Sprint

2.5 EQUIPMENT DEPLOYMENT

SITE NAME

CARL FAVERO

SITE NUMBER / CROWN CASTLE BU#

SL03XC124 / 880529

SITE ADDRESS

1820 SOUTH 4300 WEST
OGDEN, UT 84315

SITE TYPE

EXISTING 97'-6" MONOPOLE

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

RAGE DEVELOPMENT LLC

SMITH HYATT ARCHITECTS
845 SOUTH MAIN, BOUNTIFUL, UTAH 84010
801-298-5777 FAX 801-298-1677

CODE

UTAH STATE CODE COMPLIANCE:

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THIS PLANS NEEDS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

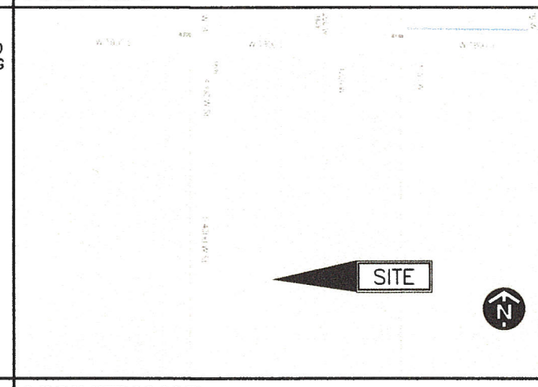
BUILDING CODE:
2012 INTERNATIONAL BUILDING CODE
WITH ALL LATEST/LOCAL AMENDMENTS

ELECTRICAL CODE:
2011 NATIONAL ELECTRIC CODE
WITH ALL LATEST/LOCAL AMENDMENTS

ACCESSIBILITY REQUIREMENTS:

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.

AREA MAP

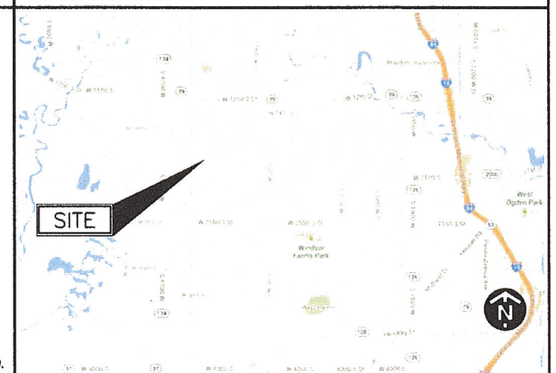


PROJECT DESCRIPTION

- THE WIRELESS COMMUNICATIONS FACILITY IS NOT INTENDED FOR HUMAN OCCUPANCY
- THIS FACILITY DOES NOT REQUIRE POTABLE WATER AND WILL NOT PRODUCE ANY SEWAGE.
- THE SCOPE OF WORK CONSISTS OF MODIFYING THE EXISTING WIRELESS INSTALLATION:
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) NEW RRUS (REMOTE RADIO UNITS)

NOTE: DRAWING SCALES ARE FOR 11"X17" SHEETS UNLESS OTHERWISE NOTED.

VICINITY MAP



PROJECT SUMMARY

SITE NAME:	CARL FAVERO
SITE NUMBER:	SL03XC124
CROWN CASTLE BU#	880529
SITE ADDRESS:	1820 SOUTH 4300 WEST OGDEN, UT 84315
COUNTY:	WEBER
ZONING CLASSIFICATION:	OCIP
ZONING DISTRICT:	OGDEN
SOURCE:	SITE AUDIT
LATITUDE:	41.232402° (NAD 83)
LONGITUDE:	-112.08224° (NAD 83)
GROUND ELEVATION:	4257'

PROPERTY/TOWER OWNER:

COMPANY:	CROWN CASTLE USA, INC
CONTACT:	CUSTOMER SERVICE
ADDRESS:	5350 NORTH 48TH STREET, SUITE 305 CHANDLER, AZ 85226-5141
EMAIL:	N/A
PH:	(480) 735-6900

SITE CONSTRUCTION MANAGER:

COMPANY:	SPRINT SITE DEVELOPMENT/UTAH
CONTACT:	JUSTIN R. NELSON
CELL #:	(435) 232-5459
OFFICE #:	(801) 685-5809

ENGINEERING FIRM:

COMPANY:	SMITH HYATT ARCHITECTS
CONTACT:	TOM SMITH
EMAIL:	tom@smithhyatt.com
MAIN OFFICE:	(801) 298-5777

POWER COMPANY

COMPANY:	PACIFICORP
CONTACT:	CUSTOMER SERVICE
PHONE:	1-888-221-7070

AAV PROVIDER:

COMPANY:	TBD
CONTACT:	CUSTOMER SERVICE
PHONE:	(XXX) XXX-XXXX

SHEET INDEX

SHEET	DESCRIPTION
T-1	TITLE SHEET
SP-1	SPRINT SPECIFICATION
SP-2	SPRINT SPECIFICATION
A-1	OVERALL SITE PLAN
A-2	ENLARGED SITE PLAN
A-2A	EQUIPMENT LAYOUT
A-3	TOWER ELEVATION AND ANTENNA LAYOUT
A-4	SITE DETAILS
A-5	RF DATA SCHEMATIC
A-6	NOT USED
A-7	CABLE AND COLOR CODING
A-8	EQUIPMENT DETAILS
E-1	AC POWER DISTRIBUTION
E-2	AC & DC POWER DISTRIBUTION AND SCHEDULE
E-3	GROUNDING DETAILS

CERTIFICATION STATEMENT:

I CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF THE 2012 INTERNATIONAL BUILDING CODE.

LICENSED ARCHITECT – STATE OF UTAH

DATE SIGNED:	EXPIRES:	LICENSE#:
sign date		

CHECKED BY:	JRC
APPROVED BY:	TGS

#	DATE	DESCRIPTION	INT.
0	01/27/14	90% REVIEW	NSW
1	02/05/14	STAMPED	NSW

REGISTERED PROFESSIONAL ARCHITECT
No. 117557
Thomas G. Smith
STATE OF UTAH

SIGNED DATE: 02/05/14

SITE NAME
CARL FAVERO

SITE I.D.
SL03XC124
880529

SITE ADDRESS
1820 SOUTH 4300 WEST
OGDEN, UT 84315

SHEET NAME
TITLE SHEET

SHEET NUMBER
T-1

14010

SIGNATURE BLOCK

APPROVAL	SIGNATURE	DATE
SITE ACQ. MGR		
CONSTRUCTION MGR		
A&E MGR		
PLANNING CONS.		
RF MGR		
RF ENGINEER		
PROPERTY OWNER		
SPRINT REP.		
AVV MGR.		

DRIVING DIRECTIONS

DEPART FROM SALT LAKE INTERNATIONAL AIRPORT

DEPART SALT LAKE INTERNATIONAL AIRPORT ON LOCAL ROAD(S) WEST. MERGE ONTO LOCAL ROAD(S). KEEP LEFT ONTO RAMP. TAKE RAMP (LEFT) ONTO I-80. TURN OFF ONTO RAMP. TAKE RAMP (LEFT) ONTO I-15 [I-80]. AT EXIT 293, TURN OFF ONTO RAMP. TAKE RAMP (LEFT) ONTO SR-151 [W 10600 S]. ROAD NAME CHANGES TO W 10600 S [W 106TH S]. TURN RIGHT (SOUTH) ONTO US-89 [S STATE ST]. TURN LEFT (EAST) ONTO E 11000 S [E 110TH S]. TURN RIGHT (SOUTH) ONTO S 230 E. SITE IS ON THE LEFT HAND SIDE.

PROJECT TEAM

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251
TEL: (913) 624-6000
APPLICANT

RAGE DEVELOPMENT LLC
PROJECT MANAGER

SMITH HYATT ARCHITECTS
845 SOUTH MAIN, BOUNTIFUL, UTAH 84010
801-298-5777 FAX 801-298-1677
ENGINEER

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. THE CONTRACTOR IS RESPONSIBLE FOR MEETING THE REQUIREMENTS OF SPRINT'S "STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES" IN REGARDS TO ALL WORK COMPLETED.

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.

D. GROUNDING NE-312-201

E. SPRINT INTEGRATED CONSTRUCTION STANDARDS VERSION 4.0

METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION:

CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN

A. COAX COLOR CODING SWEEPS AND FIBER TESTING TS-0200 AND EL-0568

B. CABLE LABELING EN-2012-00

C. APPLICABLE INSTALLATION MOPS IDENTIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS

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.

ALTERNATES:SECTION 01 400 – SUBMITTALS & TESTS

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. SCALABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
4. ALL AVAILABLE JURISDICTIONAL PERMIT AND OCCUPANCY 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. APPLICABLE 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 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, MIN LENGTH FOR JUMPER SHALL BE 10"-0".

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.

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 CABLE 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 INSTALLED INSIDE MONOPOLE WITH CABLE SUPPORT GRIPS AS REQUIRED BY THE MANUFACTURER.
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-ANALGAMATING 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

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REGISTERED PROFESSIONAL ENGINEER
No. 117557
Thomas G. Smith
STATE OF UTAH

SIGNED DATE: 02/05/14

SITE NAME
CARL FAVERO

SITE I.D.
SL03XC124
880529

SITE ADDRESS
1820 SOUTH 4300 WEST
OGDEN, UT 84315

SHEET NAME
SPRINT SPECIFICATION

SHEET NUMBER
SP-1

14010

SPRINT SPECIFICATIONS

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. NEW DC CIRCUIT IS 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 PROPOSED 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 PROPOSED 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. 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 BY ROX TEC.
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 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 EXCEPTED 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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OVERLAND PARK, KS 66251

RAGE DEVELOPMENT LLC

SMITH HYATT ARCHITECTS
845 SOUTH MAIN, BOUNTIFUL, UTAH 84010
801-298-5777 FAX 801-298-1677

CHECKED BY:	JRC
APPROVED BY:	TGS

#	DATE	DESCRIPTION	INT.
0	01/27/14	90% REVIEW	NSW
1	02/05/14	STAMPED	NSW

REGISTERED PROFESSIONAL ARCHITECT
No. 117557
Thomas G. Smith
STATE OF UTAH

SIGNED DATE: 02/05/14

SITE NAME
CARL FAVERO

SITE I.D.
SL03XC124
880529

SITE ADDRESS
1820 SOUTH 4300 WEST
OGDEN, UT 84315

SHEET NAME
SPRINT SPECIFICATION

SHEET NUMBER
SP-2

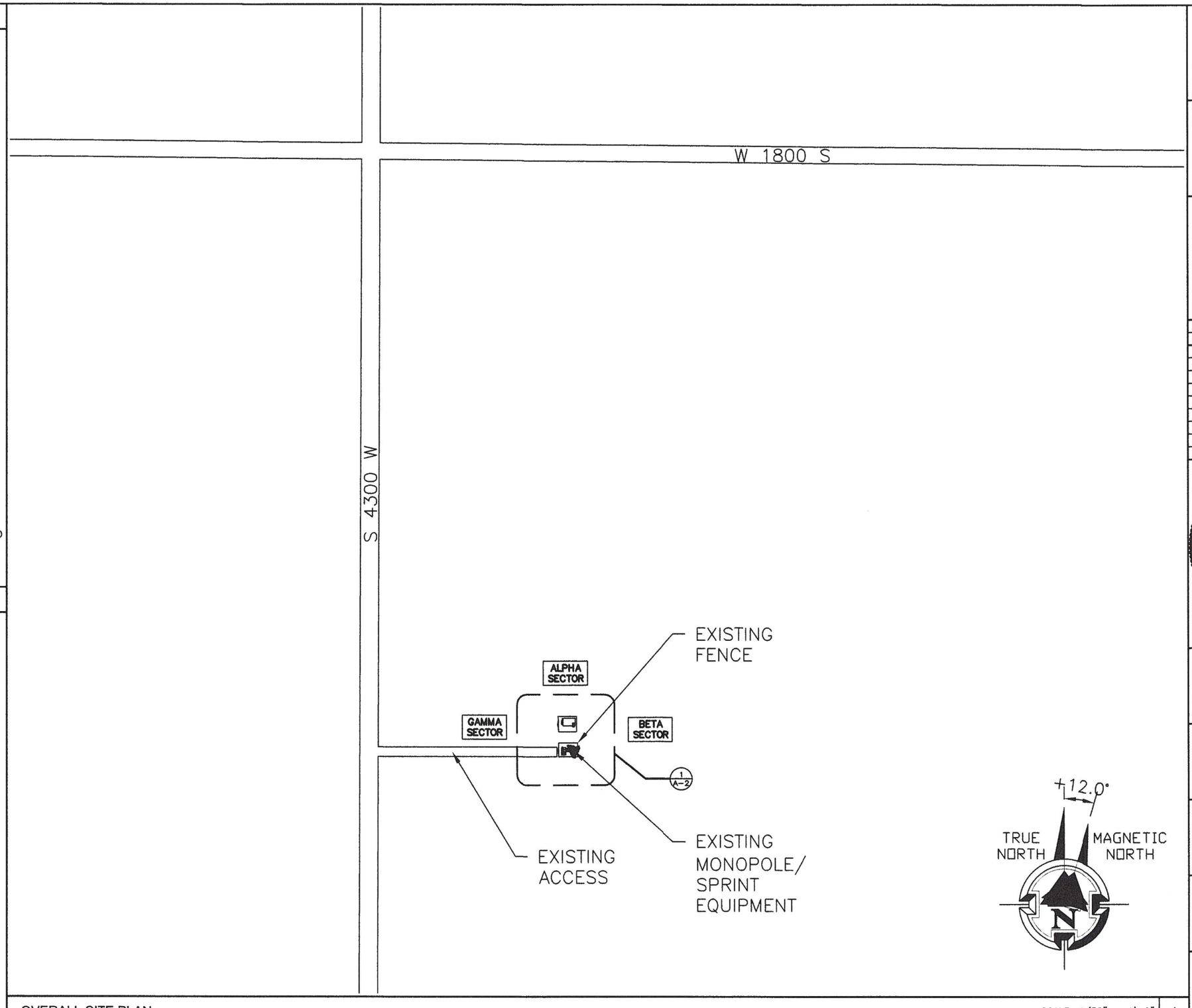
14010

ABBREVIATIONS

A/C	AIR CONDITIONER
AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
CAB	CABINET
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DAP	DIVERSE ACCESS POINT
DWG	DRAWING
FT	FOOT (FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
ELEV	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
(E)	EXISTING
FND	FOUNDATION
GALV	GALVANIZED
GAP	GROUND ACCESS POINT
GND	GROUND
GPS	GLOBAL POSITIONING SYSTEM
IN	INCH(ES)
LB (#)	POUND(S)
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
(N)	NEW
NEC	NATIONAL ELECTRICAL CODE
NOM	NOMINAL
NTS	NOT TO SCALE
NV	NERTWORK VISION
OE/OT	OVERHEAD ELECTRIC/TELCO
POS	POSITION
RGS	RIGID GALVANIZED STEEL
RRU	REMOTE RADIO UNIT
SF	SQUARE FOOT
STL	STEEL
T & B	TOP & BOTTOM
T/	TOP
TBD	TO BE DETERMINED
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS

- REVISION
- WORK POINT
- UTILITY POLE
- BRICK
- COMPRESSED STONE
- CONCRETE
- EARTH
- GRAVEL
- MASONRY
- STEEL
- CENTERLINE
- PROPERTY LINE
- LEASE LINE
- EASEMENT LINE
- FENCE
  - CHAINLINK
  - WOOD
  - WROUGHT IRON
- ELECTRIC
  - OVERHEAD
  - UNDERGROUND
- FIBER
  - OVERHEAD
  - UNDERGROUND
- TELEPHONE
  - OVERHEAD
  - UNDERGROUND
- DCPOWER
- SECTION REFERENCE



OVERALL SITE PLAN

SCALE: 1/32" = 1'-0" | 1

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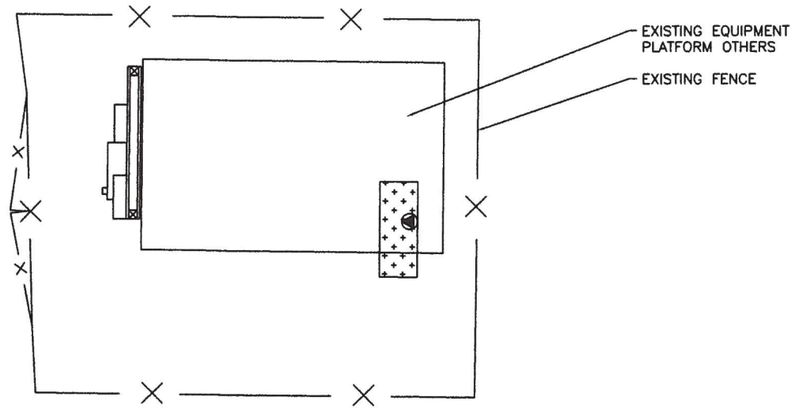
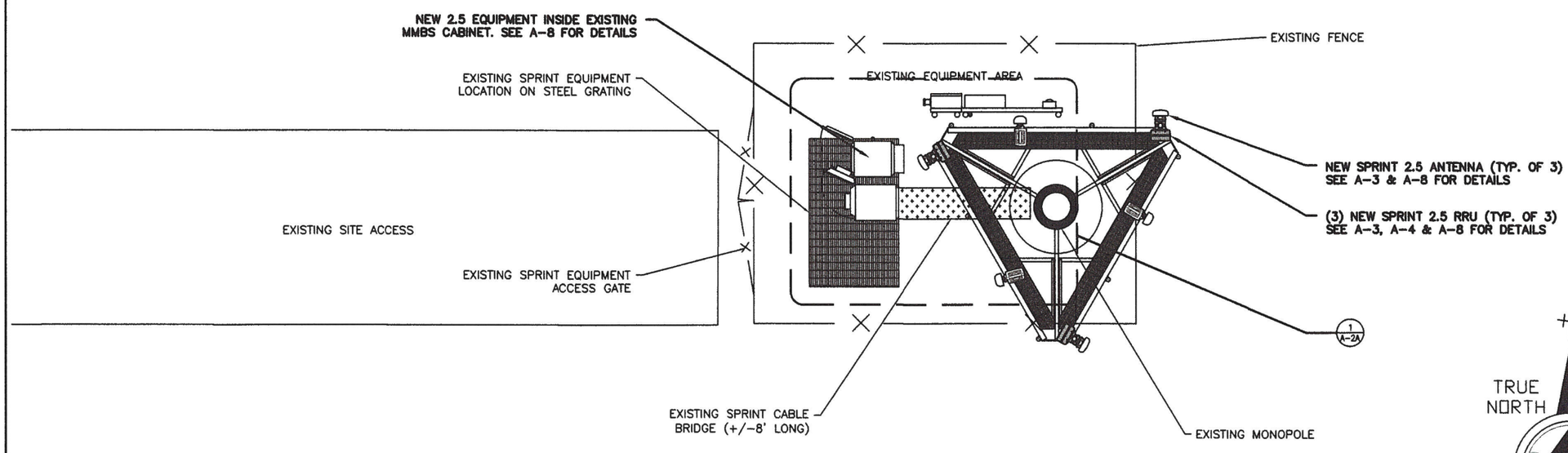
OGDEN, UT 84315

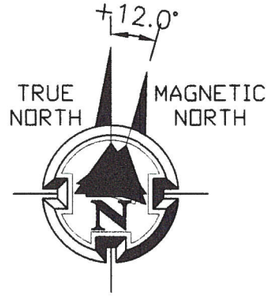
SHEET NAME
OVERALL SITE PLAN

SHEET NUMBER
A-1

14010







ENLARGED SITE PLAN

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

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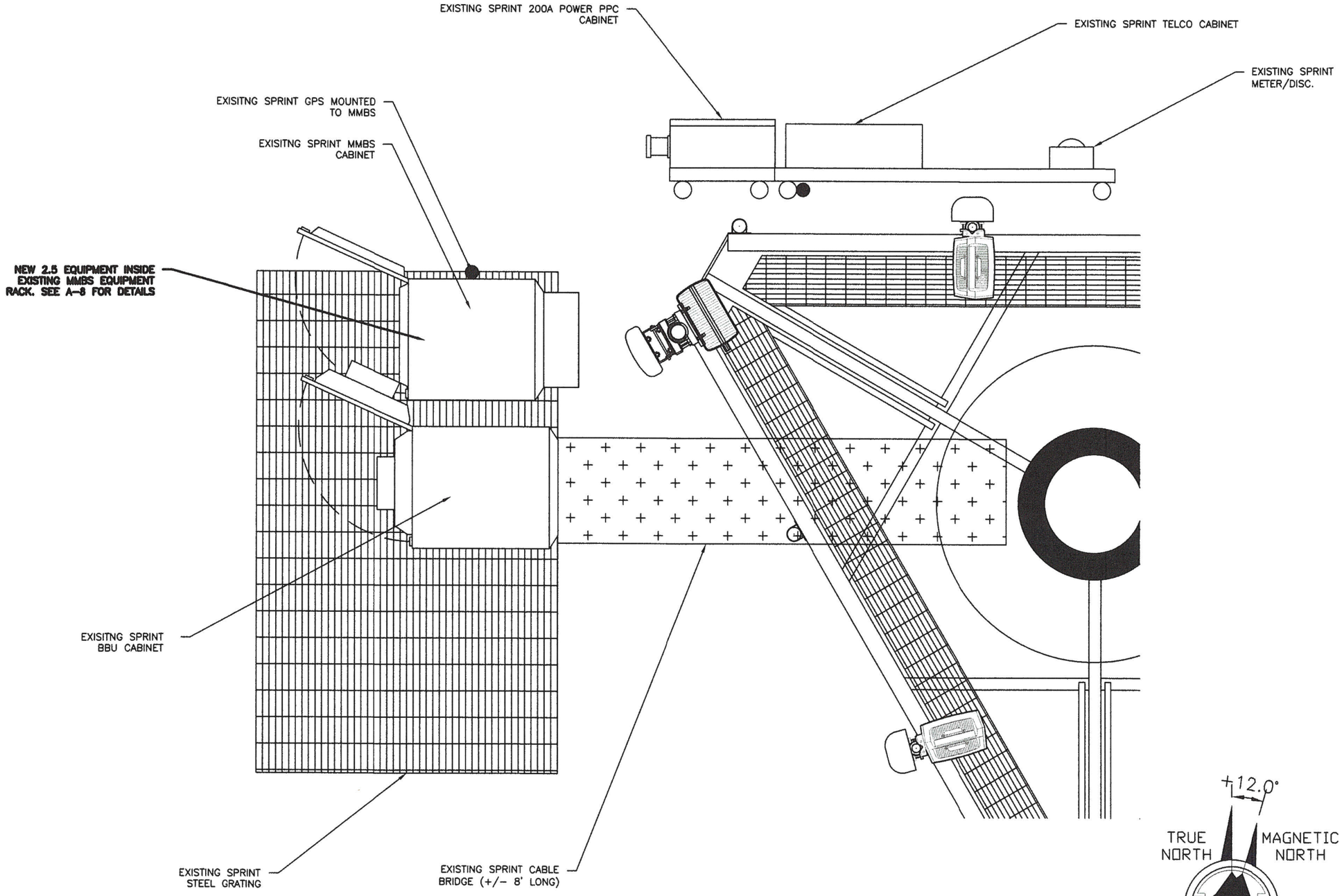
OGDEN, UT 84315

SHEET NAME
ENLARGED SITE PLAN

SHEET NUMBER
A-2

14010



FINAL EQUIPMENT LAYOUT

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

2

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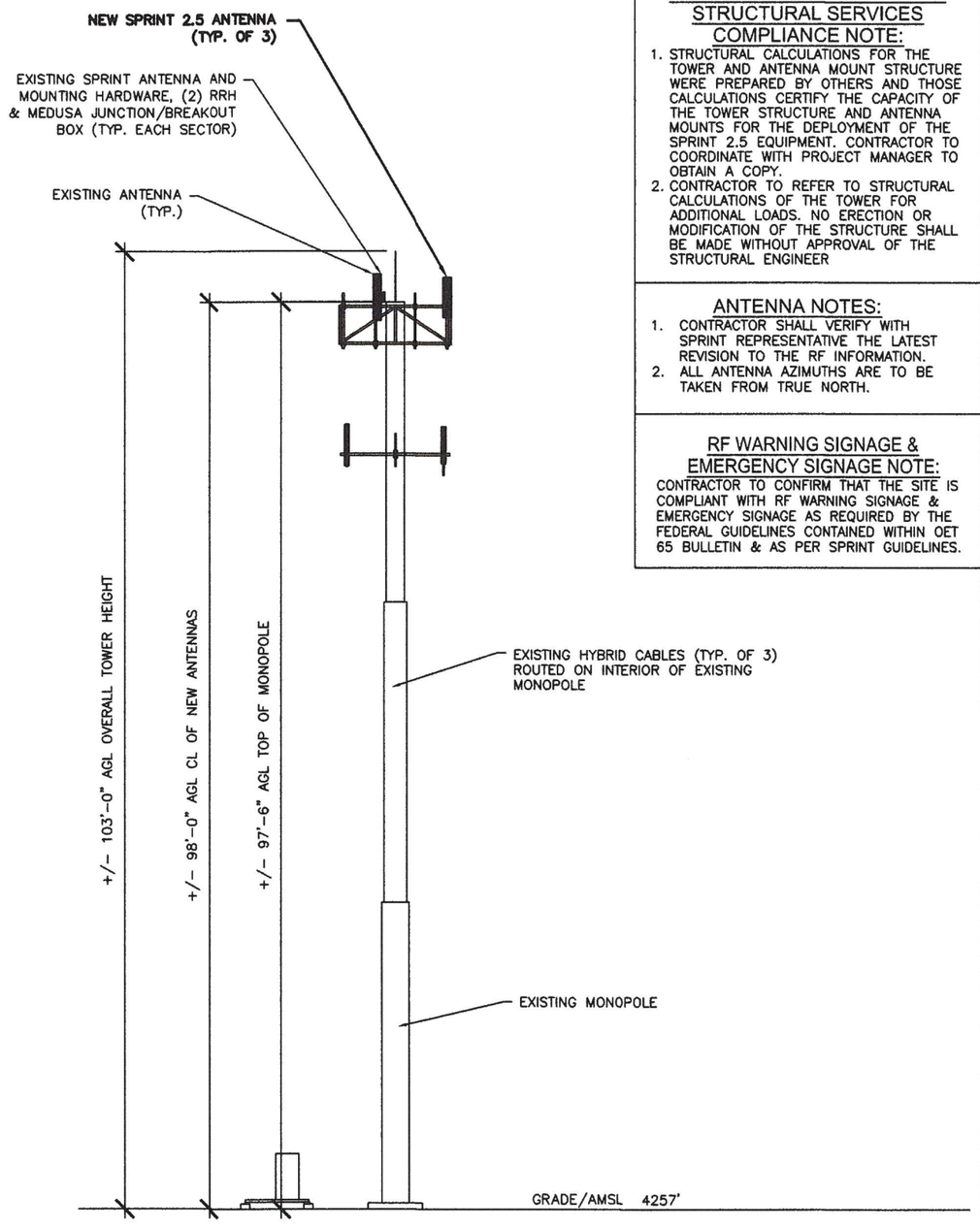
SHEET NAME
EQUIPMENT LAYOUT

SHEET NUMBER
A-2A

14010



SITE ELEVATION — SCALE: N.T.S. | 1

STRUCTURAL NOTES/SPRINT STRUCTURAL SERVICES COMPLIANCE NOTE:

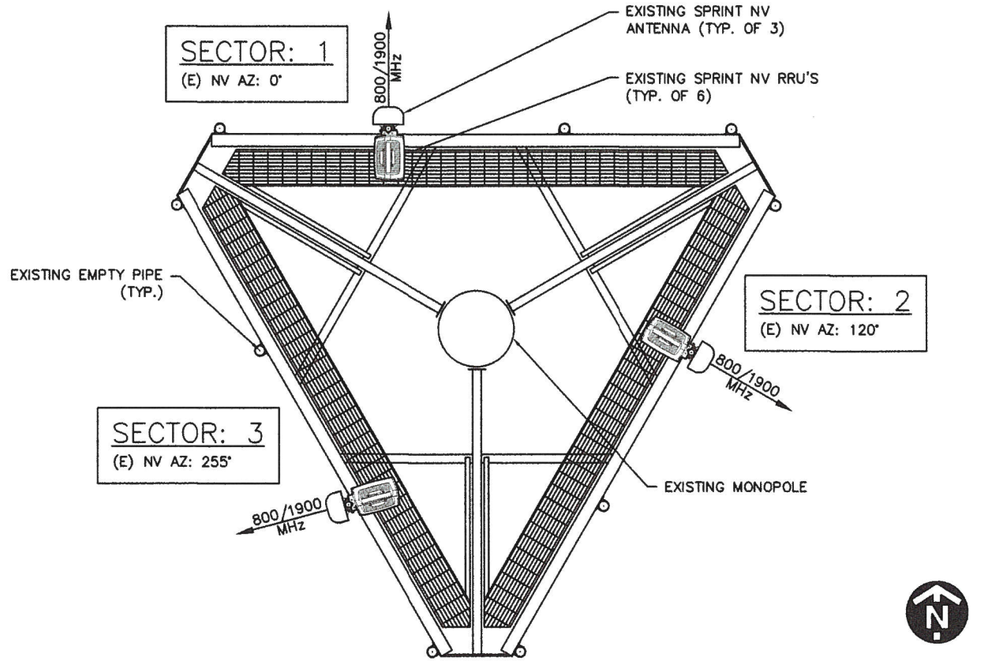
1. STRUCTURAL CALCULATIONS FOR THE TOWER AND ANTENNA MOUNT STRUCTURE WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE TOWER STRUCTURE AND ANTENNA MOUNTS FOR THE DEPLOYMENT OF THE SPRINT 2.5 EQUIPMENT. CONTRACTOR TO COORDINATE WITH PROJECT MANAGER TO OBTAIN A COPY.
2. CONTRACTOR TO REFER TO STRUCTURAL CALCULATIONS OF THE TOWER FOR ADDITIONAL LOADS. NO ERECTION OR MODIFICATION OF THE STRUCTURE SHALL BE MADE WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER

ANTENNA NOTES:

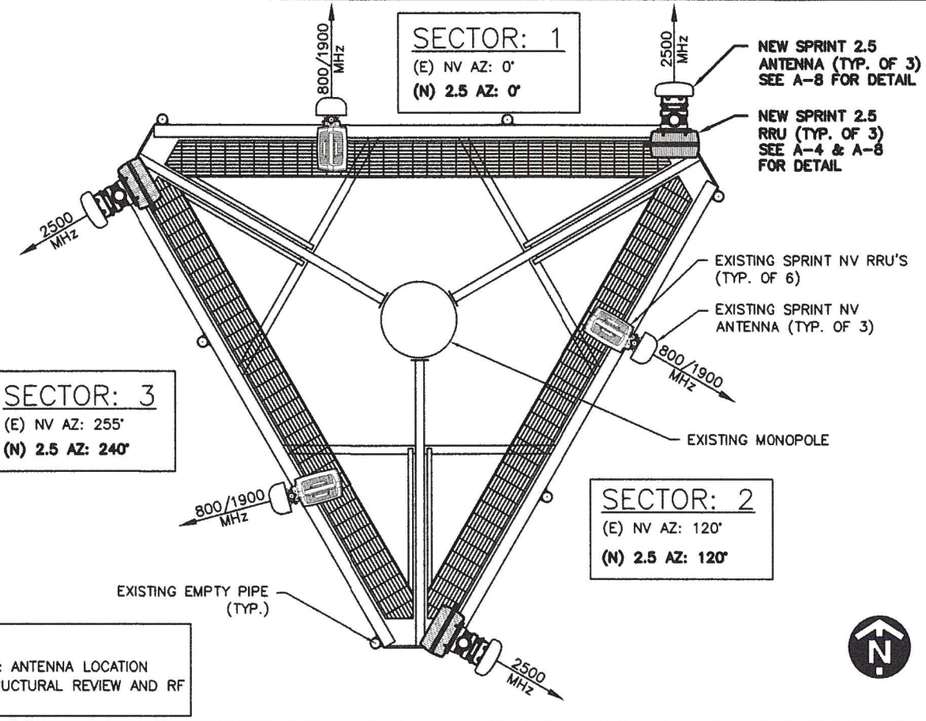
1. CONTRACTOR SHALL VERIFY WITH SPRINT REPRESENTATIVE THE LATEST REVISION TO THE RF INFORMATION.
2. ALL ANTENNA AZIMUTHS ARE TO BE TAKEN FROM TRUE NORTH.

RF WARNING SIGNAGE & EMERGENCY SIGNAGE NOTE:

CONTRACTOR TO CONFIRM THAT THE SITE IS COMPLIANT WITH RF WARNING SIGNAGE & EMERGENCY SIGNAGE AS REQUIRED BY THE FEDERAL GUIDELINES CONTAINED WITHIN OET 65 BULLETIN & AS PER SPRINT GUIDELINES.



EXISTING ANTENNA & RRU LAYOUT — SCALE: N.T.S. | 2



NOTE:
FINAL RRU & ANTENNA LOCATION PENDING STRUCTURAL REVIEW AND RF APPROVAL

FINAL ANTENNA & RRU LAYOUT — SCALE: N.T.S. | 3

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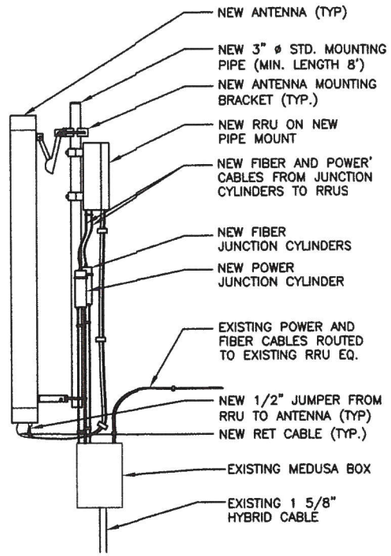
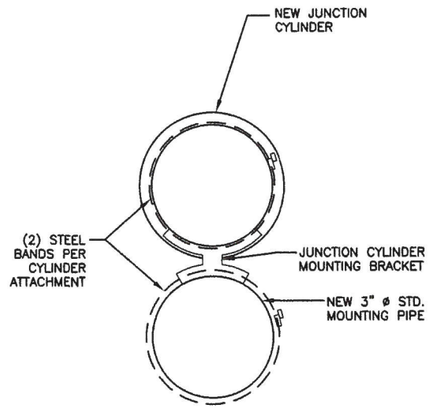
SHEET NAME
TOWER ELEVATION & ANTENNA LAYOUT

SHEET NUMBER
A-3

14010



FOR EXACT SIZES OF EQUIPMENT TO NEW ANTENNA & NEW RRU SEE A-8



JUNCTION CYLINDER MOUNTING
(TYP OF 2)
PLAN VIEW

ANTENNA, RRU AND JUNCTION CYLINDER MOUNTING DETAIL — SCALE: N.T.S. | 1

NOT USED — SCALE: N.T.S. | 2

NOT USED — SCALE: N.T.S. | 3

NOT USED — SCALE: N.T.S. | 4

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OGDEN, UT 84315

SHEET NAME
SITE DETAILS

SHEET NUMBER
A-4

14010

RFDS Sheet

General Site Information

Site ID	SL03XC124
Market	Utah
Region	West
MLA	Crown
Structure	MONOPOLE
BTS Type	STANDARD

Equipment Vendor	Samsung
Latitude	41.23246
Longitude	-112.08145
LL SITE ID	880529

Transmit	2496 Mhz - 2690 Mhz
Receive	2496 Mhz - 2690 Mhz

Siterra SR Equipment type	Outdoor Macro
Equipment Vendor	Samsung

Incremental Power Draw needed by added Equipment: 0

Base Equipment

BBU Kit	UADU
BBU Kit Qty	1
BBU Dimensions	3.5" x 17.1" x 15.2"
Growth Cabinet	
Growth Cabinet Qty	
Growth Cabinet Dimensions	
Growth Cabinet Weight	

Top Hat	
Top Hat Qty	
Top Hat Dimensions	
Top Hat Weight (lbs)	

RF Path Information

RRH	RRH-V3
RRH Qty	3
RRH Dimensions	15.5" x 18.6" x 7.48"
RRH Weight. lbs.	54
RRH Mount Weight. lbs.	12.32
Power and Fiber Cable	None. Bi-Wire Solution derived from existing Hybrid cable
Cable Qty	NA
Weight per foot. Lbs.	NA
Diameter. Inches.	NA
Length Ft.	120 (calculated as antenna height plus 20%)
Coax Jumper	
Coax Jumper Qty	27
Coax Jumper Length. Feet.	6
Coax Jumper Weight	TBD
Coax Jumper Diameter. Inches	0.5
AISG Cable	Commscope ATCB-B01-006
AISG Cable Qty	3
AISG Diameter. Inches.	0.315
AISG Cable length.	8
Weight of entire AISG cable. Lbs.	1.3

Antenna Sector Information

	Sector 1	Sector 2	Sector 3
Antenna make/model	KMW ET-X-WM-18-65-8P	KMW ET-X-WM-18-65-8P	KMW ET-X-WM-18-65-8P
Antenna qty	1	1	1
Antenna Dimensions. Inches	61" x 12" x 4"	61" x 12" x 4"	61" x 12" x 4"
Antenna Weight. Inches	36	36	36
Antenna Mounting Kit Weight. Lbs	~11 lb estimate. TBD.	~11 lb estimate. TBD.	~11 lb estimate. TBD.
CL Height	100	100	100
Antenna Azimuth	0	120	240
Antenna Mechanical Downtilt	0	0	0
Antenna etilt	-2	-2	-2

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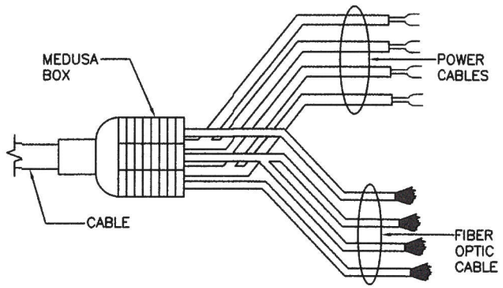
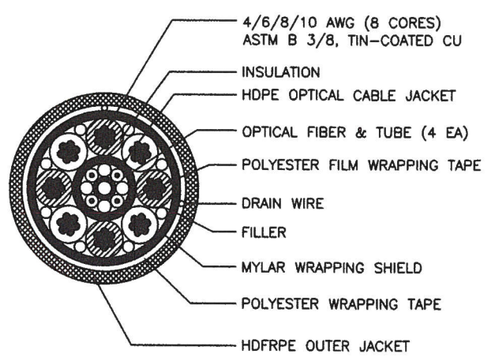
OGDEN, UT 84315

SHEET NAME
RF DATA SHEET

SHEET NUMBER
A-5

14010



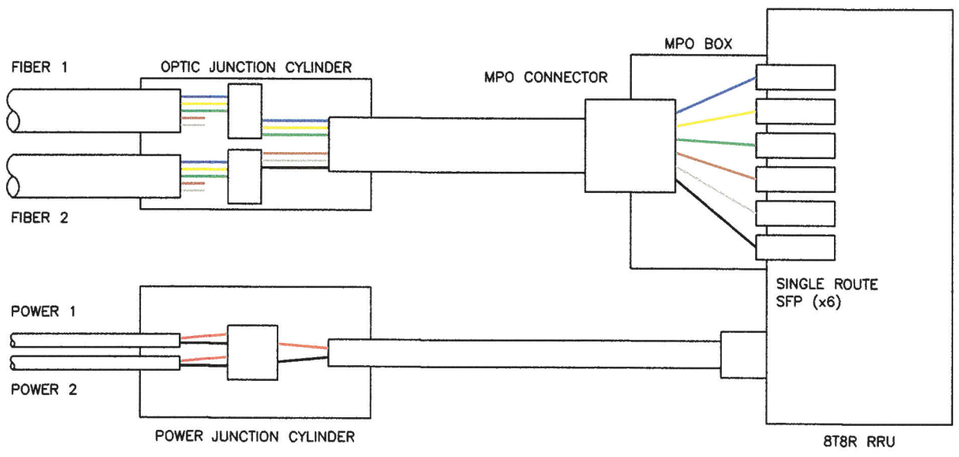


CABLE BENDING RADIUS
20 x CABLE DIAMETER (DURING OPERATION)
25 x CABLE DIAMETER (DURING INSTALLATION)
1.2 LB PER FT CABLE WEIGHT

	TYPE 1	TYPE 1	TYPE 1
TOTAL LENGTH	~40m	~70m	~120m
HYBRID POWER CABLE CONFIGURATION	AWG 8 1 PAIR, AWG 10 3 PAIR	AWG 6 1 PAIR, AWG 8 3 PAIR	AWG 4 1 PAIR, AWG 6 3 PAIR
CABLE DIAMETER	32 mm	32 mm	36 mm
BENDING RADIUS	800 mm	800 mm	800 mm
OPTIC CABLE	LC/PC-TO-LCPC SINGLE MODE	LC/PC-TO-LCPC SINGLE MODE	LC/PC-TO-LCPC SINGLE MODE
RRU POWER CABLE SPEC	AWG 10, 4 PAIR	AWG 10, 4 PAIR	AWG 10, 4 PAIR
NON USE POWER AND OPTIC CABLE PROTECTION	2 PAIR POWER AND OPTIC CABLE WITH PE PIPE	2 PAIR POWER AND OPTIC CABLE WITH PE PIPE	2 PAIR POWER AND OPTIC CABLE WITH PE PIPE

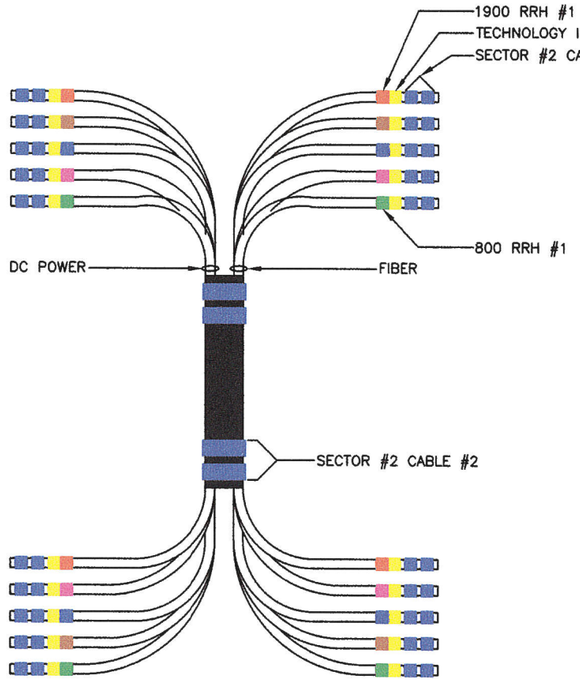
HYBRID CABLE — SCALE: N.T.S. — 1

FUNCTIONAL DIAGRAM

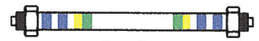


CYLINDER SCHMATIC DETAIL — SCALE: N.T.S. — 2

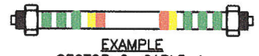
TECHNOLOGY COLOR CODE	FIRST RING	SECOND RING
800 #1	YELLOW	GREEN
1900 #1	YELLOW	RED
1900 #2	YELLOW	BROWN
1900 #3	YELLOW	BLUE
1900 #4	YELLOW	GREY
800 #1	YELLOW	ORANGE
2500 #1	YELLOW	WHITE
2500 #2	YELLOW	PURPLE



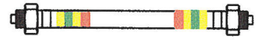
EXAMPLE
SECTOR 2 AND CABLE 2
(800Mhz Radio #1)



EXAMPLE
SECTOR 3, CABLE 1,
(1900Mhz RADIO #1)



EXAMPLE
SECTOR 2, CABLE 4,
(800Mhz RADIO #1 AND 190Mhz RADIO #1)



2500MHz RADIO CALIBRATION CABLE COLOR CODE

2500MHz #1 CAL CABLE - SECTOR	CABLE	FIRST RING	SECOND RING	THIRD RING	FOURTH 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	FOURTH 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

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COLOR CODING — SCALE: N.T.S. — 3

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REGISTERED PROFESSIONAL ARCHITECT
No. 117557
Thomas G. Smith
STATE OF UTAH

SIGNED DATE: 02/05/14

SITE NAME
CARL FAVERO

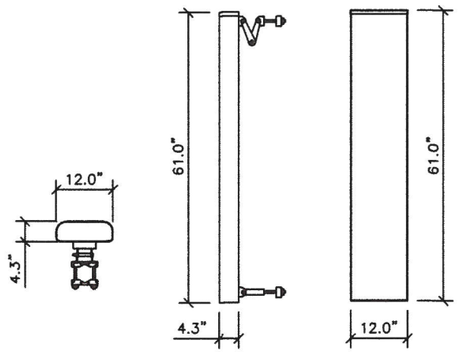
SITE I.D.
SL03XC124
880529

SITE ADDRESS
1820 SOUTH 4300 WEST
OGDEN, UT 84315

SHEET NAME
CABLE AND COLOR CODING

SHEET NUMBER
A-7

14010



PLAN VIEW SIDE VIEW FRONT VIEW

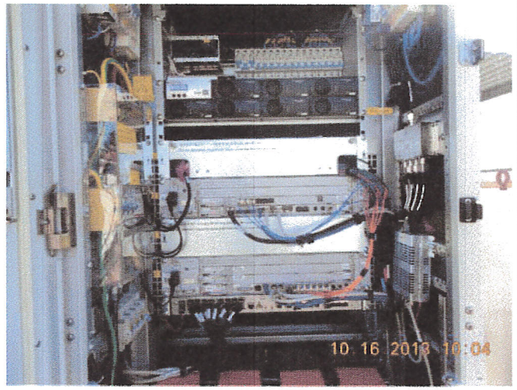
KMW – ET-X-WM-18-65-8P

(EDTA) ELECTRICAL DOWNTILT ANTENNA

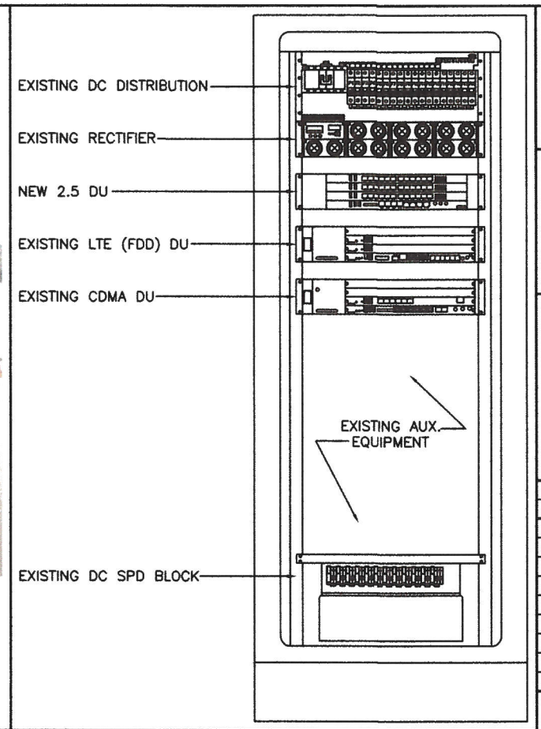
FREQUENCY RANGE	2496–2690 MHz
ANTENNA WEIGHT	36.4 Lbs
BRACKET WEIGHT	11.6 Lbs
TOTAL WEIGHT	48 Lbs

ANTENNA SPEC SCALE: 3/8" = 1'-0" 1

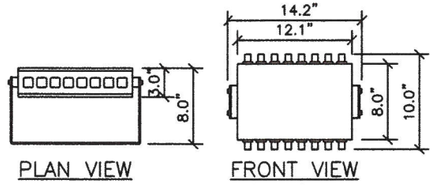
NOT USED SCALE: N.T.S. 2



EXISTING MMBS CABINET SCALE: N.T.S. 3



EXISTING MMBS CABINET WITH 2.5 EQUIPMENT SCALE: N.T.S. 4



PLAN VIEW FRONT VIEW

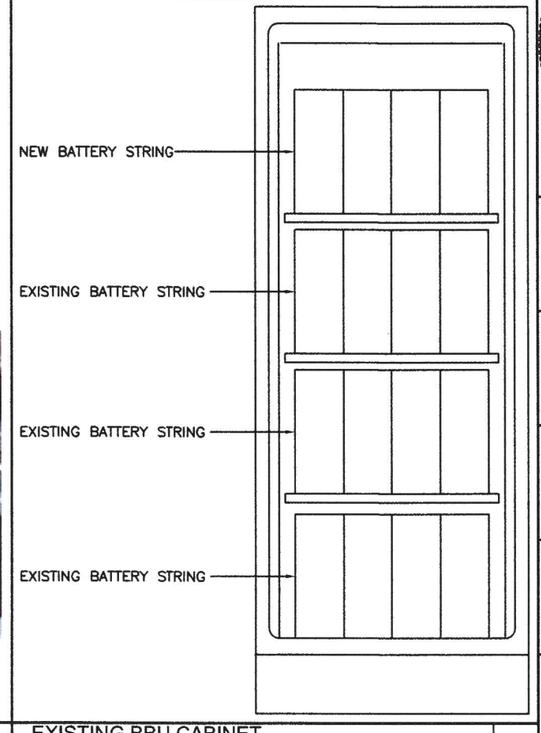
SAMSUNG – 2.5G8T8R RADAR FILTER

FREQUENCY RANGE	2496–2690 MHz
UNIT WEIGHT	22 Lbs

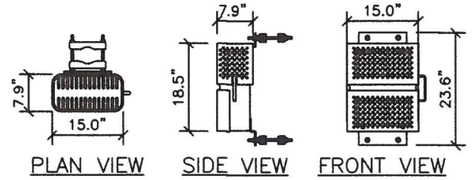
RRU FILTER SPEC SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 7

EXISTING BBU CABINET SCALE: N.T.S. 9



EXISTING BBU CABINET FOR 2.5 EQUIPMENT SCALE: N.T.S. 10

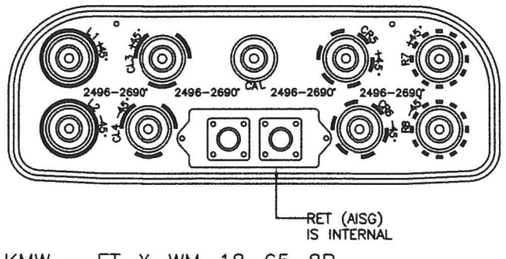


PLAN VIEW SIDE VIEW FRONT VIEW

SAMSUNG – RRH-V3

FREQUENCY RANGE	2500 MHz
UNIT WEIGHT	59.5 Lbs
RRH BRACKET WEIGHT	12.32 Lbs
TOTAL WEIGHT	71.82 Lbs

RRU SPEC SCALE: 3/8" = 1'-0" 6



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PORT LAYOUT SCALE: N.T.S. 8

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EQUIPMENT DETAILS

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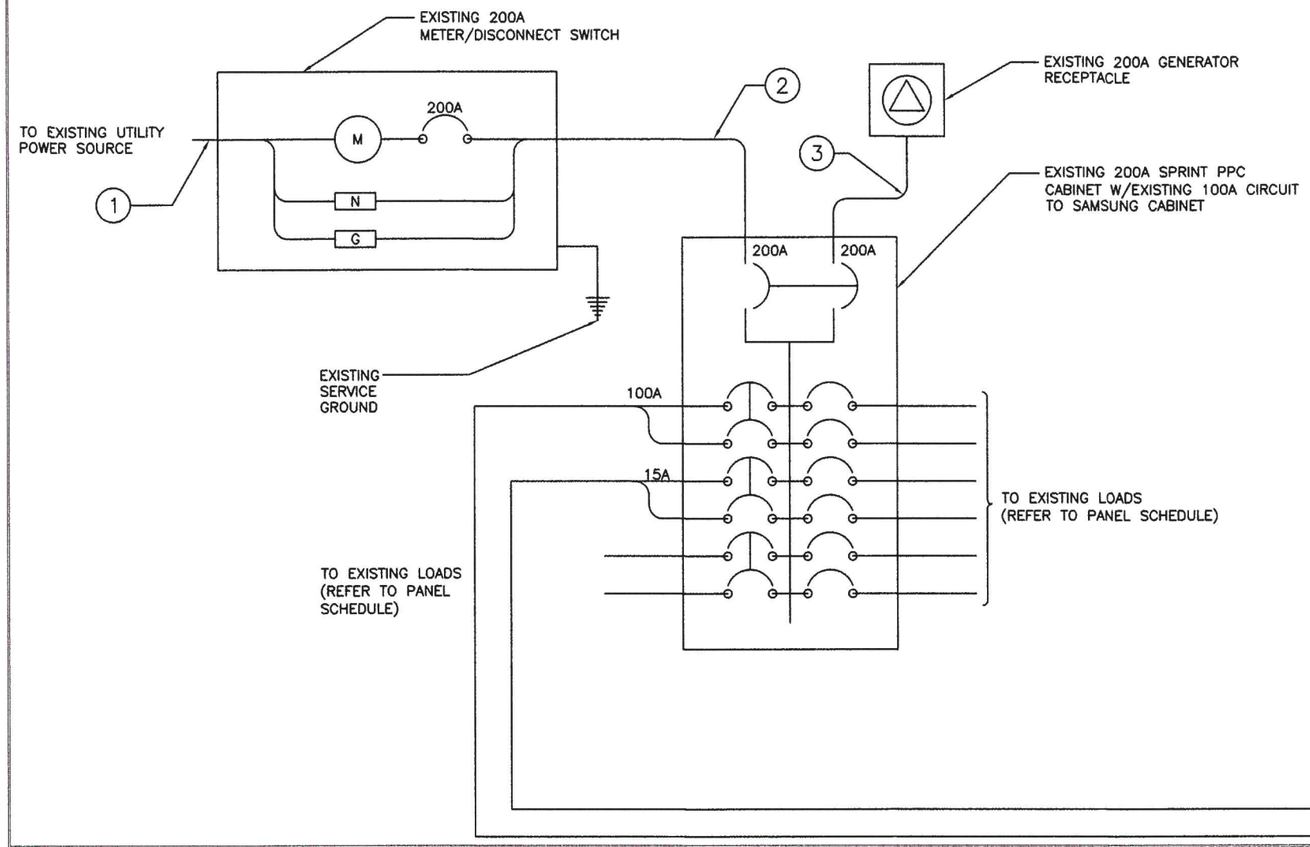
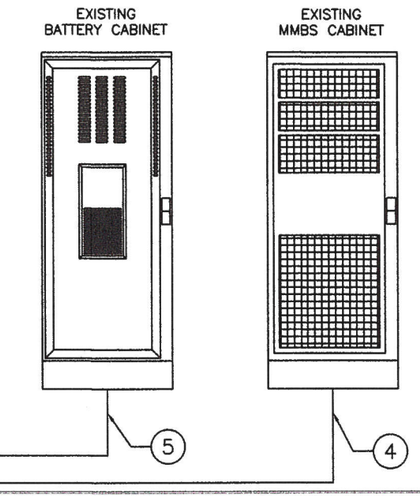


CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	EXISTING MMBS CABINET	EXISTING
5	TRANSFER & LOAD CENTER	EXISTING BATTERY CABINET	EXISTING



ELECTRICAL ONE-LINE DIAGRAM — SCALE: N.T.S. | 1

ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL LOCAL AND STATE CODE, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
2. CONTRACTOR SHALL COORDINATE WITH LOCAL POWER COMPANY FOR REQUIREMENTS OF POWER SERVICE LINE TO THE METER BASE. POWER SERVICE REQUIREMENT IS COMMERCIAL AC NOMINAL 120/208 VOLT OR 120/240 VOLT, SINGLE PHASE WITH 200 AMP RATING.
3. CONTRACTOR SHALL COORDINATE WITH LOCAL TELEPHONE COMPANY FOR REQUIREMENTS OF "T1" SERVICE LINE TO TERMINATE AT THE PPC CABINET.
4. UNDERGROUND POWER AND TELCO SERVICE LINES SHALL BE ROUTED IN A COMMON TRENCH. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 AND CONDUIT EXPOSED ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE INDICATED.
5. ALL TELCO CONDUIT LINES SHALL BE 4" SCH. 40 PVC CONDUIT UNLESS OTHERWISE INDICATED. THE TELCO CONDUIT FROM THE PPC SHALL BE ROUTED AND TERMINATED AT DESIGNATED TELCO DEMARCATION OR 2-FEET OUTSIDE FENCED AREA, NEAR UTILITY POLE (IN FENCED AREA), OR END CAP OFF AND PROVIDE MARKER STAKE PAINTED BRIGHT ORANGE WITH DESIGNATION FOR TELCO SERVICE.
6. CONDUITS INSTALLED AT PCS EQUIPMENT ENDS PRIOR TO THE EQUIPMENT INSTALLATION SHALL BE STUBBED AND CAPPED AT 6" ABOVE GRADE OR PLATFORM. IF SERVICE LINES CAN'T BE INSTALLED INITIALLY, PROVIDE NYLON PULL CORD IN CONDUITS.
7. THE SPRINT CABINET, INCLUDING 200 AMP LOAD PANEL AND TELCO PANEL, SHALL BE PROVIDED BY OWNER AND INSTALLED BY THE CONTRACTOR. CONTRACTOR IS TO INSTALL BREAKER(S) NOT PROVIDED BY MANUFACTURER. SEE PANEL SCHEDULE ON THIS SHEET FOR BREAKER REQUIREMENTS.
8. LOCATION OF ELECTRIC METER AND DISCONNECT SWITCH TO BE COORDINATED BY ELECTRICAL CONTRACTOR AND FIELD CONSTRUCTION MANAGER.
9. #2 WIRE TO BE UTILIZED IN ELECTRIC SERVICE RUNS EXCEEDING 100'.
10. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
11. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
12. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
13. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
14. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.
15. ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
16. ALL WIRE SHALL BE TYPE THWN, SOLID, ANNEALED COPPER UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75 DEGREE C, (167 DEGREES F), 98% CONDUCTIVITY, MINIMUM #12.
17. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.
18. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
19. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
20. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
21. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
22. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
23. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS.)
24. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.
25. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
26. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS).
27. LOCATION OF ALL OUTLET, BOXES, ETC., AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
28. SPLIT BREAKERS SHALL BE USED ON 120V LOADS IN THE EVENT THAT ADDITIONAL CIRCUIT SPACE IS REQUIRED FOR NEW EQUIPMENT.
29. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENT ON E-1 REFLECTS MIGRATION PERIOD CIRCUMSTANCES. REFER TO E-4 FOR POST-MIGRATION PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENT IN WHICH EXISTING LEGACY EQUIPMENT HAS BEEN REMOVED.

ELECTRICAL NOTES — SCALE: N.T.S. | 2

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SHEET NAME
AC POWER DISTRIBUTION

SHEET NUMBER
E-1

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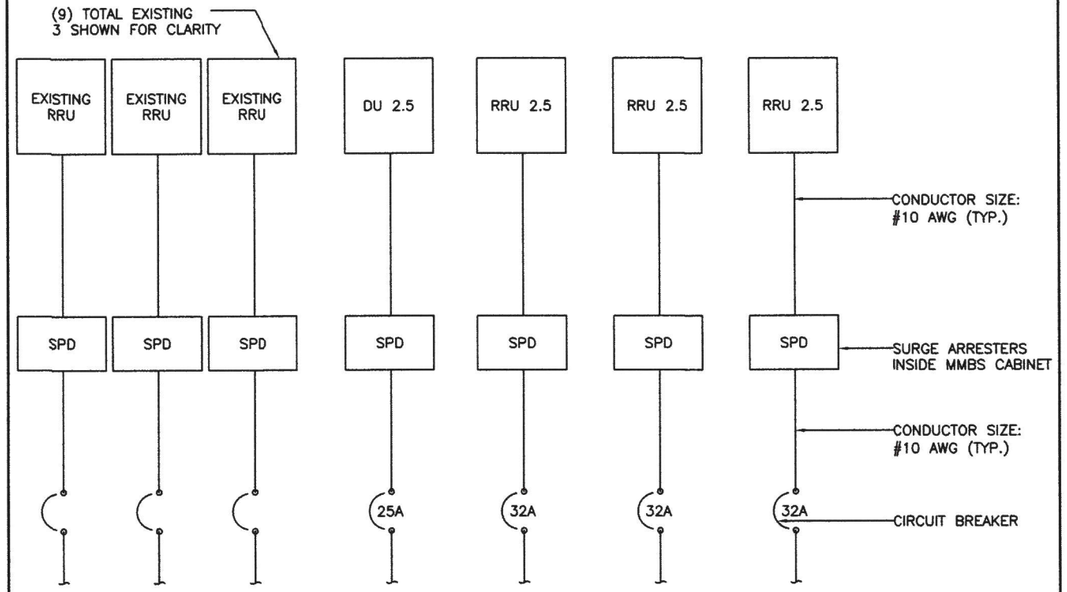
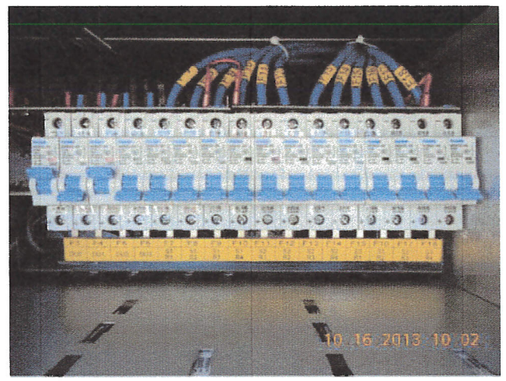
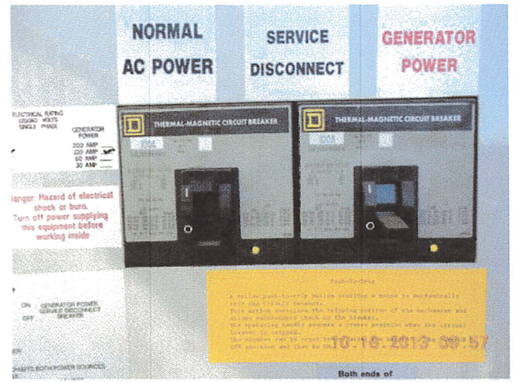


DC ONE LINE DIAGRAM SCALE: N.T.S. | 1



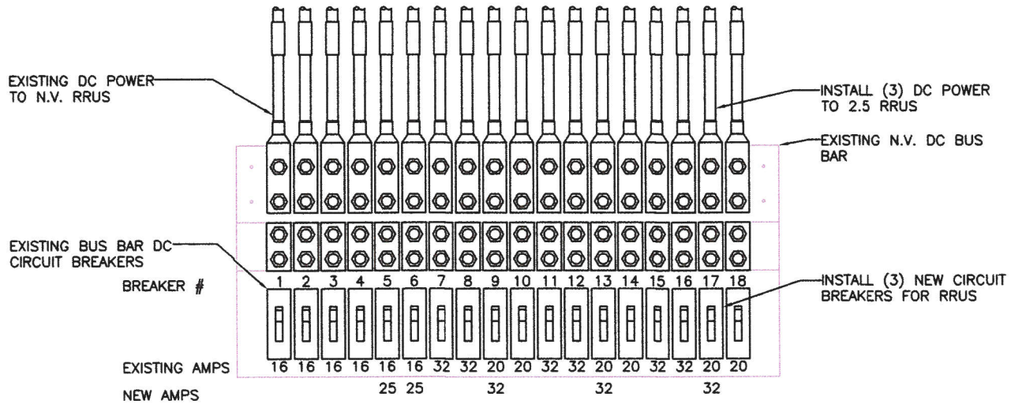
EXISTING DC POWER DISTRIBUTION SCALE: N.T.S. | 2



EXISTING AC PANEL SCALE: N.T.S. | 3

NOTE:
-(2) DU BREAKERS TO BE UPGRADED FROM 16A TO 25A

-(3) RRU BREAKERS TO BE UPGRADED FROM 20A TO 32A



TYPICAL DC POWER DISTRIBUTION SCALE: N.T.S. | 4

AC PANEL SCHEDULE SCALE: N.T.S. | 5

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SHEET NAME
AC & DC POWER DISTRIBUTION & SCHEDULE

SHEET NUMBER
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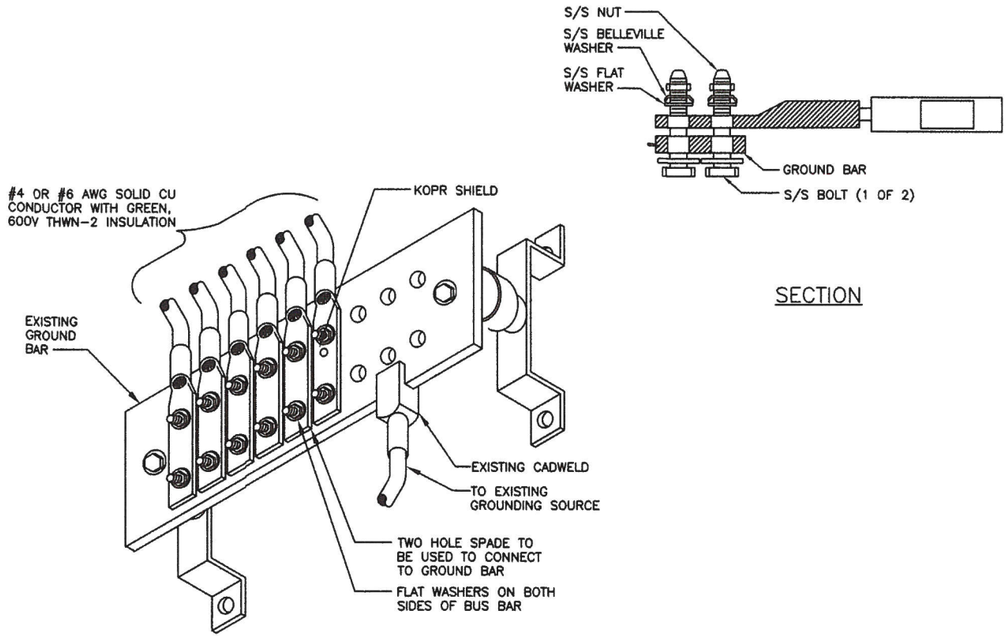
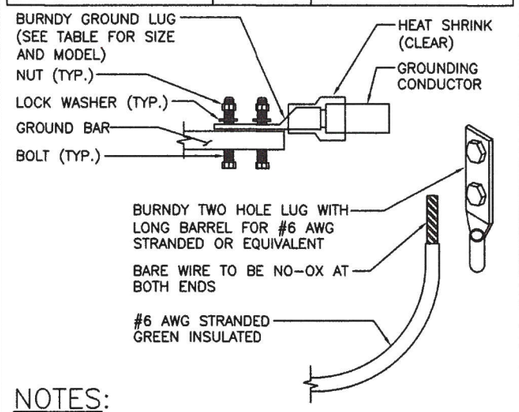


SECTION

GROUNDING CONNECTION DETAIL — SCALE: N.T.S. — 1

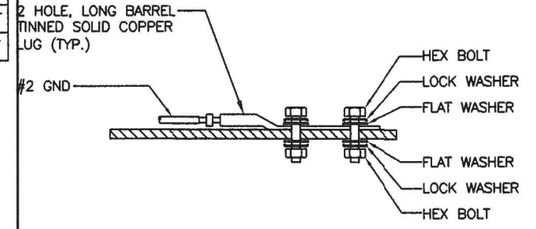
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.
2. COPPER SHIELD, ANTIOX, CR NO-OX OR EQUIVALENT SHALL BE PLACE WHERE ALL DISSIMILAR METALS CONNECT.
3. ALL LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

MECHANICAL CONNECTION LUG — SCALE: N.T.S. — 2



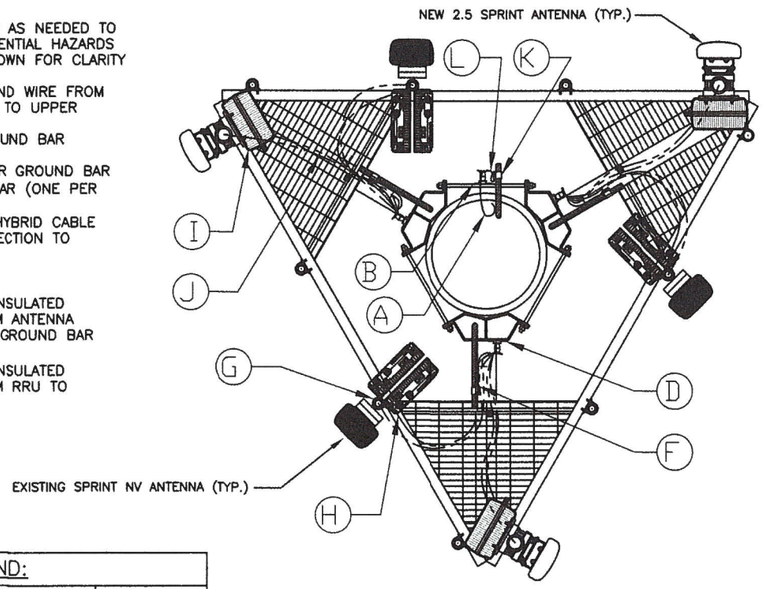
INSTALLATION NOTES:

1. BOLTS, WASHERS AND NUTS SHALL BE STAINLESS STEEL
2. SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS
3. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT.
4. APPLY COOPER-SHIELD COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.
5. ALL METAL ELECTRICAL EQUIPMENT SHALL BE EXTERNALLY GROUNDED. (PAINTED METAL SURFACES MUST HAVE SMALL SECTION OF PAINT REMOVED BEFORE INSTALLATION AND SHALL BE SPRAYED LIGHTLY WITH CLEAR COAT LACQUER FINISH)

FLAT SURFACE GROUNDING (TYP.) — SCALE: N.T.S. — 3

LEGEND:

- A. EXISTING CONTINUOUS GROUND WIRE FROM LOWER TOWER GROUND BAR TO UPPER TOWER GROUND BAR
- B. EXISTING UPPER TOWER GROUND BAR ATTACHED TO TOWER
- C. EXISTING GROUND TO SECTOR GROUND BAR
- D. EXISTING SECTOR GROUND BAR (ONE PER SECTOR)
- E. EXISTING GROUND KIT FOR HYBRID CABLE
- F. EXISTING GROUND KIT CONNECTION TO SECTOR GROUND BAR
- G. EXISTING PIPE GROUND
- H. EXISTING RRU GROUNDING
- I. NEW #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FROM ANTENNA MOUNTING PIPE TO SECTOR GROUND BAR (ONE PER PIPE)
- J. NEW #2 GREEN STRANDED INSULATED COPPER GROUND WIRE FROM RRU TO SECTOR GROUND BAR



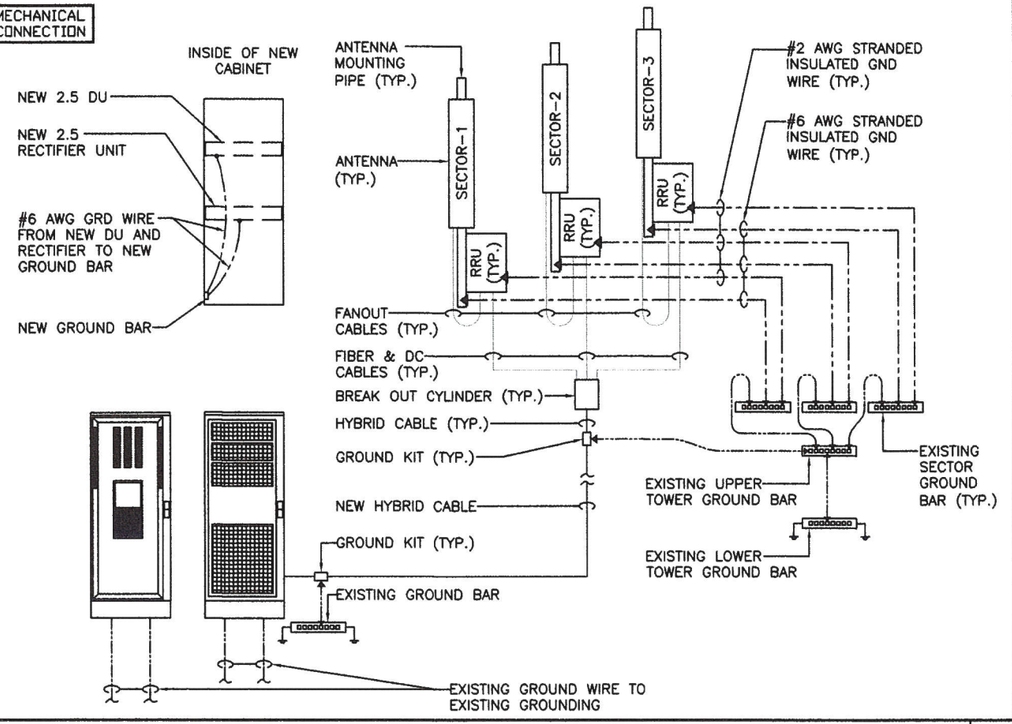
LEGEND:

	NV ANTENNA	2.5 ANTENNA
GROUND WIRE MECHANICAL CONNECTION EXOTHERMIC CONNECTION		

NOTE:
FOR CORRECT ORIENTATION TO NORTH, SEE DWG. A-2 AND A-4

ANTENNA PLATFORM GROUNDING

▲ MECHANICAL CONNECTION



GROUNDING RISER DIAGRAM — SCALE: N.T.S. — 5

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