal operating temp.: -40 - +55 °C (cold start at -40 °C)

FINAL MECHANICALS

RRU Unit:
[Metric] W:300mm x D:237mm x H:420mm
[English] W:11.8" x D:9.3" x H:16.5"
Weight: 27kg (59.5lbs) incl.bracket

RRU with Brackets:
[Metric] W:300mm x D:266mm x H:520mm
[English] W:11.8" x D:10.5" x H:20.5"
Weight: 27Kg (59.5lbs)



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RRUs 31 | NO SCALE | C

nsn

NSN Flexi RF Module - FZHJ

Description	FZHJ-RRH
Operating band	2496-2690MHz (Band 41)
Concurrent bandwidth	60MHz per PA
HW Configurations Supported	8T8R / 4T4R / 2T2R
Output Power	3 carriers @ ~6.5W per PA for each carrier
Volume (L)	<=35L
Weight (kg)	<=55.2lb (25kg)
Dimensions	8.7 x 17.4 x 14 inch
Optical line rate	6 x 6G/OBSAI
Cooling	Convection
Power consumption (-48V DC)	618W @95%, 723W @68%
Operating Temperature	(-40 to +131°F) / (-40 to +55°C)
Protection	IP65

Specification subject to change
Not drawn to scale

NSN Confidential

FLEXI RF REMOTE UNIT | NO SCALE | A

2.5MHz 75'-0" BUILDING

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

GLS Gateway Land Services Engineering Surveying
Gateway Land Services, Inc.
4 West Drive, Suite 110
Chesterfield, MO 63017
314.881.9556
f-636.530.9825
www.glsstl.com

OEM:

ENGINEERING LICENSE:

STATE OF MISSOURI
MICHAEL A BUESCHER
NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15

Michael A. Buescher, P.E. Civil Engineering
Missouri P.E. E-2001018714
Gateway Land Services, Inc. Missouri Authority No. E-2007027544

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SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

EQUIPMENT DETAILS

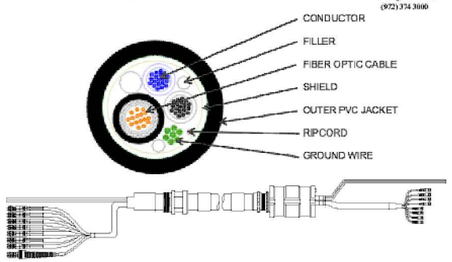
SHEET NUMBER:

A-8

nsn

NSN Rooftop Hybrid Cable – Power + Fiber

6080 Connection Drive
Irving, TX 75039
(972) 374 3000



Cable Construction		Other Characteristics	
Power Conductors	2 - 6AWG 19 STRAND THHN/THWN	Bending Radius	16 inches
	PVC INSULATION THICKNESS: 0.030" (0.76 mm)	Operating Temp. (Fiber):	-40°C to 70°C
	NYLON COATING THICKNESS: 0.010" (0.25 mm)	Storage Temp. (Fiber):	-40°C to 75°C
	OD OVER NYLON: 0.258" (6.6 mm)	Installation Temp. (Fiber):	-20°C to 60°C
		Maximum Long Term Load (Fiber):	300 N (180 lbf)
Ground	1 - 6AWG 7 STRAND BARE COPPER	Maximum Short Term Load (Fiber):	2700 N (600 lbf)
		Estimated Cable Weight	46 lbs/ft
Shield	.003" BARE COPPER TAPE, SPIRAL, 25% OVERLAP	RRU Distance	200-400 feet
Fiber Cables	FIBER TYPE: OS2 BEND-INSENSITIVE LOW		
	WATER-PEAK SINGLE-MODE - G.657.A1		
	FIBER COUNT: 16		
	FIBER OD: 0.010" (0.25 mm)		
	NOMINAL DIAMETER: 0.315" (8 mm)		
	JACKET: LOW-SMOKE ZERO-HALOGEN		
Outer Jacket	MATERIAL: PVC - UV RESISTANT		
	COLOR: BLACK		
	NOMINAL WALL: 0.085" (1.3 mm)		
	NOMINAL OD: .820" (21.05 mm)		
	RIPCORD UNDER JACKET		
	ULTC-OI		
	FT-4 (FIBER)		

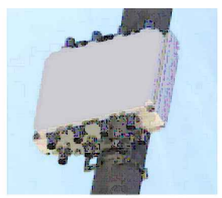
Drawings are not drawn to scale
Specification subject to change
Date – 6/23/2013 - Sprint

HYBRID CABLE DETAIL | NO SCALE | D

6080 Connection Drive, Irving, TX 75039
(972) 374 3000

nsn

Radar Co-Location Filter Unit, Outdoor – FFHS



Description	Specification (over full temperature range)
Insertion loss 2496 - 2690MHz	<1.0dB over any 20MHz channel BW (typ. 0.65dB @ +25C at band edge, 0.2dB mid band)
Cascaded rejection of FFHS with FZHJ RRU: >70dB (2704 - 2998MHz) FFHS standalone rejection:	Attenuation / Frequency 40 dB / 2704 - 2705 MHz 40 dB / 2705 - 2730 MHz 48 dB / 2730 - 2740 MHz 45 dB / 2740 - 3000 MHz
Return loss	>18dB (FFHS only)
Isolation between filters	>40dB
GDD @ 5MHz	<20ns (worst case, ~15ns typ.)
GDD @ 20MHz	<40ns (worst case, ~25ns typ.)
GDR @ 194MHz	<60ns (worst case, ~35ns typ.)
Weight	7.9kg
Filter size (w/o brackets)	W303mm x H273mm x D74.6mm (including connectors) (W11.9 x H10.8 x D2.9 inch)
Brackets	Pole or wall mount (compatible with NSN RRU/RFM installation requirements)(W 6.1 x H13.1 inch)
Connectors	Female DIN 47237 (mini-DIN 4.1/9.5), in-line design
Ingress protection	IP66
Operating temperature range	- 40°C to + 55°C

Specification subject to change

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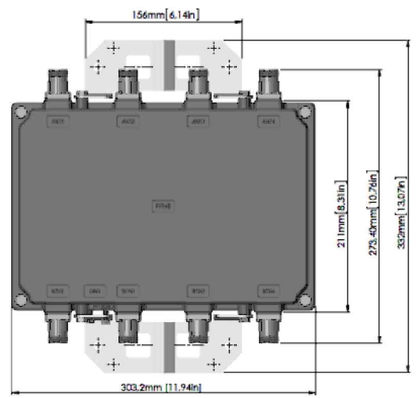

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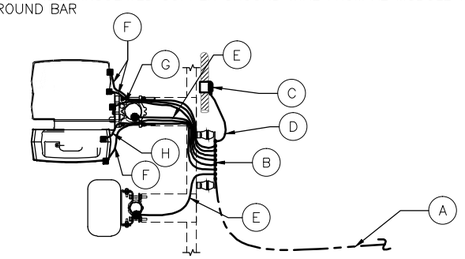
RF FILTER DETAIL | NO SCALE | B

2.5MHz 75'-0" BUILDING

LEGEND:

- SECURE WIRES AND GROUNDS AS NEEDED TO PREVENT MOVEMENT AND POTENTIAL HAZARDS
- EMPTY PIPE MOUNTS NOT SHOWN FOR CLARITY

A. CONTINUOUS #2 AWG GREEN INSULATED, STRANDED GROUND WIRE FROM MASTER GROUND BAR TO SECTOR GROUND BAR
B. SECTOR GROUND BAR (ONE PER SECTOR)
C. GROUND KIT FOR HYBRID CABLE
D. #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FOR GROUND KIT TO SECTOR GROUND BAR
E. #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FROM ANTENNA MOUNTING PIPE TO SECTOR GROUND BAR (ONE PER PIPE)
F. #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FROM RRU TO SECTOR GROUND BAR (ONE PER RRU)
G. #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FROM 800 MODULE TO SECTOR GROUND BAR
H. #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FROM A2 MODULE TO SECTOR GROUND BAR



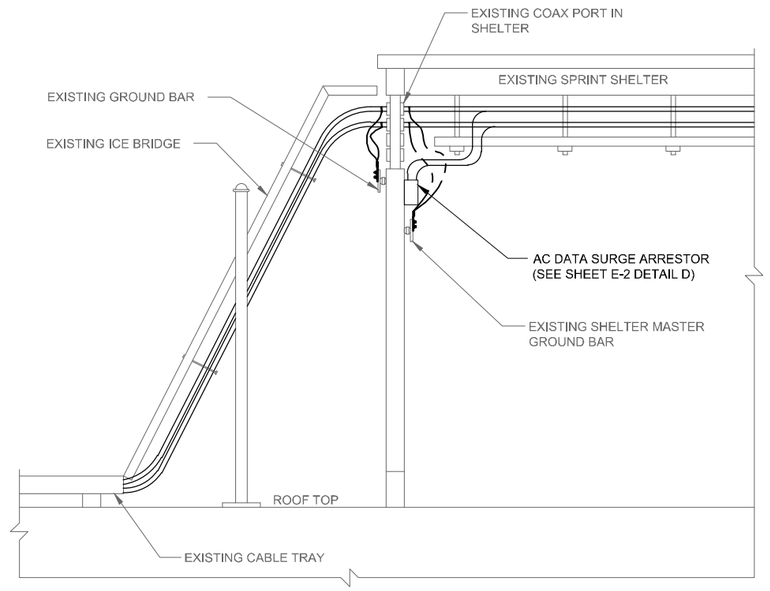
SYMBOL LEGEND:

GROUND WIRE

● EXOTHERMIC CONNECTION ■ MECHANICAL CONNECTION

NOTE:
FOR CORRECT ORIENTATION TO NORTH, SEE DWG. A-1 AND A-1A

ANTENNA GROUNDING PLAN (TYP) | NO SCALE | A



CABLE PORT GROUND | NO SCALE | B

DETAIL NOT USED | NO SCALE | C

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SITE CASCADE:

ST03XC017

SITE ADDRESS:

16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

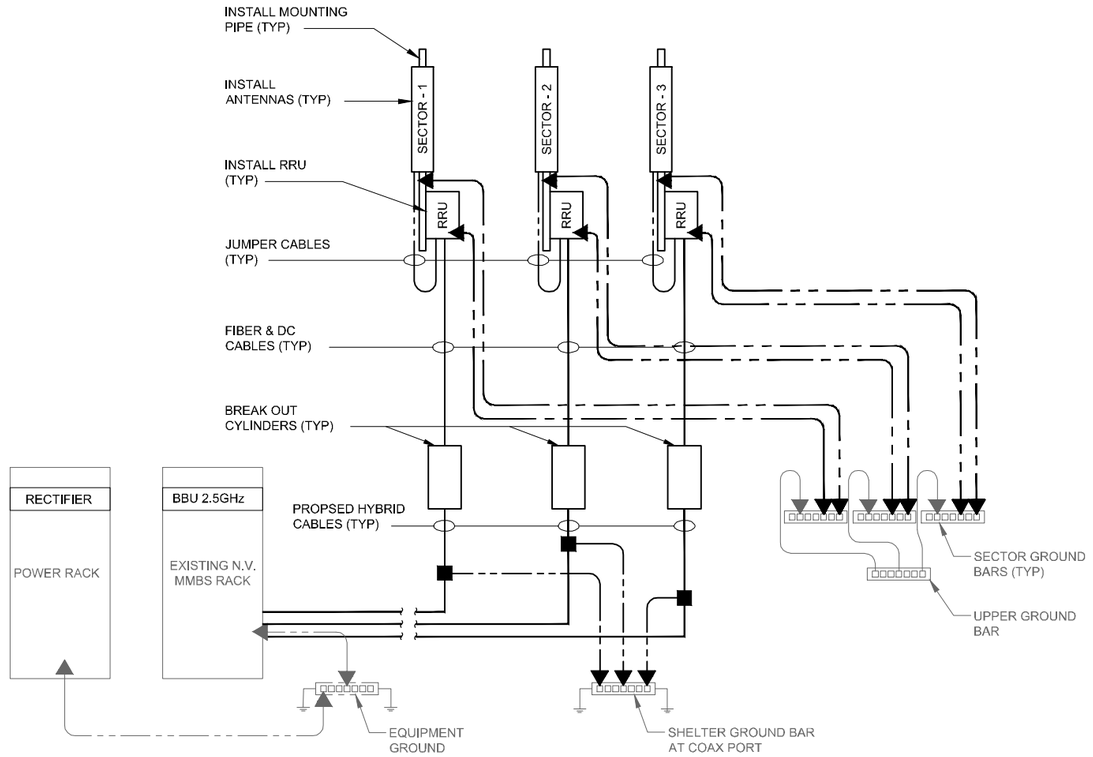
GROUNDING & ELECTRICAL PLAN

SHEET NUMBER:

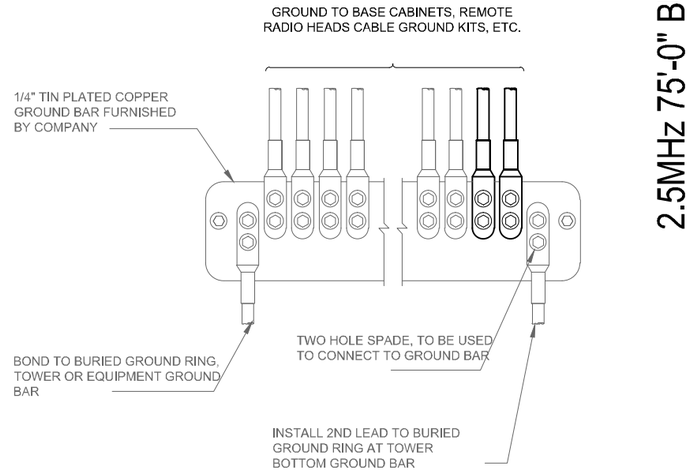
E-1

2.5MHz 75'-0" BUILDING

SYMBOL LEGEND
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION



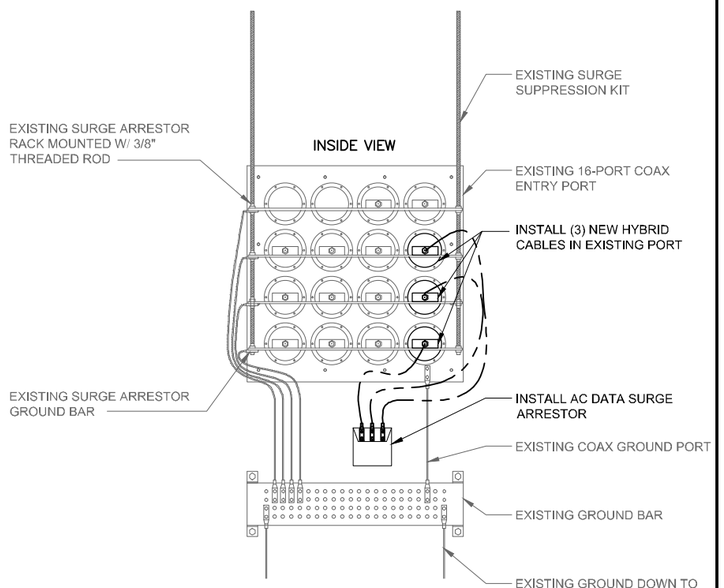
TYPICAL GROUNDING RISER DIAGRAM | NO SCALE | C



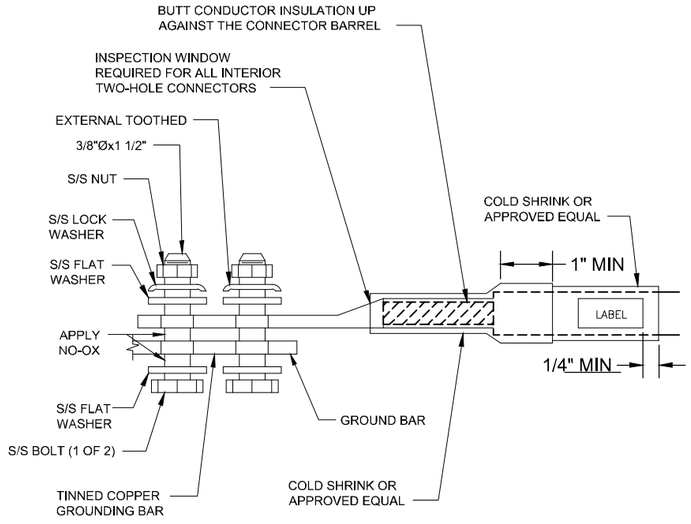
NOTES
1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

2-HOLE SPADE CONNECTIONS AT GROUND BARS | NO SCALE | A

DETAIL NOT USED | NO SCALE | E



SURGE ARRESTOR CONNECTION | NO SCALE | D



TWO HOLE LUG | NO SCALE | B

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
GLS Gateway Land Services Engineering Surveying
Gateway Land Services, Inc.
4 West Drive, Suite 110
Chesterfield, MO 63017
314.881.9556
f-636.530.9825
www.glsstl.com

OEM:

ENGINEERING LICENSE:
STATE OF MISSOURI
MICHAEL A BUESCHER
NUMBER E-2001018714
REGISTERED PROFESSIONAL ENGINEER
3/28/15
Michael A. Buescher, P.E. Civil Engineering
Missouri P.E. E-2001018714
Gateway Land Services, Inc. Missouri Authority No. E-2007027544

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REVISIONS:

DESCRIPTION	DATE	BY	REV
2.5 REVIEW	05-21-14	MB	0
RF DATA ADDED	09-22-14	MB	1
HIGH CAPACITY ADDITION	12-15-14	MB	2
SCOPE REVISION	03-28-15	MB	3

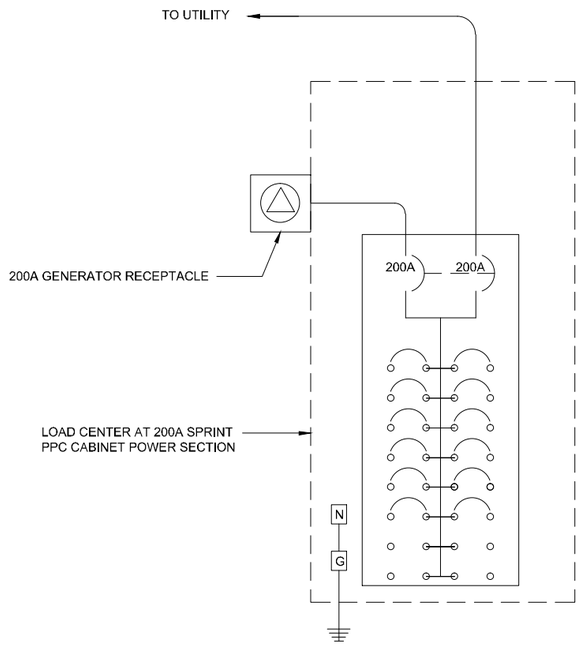
SITE NAME:
ROOSEVELT BUILDING

SITE CASCADE:
ST03XC017

SITE ADDRESS:
16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:
GROUNDING DETAILS

SHEET NUMBER:
E-2



DC POWER CONVERTERS & RECTIFIERS DATA SHEET

Sprint Cascade: ST03XC017
Location Name: ROOSEVELT BUILDING

Date Completed: 3/6/2014

Power Distribution Unit / Converters

Nameplate Information

Manufacturer: Ericsson
Model No.: RBS 6102
Serial No.: 5/B154600/3SR1A

PDU / Converter Information

PDU / Converter #	Volt Rating, VDC (24 or 48)	Mfr Part #		Amp Reading, (if possible)	Mfr Serial # (If Possible)
1	48	BMG 980 336/6			SC941585316
2	48	BMG 980 336/6			SX051982761
3	48	BMG 980 336/6			SX051982809
4	48	BMG 980 336/6			SX051982760
5	48	BMG 980 336/6			SC941585315
6	48	BMG 980 336/6			SC941585385
7					
8					
9					
10					

Rectifiers

Nameplate Information

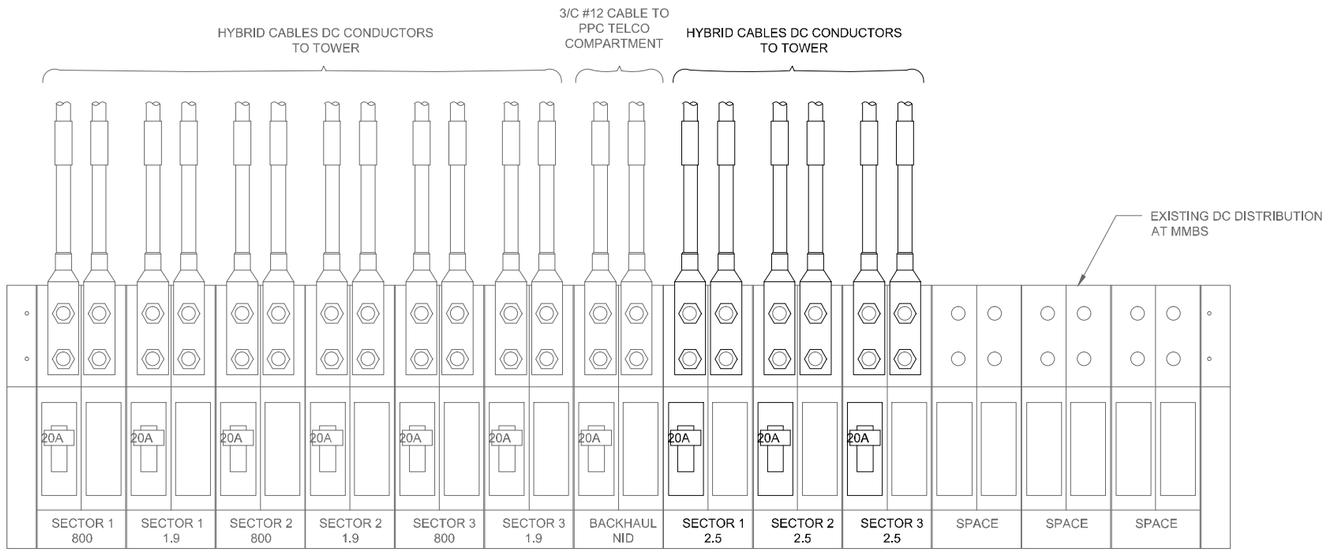
Manufacturer: Ericsson
Model No.: BML 161 174/1
Serial No.: NA

Rectifier Information

Voltage READING, VDC:	54.2		
Number of existing rectifiers:	7		1-hole
How many rectifier shelves are there?	2		2-hole
Is there room for another rectifier shelf if required? (Yes/No):	YES		Neither
How many open slots are there for more rectifiers?	3		Both
Is there a 1-hole or 2-hole lug to tap onto existing bus bar?	2	=	Other

Rectifier #	Slot Equipped		Comments
1	7		
2	8		
3	9		
4	14		
5	15		
6	16		
7	17		
8			
9			
10			
11			
12			

ELECTRICAL ONE-LINE DIAGRAM & LOAD CALCULATION | NO SCALE | A



DC DISTRIBUTION | NO SCALE | B

2.5MHz 75'-0" BUILDING

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Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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SITE NAME:

ROOSEVELT BUILDING

SITE CASCADE:

ST03XC017

SITE ADDRESS:

16090 SWINGLEY RIDGE ROAD
CHESTERFIELD, MO 63017

SHEET DESCRIPTION:

DC POWER & DISTRIBUTION

SHEET NUMBER:

E-3