TOWN OF CHAPEL HILL
Planning Department

405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514-5705

phone (919) 969-5066 *fax* (919) 969-2014
www.townofchapelhill.org

Community Design Commission
Final Plan Application

This application should be used to submit Final Plan applications to the Community Design Commission including building elevations, site lighting, and alternative buffers. For assistance with this application, please contact the Chapel Hill Planning Department at (919) 969-5066 or at planning@townofchapelhill.org.

Section A: Property Information

Property Address:	1490 Fordham Boulevard, Chapel Hill, NC 27514 Eastgate Mall
Zoning:	WX-7 - Walkable Mixed Use

Type of Application

☒ Building Elevation ☐ Alternative Buffers

Section B: Applicant Information (for contact purposes)

Name:	Sprint by Agent Dewberry Design-Builders Inc. Doug Fulcher				
Address:	2610 Wycliff Road, Suite 410				
City:	Raleigh	State:	NC	Zip Code:	27606
Phone Number:	919-425-7611	Email:	dfulcher@dewberry.com		

The undersigned applicant hereby certifies that: a) the property owner authorizes the filing of this application; b) authorizes on-site review by authorized staff; and c) to the best of their knowledge and belief, all information supplied with this application is true and accurate.

Signature: Douglas Fulcher Date: 1/11/2018

Agent for Sprint
Douglas Fulcher

Parcel Identifier Number (PIN): 9799255527

The Community Design Commission meets regularly on the fourth Tuesday of each month. For confirmation of a meeting date and the placement of your request on the agenda, please contact the Planning Department at (919) 969-5066.

Final Plan Application

Please submit 2 sets of all materials, no later than the fourth Tuesday of the month prior to the meeting by 4 p.m. Materials must be collated and folded to fit into a 12" x 15" envelope. The Application Fee shall be submitted with this Application Form.

DETAILED SUMMARY OF REQUIRED INFORMATION

X	**1. Application fee** (refer to fee schedule)	Amount Paid $ 395
X	**2. Digital files** – provide digital files of all plans and documents	
	3. Approved Site Plan	

The site plan for the development, as approved by the Town Council, or when applicable, the Planning Board, clearly indicating all building footprints, parking areas, sidewalks, and buffers. In particular, the site plan shall clearly indicate the specific buildings that are included in the application for building elevations approval. Finished first floor elevation (height above sea level) information shall also be provided for each building, including any applicable cross section elevation changes.

X **4. Detailed Exterior Building Elevations** – The detailed exterior elevations shall include the following:

a) Detailed Building Elevations

- A detailed list including all materials, textures, and colors for each building. If all buildings are the same, a combined list of materials, texture, and colors is acceptable. All windows, doors, light fixtures, and other appurtenant features must indicate type, style, and color.
- A straight-on, one-dimensional view of each building façade including front, side, and rear elevations.
- Color renderings, sketches, or perspective drawings.

The applicant should bring samples of all colors and materials to the Design Commission Meeting.

b) Cross-Sections

- Provide simple, typical cross-section(s) indicating how the buildings are placed on the site in relationship to topography, public access, existing vegetation, or other significant site features.

c) Floor Plans

- Show the general interior layout of the building (this aids in understanding window locations, etc.) and the relationship of pedestrian circulation and entryways.

d) Other

- Indicate the location of all HVAC, chiller, and/or ventilation units. Show how these units will be screened from the view of any relevant public rights-of-way.

All detailed building elevation plans must be the final versions. Any subsequent elevation modifications or changes in materials, color, etc., must be resubmitted for approval. If the Design Commission makes decisions based on any renderings, sketches, or artists' drawings presented at the meeting, these graphics will become the property of the Town and will need to be submitted for the formal record

N/A **5. Lighting Plans**

a) Site Lighting Plan: A detailed lighting plan for all proposed lighting fixtures on the site (including parking areas, pedestrian paths, building facades, landscape uplighting, etc.). The lighting plan should clearly indicate the locations of all light fixtures. The lighting plan shall also provide isographs with foot-candle and uniform ratios, candlepower of lamps, and types of illumination for all proposed lighting fixtures. The isographs shall be provided for the full extent of the site lighting (to the point where the lighting reaches 0.0 foot-candles), even if this includes off-site areas. The isograph shall be calculated with 100% lighting, and also identify and incorporate a site's topography.

b) Cut Sheets: A detailed drawing and description shall be provided for each type of light fixture proposed on the site. The number, height, colors, and materials for each type of fixture shall be clearly indicated.

Please note that in accordance with Section 5.11 (Lighting Standards) of the Town's Land Use Management Ordinance, lighting sources shall be shielded or arrange so as not to produce, within any public right-of-way, glare that interferes with the safe use of such right-of-way or constitutes a nuisance to the occupants of adjacent properties.

For information on illuminating canopies, please refer to the Community Design Commission's "Design Standards for Canopies," which is available from the Chapel Hill Planning Department.

N/A

6. Alternative Buffer

a) Landscaping Plan: A detailed planting plan, including a plant materials table that indicates the number, size, and spacing for each plant type.

b) Other: If a fence or wall is proposed as part of the alternative buffer, a scaled drawing or rendering shall be submitted, along with a list including all materials, textures, and colors. The applicant should bring samples of such materials to the Design Commission meeting.

Sprint

CUSTOMER PARKING
ONLY
NO COMMUTER OR OVERNIGHT PARKING
- NO LOITERING
- NO SOLICITING
- NO HANDBILLING
UNAUTHORIZED VEHICLES WILL BE TOWED AT OWNERS RISK AND EXPENSE

1490 Fordham Blvd 120

OPEN

120

CHOPT

CREATIVE SA

1490 Fordham Bl 130

KIA

FBZ-8024


Sprint
120

Sprint®

PROJECT: **MINI MACRO**

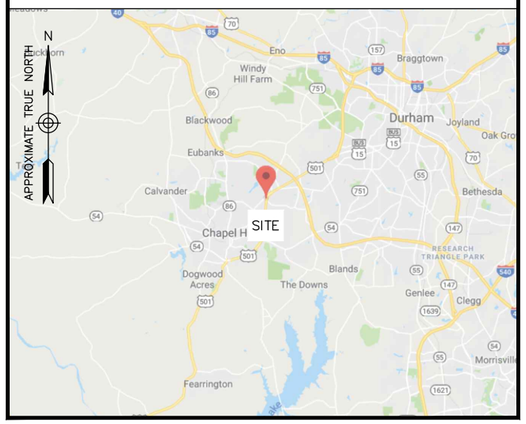
SITE NAME: **CHAPEL HILL**

SITE CASCADE: **RA80XSA01**

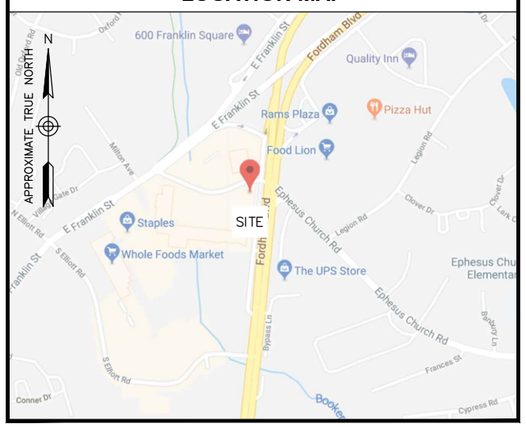
SITE ADDRESS: **1490 FORDHAM BOULEVARD CHAPEL HILL, NC 27514**

SITE TYPE: **ROOFTOP**

VICINITY MAP



LOCATION MAP



SITE INFORMATION

TOWER INFORMATION:

LATITUDE (NAD83):	N 35° 56' 09.90"
LONGITUDE (NAD83):	W 79° 01' 26.70"
ANTENNA CENTERLINE:	21'-3"±
JURISDICTION:	TOWN OF CHAPEL HILL

SITE ADDRESS:

1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

APPLICANT:

SPRINT
4819 EMPEROR BLVD, SUITE 210
DURHAM, NC 27703

PROPERTY OWNER:

FEDERAL REALTY INVESTMENT
ATN M M KENNY DIRECTOR OF FINANCIAL SERVICES
1626 EAST JEFFERSON STREET
ROCKVILLE, MD 20852

PIN#:

9799255527

SPRINT CONTACT:

NAME: MONA HARRIS
PHONE: (919) 238-4106
E-MAIL: MONA.HARRIS-BEST@SPRINT.COM

DEWBERRY ENGINEERS CONTACT:

NAME: XIAO HE
PHONE: (984) 255-7051
E-MAIL: XHE@DEWBERRY.COM

PROJECT DESCRIPTION

- (1) OMNI ANTENNA
- (1) UE RELAY
- (1) GPS ANTENNA
- (1) NON-PENETRATING SLED MOUNT
- (1) 2" ROOF PENETRATION WITH WEATHERHEAD
- (1) NOKIA MINI MACRO BTS
- ASSOCIATED CABLES AND CONDUITS

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH 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 W/ 2012 NORTH CAROLINA AMENDMENTS.
2. TIA-EIA-222-G.
3. NFPA 780 – LIGHTNING PROTECTION CODE.
4. NFPA 70 (2014 NATIONAL ELECTRIC CODE).
5. ANSI/TIA 607-B-COMMERCIAL BUILDING GROUNDING & BONDING REQUIREMENTS FOR TELECOMMUNICATIONS.
6. ANSI T1.333-2001-GROUNDING & BONDING OF TELECOMMUNICATIONS EQUIPMENT.
7. LOCAL BUILDING CODE.
8. CITY/COUNTY ORDINANCES.

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO BE REVIEWED BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

SPRINT: _____ DATE: _____

OWNER: _____ DATE: _____

MUNICIPAL: _____ DATE: _____

SHEET INDEX

North Carolina 811 www.nc811.org

Sprint
4819 EMPEROR BLVD, SUITE 210
DURHAM, NC 27703

SPRINT STORE #105738 (RA80XSA01)

CONSTRUCTION DRAWINGS

0	01/12/18	ISSUED FOR CONSTRUCTION
A	12/20/17	ISSUED FOR REVIEW

Dewberry®
Dewberry Engineers Inc.
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
FAX: 919.881.9923
NCBELS # F-0929

NORTH CAROLINA PROFESSIONAL SEAL 044507 ENGINEER JESSICA E. JONES 1-12-18

DRAWN BY:	XH
REVIEWED BY:	DPF
CHECKED BY:	JEJ
PROJECT NUMBER:	50096394
JOB NUMBER:	50096726
SITE ADDRESS:	

1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:

TITLE SHEET

SHEET NUMBER:

T-1

2012 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: RA80XSA01

Address: 1490 FORDHAM BOULEVARD, CHAPEL HILL, NC **Zip Code:** 27514

Proposed Use: TELECOMMUNICATIONS EQUIPMENT

Owner/Authorized Agent: SPRINT **Phone #:** (919) 238-4106 **E-Mail:** ROBERT.BACON@SPRINT.COM

Owned By: ☐ City/ County ■ Private ☐ State

Code Enforcement Jurisdiction: ■ City CHAPEL HILL ☐ County _____ ☐ State

LEAD DESIGN PROFESSIONAL:

DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE#
Architectural	N/A	---	---	---
Civil	DEWBERRY ENGINEERS INC.	JESSICA E. JONES, PE	044507	919.424.3736
Electrical	N/A	---	---	---
Fire Alarm	N/A	---	---	---
Plumbing	N/A	---	---	---
Mechanical	N/A	---	---	---
Sprinkler-Standpipe	N/A	---	---	---
Structural	N/A	---	---	---
Retaining Walls >5' High	N/A	---	---	---
Other	N/A	---	---	---

2012 EDITION OF NC CODE FOR: ■ New Construction ☐ Addition ☐ Upfit

EXISTING: ☐ Reconstruction ☐ Alteration ☐ Repair ☐ Renovation

CONSTRUCTED: (date) _____ **ORIGINAL USE(S)**: (Ch. 3) TELECOMMUNICATIONS

RENOVATED: (date) _____ **CURRENT USE(S)**: (Ch. 3) TELECOMMUNICATIONS

PROPOSED USE(S): (Ch. 3) TELECOMMUNICATIONS

BASIC BUILDING DATA

Construction Type: (check all that apply) ■ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A ☐ I-B ☐ II-B ☐ III-B ☐ V-B

Sprinklers: ■ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ■ No ☐ Yes Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

Fire District: ☐ No ☐ Yes (Primary) **Flood Hazard Area**: ☐ No ☐ Yes

Building Height: (feet) _____

Gross Building Area:

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	RENO/ALTER (SQ.FT.)	SUB-TOTAL
6th Floor	---	---	---	---
5th Floor	---	---	---	---
4th Floor	---	---	---	---
3rd Floor	---	---	---	---
2nd Floor	---	---	---	---
Mezzanine	---	---	---	---
1st Floor	0	15	---	15
Basement	---	---	---	---
TOTAL:	0	15	---	15

ALLOWABLE AREA:

Occupancy:

Assembly	☐ A-1	☐ A-2	☐ A-3	☐ A-4	☐ A-5	
Business	☐					
Educational	☐					
Factory	☐ F-1 Moderate	☐ F-2 Low				
Hazardous	☐ H-1 Detonate	☐ H-2 Deflagrate	☐ H-3 Combust	☐ H-4 Health	☐ H-5 HPM	
Institutional	☐ I-1	☐ I-2	☐ I-3	☐ I-4		
	I-3 Condition	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Mercantile	☐					
Residential	☐ R-1	☐ R-2	☐ R-3	☐ R-4		
Storage	☐ S-1 Moderate	■ S-2 Low	☐ High-piled			
	☐ Parking Garage	☐ Open	☐ Enclosed	☐ Repair Garage		
Utility and Miscellaneous	■					

Accessory Occupancies:

Assembly	☐ A-1	☐ A-2	☐ A-3	☐ A-4	☐ A-5	
Business	☐					
Educational	☐					
Factory	☐ F-1 Moderate	☐ F-2 Low				
Hazardous	☐ H-1 Detonate	☐ H-2 Deflagrate	☐ H-3 Combust	☐ H-4 Health	☐ H-5 HPM	
Institutional	☐ I-1	☐ I-2	☐ I-3	☐ I-4		
	I-3 Condition	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Mercantile	☐					
Residential	☐ R-1	☐ R-2	☐ R-3	☐ R-4		
Storage	☐ S-1 Moderate	☐ S-2 Low	☐ High-piled			
	☐ Parking Garage	☐ Open	☐ Enclosed	☐ Repair Garage		
Utility and Miscellaneous	☐					

Incidental Uses* (Table 508.2.5): * Existing to remain unchanged

- ☐ Furnace room where any piece of equipment is over 400,000 Btu per hour input
- ☐ Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower
- ☐ Refrigerant machine room
- ☐ Hydrogen cutoff rooms, not classified as Group H
- ☐ Incinerator rooms
- ☐ Paint shops, not classified as Group H, located in occupancies other than Group F
- ☐ Laboratories and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy
- ☐ Laundry rooms over 100 square feet
- ☐ Group I-3 cells equipped with padded surfaces
- ☐ Group I-2 waste and linen collection rooms
- ☐ Waste and linen collection rooms over 100 square feet
- ☐ Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or a lithium-ion capacity of 1,000 pounds used for facility standby power, emergency power, or uninterrupted power supplies
- ☐ Rooms containing fire pumps
- ☐ Group I-2 storage rooms over 100 square feet
- ☐ Group I-2 commercial kitchens
- ☐ Group I-2 laundries equal to or less than 100 square feet
- ☐ Group I-2 rooms or spaces that contain fuel-fired heating equipment

Special Uses: ☐ 402 ☐ 403 ☐ 404 ☐ 405 ☐ 406 ☐ 407 ☐ 408 ☐ 409 ☐ 410 ☐ 411 ☐ 412 ☐ 413 ☐ 414 ☐ 415 ☐ 416 ☐ 417 ☐ 418 ☐ 419 ☐ 420 ☐ 421 ☐ 422 ☐ 423 ☐ 424 ☐ 425 ☐ 426 ☐ 427

Special Provisions: ☐ 509.2 ☐ 509.3 ☐ 509.4 ☐ 509.5 ☐ 509.6 ☐ 509.7 ☐ 509.8 ☐ 509.9

Mixed Occupancy: ■ No ☐ Yes Separation: 0 Hr. Exception: ---

☐ Incidental Use Separation (508.2.5)
This separation is not exempt as a Non-Separated Use (see exceptions).

☐ Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4) - See below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

--- / --- + --- / --- + ------- = --- ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503[5] AREA	(C) AREA FOR FRONTAGE INCREASE[1]	(D) AREA FOR SPRINKLER INCREASE[2]	(E) ALLOWABLE AREA OR UNLIMITED[3]	(F) MAXIMUM BUILDING AREA[4]
---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---

[1] Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = --- (F)
b. Total Building Perimeter = --- (P)
c. Ratio (F/P) = --- (F/P)
d. W = Minimum width of public way = --- (W)
e. Percent of frontage increase $I_f = 100 \times [F/P - 0.25] \times W/30$ = --- (%)

[2] The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building I_s = 200 percent
b. Single story building I_s = 300 percent

[3] Unlimited area applicable under conditions of Section (507).

[4] Maximum Building Area = total number of stories in the building x E (506.4).

[5] The maximum area of open parking garages must comply with 406.3.5. The maximum area of air traffic control towers must comply with 412.1.2.

ALLOWABLE HEIGHT * Not Applicable

	ALLOWABLE (TABLE 503)	INCREA... SPRINKL...	SHOWN ON ...ANS	CODE REFERENCE
Type of Construction	Type:			
Building Height in Feet	Feet:	Feet: + 20' =		
Building Height in Stories	Stories:	Stories: =	Stories:	

FIRE PROTECTION R... * Not Applicable

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	R...	PRO... W/ NO... (CONSTRUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions Exterior walls							
North							
East							
West							
South							
Interior wall & partitions							
Floor Construction Including supporting beams and joists							
Roof Construction Including supporting beams and joists							
Shaft Enclosures - Exits							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy Separation							
Party/ Fire Wall Separation							
Smoke Barrier Separation							
Tenant Separation							
Incidental Use Separation Boiler Room							

* Indicate section number permitting reduction

FOOTNOTE (1): For Plumbing Penetrations: see plumbing drawings
For Mechanical Penetrations: see mechanical drawings
For Electrical Penetrations: see electrical drawings

LIFE SAFETY SYSTEM REQUIR...ENTS: * Not Applicable

Emergency Lighting: ☐ No ☐ ...
Exit Signs: ☐ No ☐ ...
Fire Alarm: ☐ No ☐ Y...
Smoke Detection Systems: ☐ ... ☐ Ye... ☐ Partial
Panic Hardware: ☐ ... ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS: * Not Applicable

Life Safety Plan Sheet #: _____

- ☐ Fire and/or smoke rated wall locations (Chapter 7)
- ☐ Assumed and real property line locations
- ☐ Exterior wall opening area with respect ...stance to ...lines (705.8)
- ☐ Existing structures within 30' of the propo... building
- ☐ Occupancy types for each area as it relates ...ccupant loa... (...04.1.1)
- ☐ Occupant loads for each area
- ☐ Exit access travel distance (10...
- ☐ Common path of travel distance...3 & 1028...
- ☐ Dead end lengths (10...
- ☐ Clear exits widths for ...
- ☐ Maximum calculated occ... ...exit ... can accommodate based on egress width (1005.1)
- ☐ Actual occupant load for each e...
- ☐ A separate schematic plan indicati... fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- ☐ Location of doors with panic hardware (1008.1.10)
- ☐ Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
- ☐ Location of doors with electromagnetic egress locks (1008.1.9.8)
- ☐ Location of doors equipped with hold-open devices
- ☐ Location of emergency escape windows (1029)
- ☐ The square footage of each fire area (902)
- ☐ The square footage of each smoke compartment (407.4)
- ☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS (SECTION 1107) * Not Applicable

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVI...	TYPE B UNITS ...QUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING (SECTION 110... * Not Applicable

LOT OR PARKING AREA	TOTAL # of PARKING SPAC...		# of ACCES... SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	...N SPACES WITH ...CCESS AISLE	8' ACCESS AISLE	
TOTAL						

STRUCTURAL DESIGN

* PER TIA-222-G-2 SECTION 2.7.3, EARTHQUAKE EFFECTS MAY BE IGNORED FOR SITE LOCATIONS WHERE S_S DOES NOT EXCEED 1.0. REFER TO STRUCTURAL ANALYSIS BY OTHERS FOR S_S VALUE WHERE APPLICABLE (SEE NOTE 2 ON SHEET C-1A)

DESIGN LOADS:

Importance Factors: Wind (Iw) 1.00; Snow (Is) 1.00; Seismic (Ie) 1.00

Live Loads: Roof 20 psf; Floor N/A psf

Ground Snow Load: 15 psf

Wind Load: Basic Wind Speed 90 mph (ASCE-7); Exposure Category C; Wind Base Shears (for MWFRS) Vx = N.A. Vy = N.A.

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D

Provide the following Seismic Design Parameters:

Occupancy Category (Table 1604.5) ☐ I ■ II ☐ III ☐ IV

Spectral Response Acceleration S_S -- %g S_1 -- %g

Site Classification (Table 1613.5.2) ☐ A ☐ B ☐ C ■ D ☐ E ☐ F

Data Source: ☐ Field Test ■ Presumptive ☐ Historical Data

Basic Structural System (check one) * Not Applicable

☐ Bearing Wall ☐ Dual w/ Special Moment Frame
☐ Building Frame ☐ Dual w/ Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum

Seismic base shear: Vx = N.A. Vy = N.A.

Analysis Procedure: ☐ Simplified ■ Equivalent Lateral Force ☐ Dynamic

Architectural, Mechanical, Components anchored? ☐ Yes ■ No

LATERAL DESIGN CONTROL: ☐ Earthquake ■ Wind

SOIL BEARING CAPACITIES:

Field Test (provide copy of test report) ---- psf
Presumptive Bearing capacity ---- psf
Pile size, type, and capacity ---- psf

SPECIAL INSPECTIONS REQUIRED: ☐ Yes ■ No

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1) * Not Applicable

	USE	WATERCLOSETS		URINALS	LAVATORIES		SHOWERS/ TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE		MALE	FEMALE		REGULAR	ACCESSIBLE
SPACE	EXISTING								
	NEW								
	REQUIRED								

SPECIAL APPROVALS * Not Applicable

Special approval: (Local Jurisd... Departm... of Insuran... SC, DPI, DHHS, ICC, etc., describe)

N/A

ENERGY SUMMARY * Not Applicable

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs. annual energy cost for the proposed design.

Climate Zone: ☐ 3 ☐ 4 ☐ 5

Method of Compliance:

- ☐ Prescriptive (Energy Code)
- ☐ Performance (Energy Code)
- ☐ Prescriptive (ASHRAE 90.1)
- ☐ Performance (ASHRAE 90.1)

THERMAL ENVELOPE

Roof/Ceiling Assembly (each assembl...
Description of assembly:
U-Value of total assembly:
R-Value of insulation:
Skylights in each assembly:
U-Value of skylight:
total square foota... of skylights ...ach assembly)

Exterior Walls (each assembl...
Description of assemb...
U-Value of total ...mbly)
R-Value of ...
Openings (w... ...ng)
U-Value o...
Solar heat ga...
Projection facto...
Door R-Values:

Walls below grade (each assembly)
Description of assembly:
U-Value of total assembly:
R-Value of insulation:

Floors over unconditioned space (each assembly)
Description of assembly:
U-Value of total assembly:
R-Value of insulation:

Floors slab-on-grade (each assembly)
Description of assembly: Existing to remain unchanged
U-Value of total assembly:
R-Value of insulation:
Hor./Vert. requirement:
Slab heated:

MECHANICAL SUMMARY * Not Applicable

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

Thermal Zone
winter dry bulb:
summer dry bulb:

Interior design conditions
winter dry bulb:
summer dry bulb:
relative humidity:

Building heating load:

Building cooling load:

Mechanical Spacing Condition... ...tem
Unitary
descri...
heating ...
cooling ef...
size category
Boiler
Size category. If o... ...t, sta... ...n:
Chiller
Size category. If oversi... ...e reason:

List equipment efficiencies:

ELECTRICAL SUMMARY * Not Applicable

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: ☐ Prescriptive ☐ P...
ASHRAE 90.1: ☐ Prescripti... ☐ Pe...

Lighting schedule (each fixture type)
lamp type required in fixture: ... Lighting Fi...
number of lamps in fixture: ... Lighting Fixt... ...ule...
ballast type used in the fixture: S... ...ghting Fixtu... ...dule, E2.01.
number of ballasts in fixture: Se... ...ghting Fixture ...le, E2.01.
total wattage per fixt... See ... ...ting Fixture S... E2.01.
total interior wattage ... vs. allowa... ...pace by space) ...82kW vs. 45.48kW
total exterior w... ...e sp... ...s. allowe... ...05kW vs. 2.09kW

Additional Prescript...
- ☐ 506.2.1 ... ...cal E... ...ment (not applicable)
- ☐ 506.2.2 F... ...s ... ...ens... (not applicable)
- ☐ 506.2.3 Ener... ...ower... ...Systems (not applicable)
- ☐ 506.2.4 Higher ... ...y Ser... ...Water Heating (not applicable)
- ☐ 506.2.5 On-Site Su... ...Renewable Energy (not applicable)
- ☐ 506.2.6 Automatic Day... ...g Control Systems (not applicable)

N/A N/A N/A N/A N/A N/A

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CONSTRUCTION DRAWINGS

0	01/12/18	ISSUED FOR CONSTRUCTION
A	12/20/17	ISSUED FOR REVIEW

NORTH CAROLINA PROFESSIONAL SEAL 044507 ENGINEER JESSICA E. JONES 1-12-18

DRAWN BY:	XH
REVIEWED BY:	DPF
CHECKED BY:	JEJ
PROJECT NUMBER:	50096394
JOB NUMBER:	50096726
SITE ADDRESS:	

1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:

BUILDING CODE SUMMARY

SHEET NUMBER:

B–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. ALSO SEE SPRINT METHOD OF PROCEDURE (MOP) AND SPRINT STANDARDS AT THE TIME OF CONSTRUCTION START.

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 ALONG WITH SPRINT CONSTRUCTION MANAGER APPROVAL.

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. CONTRACTOR IS RESPONSIBLE TO USE LATEST MOP's.

A. BASE BAND UNIT IN EXISTING UNIT
B. INSTALLATION OF BATTERIES
C. INSTALLATION OF FIBER CABLE
D. INSTALLATION OF RRH'S
E. CABLING
F. TS–0200 REV 5 – ANTENNA LINE ACCEPTANCE STANDARDS
G. SPRINT CELL SITE ENGINEERING NOTICE – EN 2012–001, REV 1.
H. 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. CONTRACTOR MAY BE REQUIRED TO PICK UP MATERIAL AT LOCATION PRESCRIBED BY SPRINT.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

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 5 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 OR 3Z – ANTENNA ALIGN 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:

D. PROVIDE PHOTOGRAPHS OF FINAL PROJECT PER THE FOLLOWING LIST. ADDITIONAL PHOTOGRAPHS MAY BE REQUIRED TO SUPPORT ACCEPTANCE PROCESSES.

(i) BACK MAIN HYBRID CABLE ROUTE (MINIMUM TWO PHOTOS).

(ii) OF EACH ANTENNA AND RRH.

(iii) MANUFACTURERS NAME TAG FOR ALL SERIALIZED EQUIPMENT.

(iv) PULL AND DISTRIBUTION BOXES INTERMEDIATE BETWEEN RRH'S AND MMBS (DOOR OPEN).

(v) MMBTS CABINET WITH DOOR OPEN SHOWING MODIFICATIONS.

(vi) POWER CABINET, DOORS OPEN, BATTERIES INSTALLED.

(vii) BREAK OUT CYLINDERS.

(viii) ASR SIGNAGE FOR SPRINT OWNED TOWERS.

(ix) RADIATION EXPOSURE WARNING SIGNS.

(x) PHOTOGRAPH FROM EACH SECTOR FROM APPROXIMATE RAD CENTER OF ANY NEW ANTENNA AT HORIZON.

E. LOAD PHOTOS TO SITERRA PROJECT LIBRARY I5. IN I5 CREATE NEW CATEGORY; 2.5 DEPLOYMENT, AND SECTION; PERMANENT CONSTRUCTION. LABEL PHOTOS WITH SITE CASCADE AND VIEW BEING DEPICTED. CAMERAS USED TO TAKE PHOTOGRAPHS SHALL GPS ENABLED SUCH THAT THE GPS COORDINATES ARE INCLUDED IN THE PHOTO MEDIA–FILE INFORMATION.

COMMISSIONING:
PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPS

INTEGRATION:
PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPS

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

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

ANTENNAS AND RRH'S:
THE NUMBER AND TYPE OF ANTENNAS AND RRH'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 RRH'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 RRH'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 SO AS TO ALLOW FOR THE PROPER BEND RADIUS PER MANUFACTURER OR SPRINT SPECIFICATIONS.

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 AS 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.

FIBER 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 FIBER CABLES:

   a. LATTICE AND GUYED TOWERS:
   ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'–0" OC USING NON–MAGNETIC STAINLESS STEEL CLIPS.

   b. MONOPOLE:
   ALL CABLES SHALL BE PERMANENTLY SUPPORTED WITH HOISTING GRIPS AT INTERVALS OF NO MORE THAN 200 FEET (ONE HOISTING GRIP PER COAX). A HOISTING GRIP SHOULD BE INSTALLED AT MID–POINT IF CABLE RUN EXCEEDS 200' AS WELL AS TOP SIDE.

2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBTS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
   a. FIBER: SUPPORT FIBER BUNDLES USING 1/2" 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: FASTENING OR SECURING JUMPERS SHOULD CONSIST OF STAINLESS STEEL CLIPS, 18" FROM REAR OF CONNECTOR AND 24" THEREAFTER AND AT NO TIME SHALL THEY CONTACT TOWER OR STRUCTURAL STEEL.
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 PER LATEST VERSION OF TS 0200.
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.

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.

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SPRINT STORE #105738 (RA80XSA01)

CONSTRUCTION DRAWINGS

0	01/12/18	ISSUED FOR CONSTRUCTION
A	12/20/17	ISSUED FOR REVIEW

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NORTH CAROLINA PROFESSIONAL SEAL 044507 ENGINEER JESSICA E. JONES 1-12-18

DRAWN BY:	XH
REVIEWED BY:	DPF
CHECKED BY:	JEJ
PROJECT NUMBER:	50096394
JOB NUMBER:	50096726
SITE ADDRESS:	

1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP–1

SECTION 11 800 – INSTALLATION OF MULTIMODAL BASE STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BUT NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRED BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START–UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

A. NEW DC CIRCUIT IS REQUIRED IN MMBTS CABINET SHALL BE CLEARLY IDENTIFIED AS TO RRH 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. MANUFACTURERS OF 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. MANUFACTURERS OF EQUIPMENT: ALL MATERIALS AND EQUIPMENT SPECIFIED IN DIVISION 26 OF THE SAME TYPE SHALL BE OF THE SAME MANUFACTURER AND SHALL BE NEW, OF THE BEST QUALITY AND DESIGN, AND FREE FROM DEFECTS.

SUPPORTING DEVICES:

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

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

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

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

SUPPORTING DEVICES:

A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.

B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.

C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:

1. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
2. 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 PLANELOAD.

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 CEILING. 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 ON 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.

CABLE TERMINATION FITTINGS FOR CONDUIT

A. CABLE TERMINATIONS FOR RGS CONDUITS SHALL BE TYPE CRC BY O–Z/GEDNEY OR EQUAL BY ROX TEC.

B. 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, COPPER, 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.

GENERAL NOTE:

A. CONTRACTOR, SUBCONTRACTORS AND ANY SITE SPECIFIC PART/ PRODUCT/ CONCEALMENT MANUFACTURER TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO MANUFACTURING, FABRICATION OR CONSTRUCTION.

SPRINT CONSTRUCTION SPECIFICATIONS MINI–MACRO CELL SITES:

1. BASIC REQUIREMENTS
   - A. MEET ALL REQUIREMENTS OF JURISDICTIONS.
   - B. IF EQUIPMENT FURNISHED BY COMPANY DOES NOT MATCH EQUIPMENT LISTED ON THE RFDS AND SHOWN ON THE PERMITTING DRAWINGS, RESOLVE DISCREPANCY THROUGH INSTALLER'S CONSTRUCTION MANAGER AND COMPANY'S POINT OF CONTACT.
   - C. CABLE INSTALLATIONS
     - a. ALL CABLES MUST BE OUTDOOR RATED AND HAVE UV RESISTANCE OUTER JACKET.
     - b. CABLE BENDS MUST NOT EXCEED MANUFACTURER'S ALLOWABLE CABLE BEND RADII.
     - c. AT RADIOS INSTALL SERVICE LOOPS FOR POWER, FIBER AND ETHERNET SECURED AT LEAST TWICE AT 180 TO THE STRUCTURE.
     - d. SPARE FIBERS MUST BE ENCASED IN A LOW PROFILE WEATHERTIGHT ASSEMBLY.
   - D. FIBERS MUST BE FIELD–TERMINATED WITH LC–TYPE CONNECTORS.
   - E. CONDUITS IN EARTH: PROVIDE PVC CONDUITS EXPOSED AND IN FACILITIES: PROVIDE RGS. HAND DIG TRENCHES IN COMPOUNDS.
   - F. SECURE AND SUPPORT CONDUITS AND CABLES ON NO MORE THAT 48" INTERVALS.
   - G. ON TOWER SITES RGS CONDUITS MAY BE SURFACE MOUNTED AWAY FROM WALKWAYS AND ACCESS/EGREES PATHS. IF INSTALLATIONS IN WALKWAYS AND ACCESS/EGRESS PATHS CANNOT BE AVOIDED, IDENTIFY THE CONDUIT ENVELOPE/TRIP HAZARD BY ALTERNATING YELLOW AND BLACK STRIPES PAINTED ON CONCRETE AND CONDUIT.
2. SPRINT FURNISHED EQUIPMENT
   - A. INSTALL THE FOLLOWING EQUIPMENT AT LOCATIONS AND AZIMUTHS SHOWN ON THE CONSTRUCTION DRAWINGS.
     - a. PANEL ANTENNAS.
     - b. RADIOS.
     - c. GPS ANTENNAS.
     - d. FILTERS.
     - e. 120 VOLT DIN–RAIL CIRCUIT BREAKER ASSEMBLY.
3. TOWER INSTALLATION
   - A. MEET ALL REQUIREMENTS OF THE TOWER OWNER.
   - B. INSTALL CORRUGATED FLEXIBLE CONDUIT UP THE TOWER TO COMPANY RAD CENTER.
   - C. PROVIDE HANGING GRIPS OR CONDUIT CLAMPS AND ENSURE CONDUITS AS WELL AS INNER CABLES ARE SUPPORTED.
   - D. CONDUIT RISERS: AT TOP OF TOWER TURN CONDUIT DOWN AND PROVIDE CABLE TERMINATION FITTINGS. EXTEND CABLES TO RADIOS EXPOSED AND SECURED TO STRUCTURE. AT CONDUIT EXIT FROM TOWER, PROVIDE DRIP LOOPS AND WEEP HOLES.
   - E. AT ICE BRIDGE RUN CABLES IN RGS CONDUIT. UTILIZE CONDULETS TO MAKE COMPACT 90 DEGREE TURN.
4. AC POWER TIE–IN
   - A. INSTALL SPRINT'S 120 VOLT DIN–RAIL CIRCUIT BREAKER ASSEMBLY IN THE EXISTING POWER PROTECTION CABINET TELCO SECTION.
   - B. INSTALL A 20 AMPERE MOLDED CASE CIRCUIT BREAKER IN AVAILABLE SPACE IN THE ADJACENT PPC POWER SECTION LOAD CENTER.
5. GROUNDING
   - A. 120 VOLT CIRCUITS: POWER CABLES MUST BE 3–WIRE WITH EQUIPMENT GROUNDING CONDUCTOR.
   - B. SUPPLEMENTAL GROUNDING: ALL GROUNDING HARDWARE MUST BE UL STAMPED AS SUITABLE FOR GROUNDING HARDWARE.
   - C. RADIOS: BOND RADIO TO THE POWER TOP OR SECTOR GROUND BAR WITH #8 BARE TINNED COPPER WIRE (GREEN INSULATED ON ROOFTOP).
   - D. DIN–RAIL CIRCUIT BREAKER ASSEMBLY: BOND SURGE ARRESTOR TO PPC TELCO BOARD GROUND BAR.
6. MINOR MATERIALS
   - A. CONDUIT
     - a. RIGID GALVANIZED STEEL CONDUIT (RGS): UL LISTED, COMPLIANT WITH ANSI STANDARD C80, HOT–DIP GALVANIZED WITH THREADED FITTING. MANUFACTURERS: ALLIED, REPUBLIC, WHEATLAND, OR EQUAL.
     - b. CORRUGATED FLEXIBLE CONDUIT: DURALINE OR EQUAL.
     - c. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LFMC): UL LABELED, UV RESISTANT, FLAME RETARDANT PVC JACKET, HOT–DIP GALVANIZED, GRAY. MANUFACTURER'S: AFC, ANACONDA, SOUTHWIRE OR EQUAL.
     - d. PVC CONDUIT: SCHEDULE 4– CARLON OR EQUAL.
   - B. COAXIAL CABLE JUMPERS: 1/2" LDF–4 MANUFACTURERS: COMMSCOPE, RFS OR FCT.
   - C. FASTENERS AND HARDWARE
     - a. TO SECURE RACEWAYS, UTILIZE NON CORRODING NON–MAGNETIC METALLIC FASTENERS AND HARDWARE SUITABLE FOR THE PURPOSE.
   - D. POWER CABLES–3/C @12 SOOW BY SOUTHWIRE OR EQUAL.
   - E. ETHERNET CABLES AND CONNECTOR: OUTDOOR RATED, CAT SE, BELOW OR EQUAL.
   - F. FIBER CABLES: CORNING "FREEDOM FAN OUT" OUTDOOR RISER CABLE, 4F, SINGLE MODE, OR EQUAL.
   - G. RF TRANSPARENT PAINT FOR ANTENNA CONCEALMENT: SELECT NO/LOW CARBON PAINTS, WITH NO/LOW TITANIUM DIOXIDE, AND WITHOUT SUSPENDED METAL PARTICLES (ALUMINUM, ZINC, COPPER, ETC.)
7. COLOR CODING
   - A. COLOR CODE CABLES AND CONDUITS AS REQUIRED BY SPRINT STANDARD TS–0200.
8. TESTING AND CONSTRUCTION COMPLETE
   - A. SWEEP ALL COAXIAL CABLES ACCORDING TO SPRINT STANDARD TS–0200.
   - B. PANEL ANTENNA ALIGNMENT–USING ELECTRONIC ALIGNMENT TOOL. AZIMUTH/DOWNTILT ± 1 DEGREE.
   - C. LEAVE EQUIPMENT DE–ENERGIZED UNTIL INSTRUCTED BY THE COMMISSIONING AND INTEGRATION TEAM TO ENERGIZE.
   - D. OTHER REQUIREMENTS AND DELIVERABLES MAY BE REQUIRED BEFORE THE CONSTRUCTION COMPLETE MILESTONE CAN BE ACTUALIZED IN SITERRA (SPRINT'S DATABASE–OF–RECORD).

Sprint
4819 EMPEROR BLVD, SUITE 210
DURHAM, NC 27703

SPRINT STORE #105738 (RA80XSA01)

CONSTRUCTION DRAWINGS

0	01/12/18	ISSUED FOR CONSTRUCTION
A	12/20/17	ISSUED FOR REVIEW

Dewberry®
Dewberry Engineers Inc.
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
FAX: 919.881.9923
NCBELS # F-0929

NORTH CAROLINA PROFESSIONAL SEAL 044507 ENGINEER JESSICA E. JONES 1-12-18

DRAWN BY:	XH
REVIEWED BY:	DPF
CHECKED BY:	JEJ
PROJECT NUMBER:	50096394
JOB NUMBER:	50096726
SITE ADDRESS:	

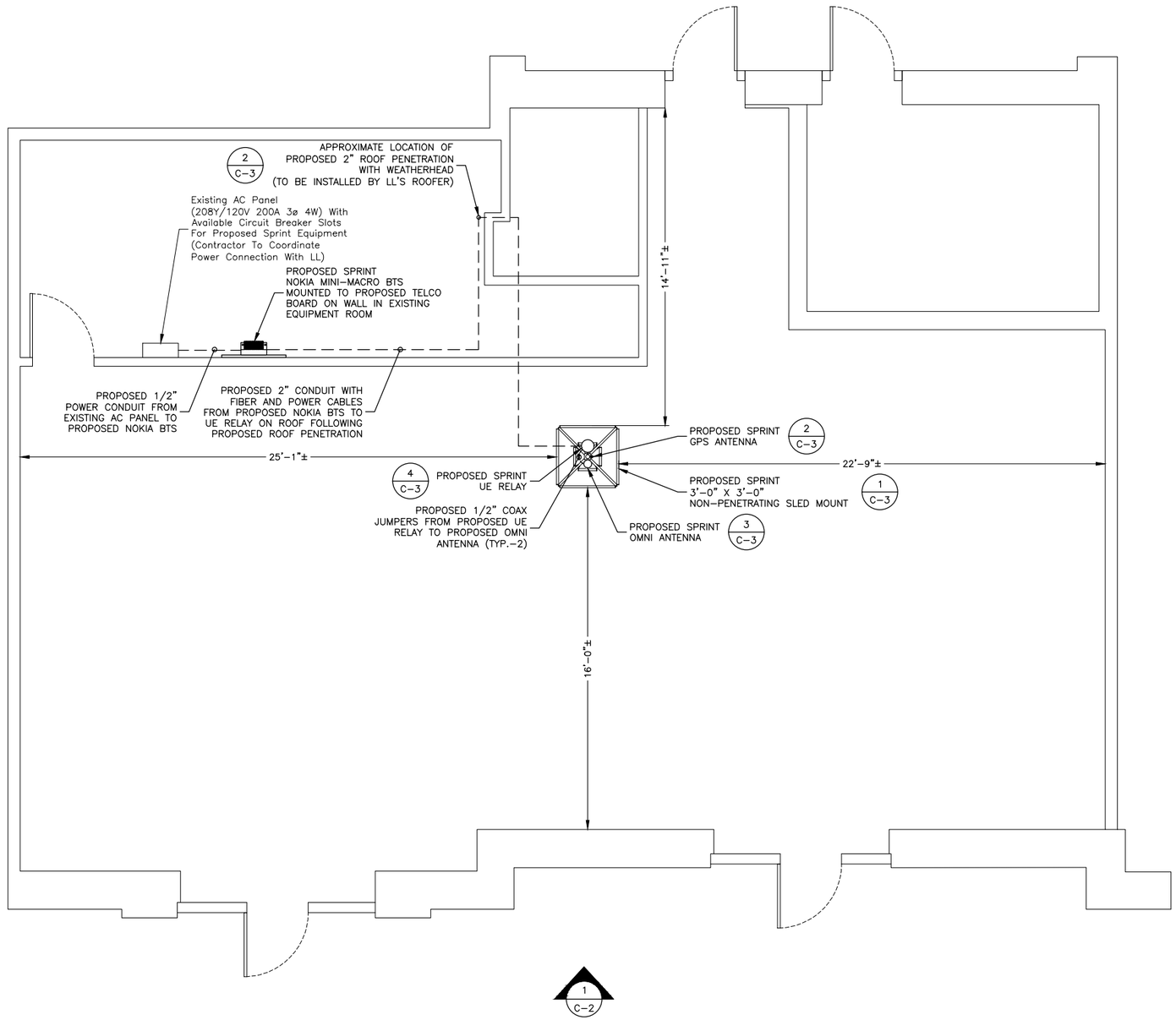
1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP–2



SITE PLAN 1
SCALE: 1"=6' FOR 11"x17"
1"=3' FOR 22"x34"

0' 3' 6'

NOTES:

1. SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
2. EXISTING TOWER AND ANTENNA ELEVATIONS ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED WITH A TOWER MAPPING OR FIELD SURVEY.
3. CONTRACTOR TO VERIFY ALL EXISTING SITE INFORMATION & NOTIFY SPRINT & DEWBERRY ENGINEERS OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
4. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS SITE. SITE RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS.
5. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE INSTALLED PER MANUFACTURES' RECOMMENDATIONS AND IN ACCORDANCE WITH THE STRUCTURAL ANALYSIS REPORT (BY OTHERS).
6. PLANS BASED ON DRAWINGS BY SPRINT, DATED 02/22/2017.

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1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:

SITE PLAN

SHEET NUMBER:

C-1

NOTES:

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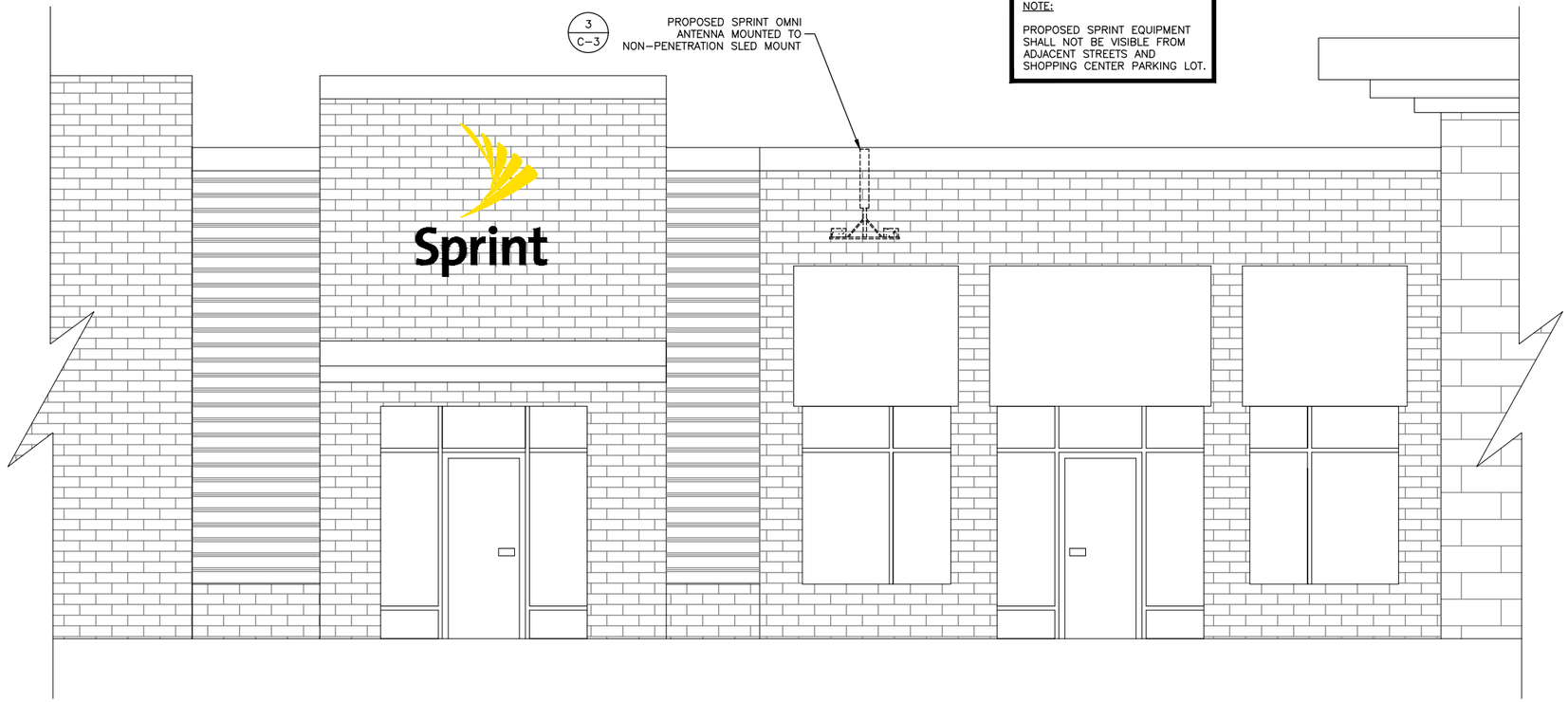

NOTE:

PROPOSED SPRINT EQUIPMENT SHALL NOT BE VISIBLE FROM ADJACENT STREETS AND SHOPPING CENTER PARKING LOT.

BUILDING ELEVATION (FRONT VIEW) 1

SCALE: 1"=6' FOR 11"x17"
1"=3' FOR 22"x34"

0' 3' 6'

Sprint

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DURHAM, NC 27703

SPRINT STORE #105738 (RA80XSA01)

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NORTH CAROLINA PROFESSIONAL SEAL 044507 ENGINEER JESSICA E. JONES
1-12-18

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JOB NUMBER:	50096726
SITE ADDRESS:	

1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:

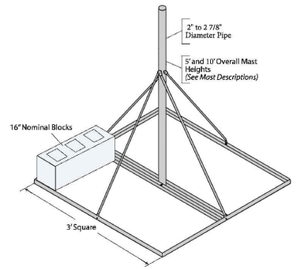
BUILDING ELEVATION

SHEET NUMBER:

C-2

FRM
NON-PENETRATING

The FRM mount is a lightweight mount and is galvanized for corrosion protection. The FRM mount is easily shipped via UPS.



MAST SPECIFICATIONS

Mount Part No.	Mast Part No.	Mast Description & Height
FRM125	FY202	1.25" O.D. x 16 GA. x 5.0' (PG)
FRM150	FY203	1.50" O.D. x 16 GA. x 2.5' (PG)
FRM166	FY204	1.66" O.D. x 16 GA. x 2.5' (PG)
FRM238	FY205	2.38" O.D. x 0.154" wall x 2.5' (HDG)
FRM225	FY205SP	2.25" O.D. x 14 GA. x 5.0' (HDG)
FRM238SP5	FY253	2.28" O.D. x 0.154" wall x 5.0' (HDG)

PG = Pre-galvanized mast
HDG = Hot-dip galvanized mast

FRM BALLAST REQUIREMENTS

Effective Projected Area (ESPA) (FT²)	Ballast (LBS)	Zero Velocity Load (PSF)	Vs (MPH)	Vmax at centroid of projected area, (MPH) h=2 FT	h=3 FT	h=4 FT	h=5 FT
2	100	12	140	135	110	96	85
	200	24	198	188	153	133	119
	300	35	242	222	182	157 (154)	141 (131)
	400	48	280	269	219 (197)	190 (154)	170 (131)
4	100	12	99	96	78	68	60
	200	24	140	133	108	94	84
	300	36	171	157	129	111	99 (93)
	400	48	198	190	155 (139)	134(109)	120 (93)
6	100	12	81	78	64	55	49
	200	24	114	108	88	77	68
	300	36	140	128	105	91 (88)	81 (76)
	400	48	161	155	127 (114)	110 (89)	98 (76)

h = Distance from support surface to centroid of EPA.
Vs = Effective wind velocity resulting in sliding on a flat surface with a .50 coefficient of friction.
Vmax = Effective wind velocity based on strength or overturning.

NOTE: The velocities in ( ) apply to the FRM125 mount when the strength of the FRM125 mast governs.

NON-PENETRATING SLED MOUNT DETAIL
SCALE: N.T.S. — 1

GNSS ANTENNAS
High Rejection GPS Timing Antennas
GPS-TMG-HR-26N Series

PCTEL®

High Rejection 26 dB with Enhanced Narrow Band Filtering

The GPS-TMG-HR-26 timing reference antennas feature a 26 dB amplifier and narrow band high rejection filtering specifically designed to support long-lasting, trouble-free deployments in congested cell-site applications with severe interference around the GPS L1 frequency.

The proprietary quadrifilar helix design, coupled with multi-stage filtering provides superior out-of-band rejection and lower elevation pattern performance than traditional patch antennas.

The unique radome shape sheds water and ice, while eliminating problems associated with bird perching. The antenna may be purchased by itself or with pipe mounting hardware. Custom models or site kits options are also available. The antenna label and collar mount are color coded red for differentiation purposes.

This antenna is made of materials that fully comply with provisions stipulated by EU directives RoHS 2002/95/EC.

GPS-TMG-HR-26N (Top)
GPS-TMG-MNT-R (Bottom left)
GPS-TMG-HR-26NCM (Bottom right)

STANDARD CONFIGURATION

Model	Connector	Mount	Radome
GPS-TMG-HR-26N GPS-TMG-HR-26NCM	N Female (one - bottom fed)	Antenna Only. Does not include mounting hardware. Includes red powder coated collar mount (GPS-TMG-MNT-R)	Color: White

ELECTRICAL SPECIFICATIONS - GNSS ANTENNA

Model	Frequency Range	LNA Gain	Element Gain	Out of Band Rejection	VSWR
GPS-TMG-HR-26N	1575.42 +/- 10 MHz	26.5 dB ± 3 dB	3.5 dBic	≥ 65 dB @ 1559 MHz ≥ 65 dB @ 1625 MHz	≤ 1.5:1 (typical)

ELECTRICAL SPECIFICATIONS - GNSS ANTENNA, continued

Model	Noise Figure	Current Draw	DC Voltage	Nominal Impedance	Polarization
GPS-TMG-HR-26N	≤ 4.0 dB @ +25°C (typ.) ≤ 4.5 dB @ +25°C (max.)	≤ 40 mA @ 5V	Operating: 3.3- 12.0 V (regulated) Survival: 24 V	50 ohms	Right hand circular

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

Model	Dimensions	Weight	Housing Material	Temperature Range	Humidity
GPS-TMG-HR-26N	5.0" H x 3.2" D (126 H x 81 mm)	0.6 lbs (0.3 kg)	ASA	- 40°C to + 85°C	95%

GPS ANTENNA DETAIL
SCALE: N.T.S. — 2

AW3477-S Data Sheet

ALPHA WIRELESS

2496 -2690MHz Omni Antenna
(Dual Port, Omni, +/-45° Polarisation, 3 x VET)

*The parameters in this specification follow the definitions and recommendations per NGMN P-Basta, Release 9.6

RF Specifications

Frequency Range per Input	MHz	2496 - 2690
Polarisation:	NA	+/-45° Slant Linear
Gain		
Over all Tilts	dBi	8.5
Azimuth Beamwidth	Degree	360
Elevation Beamwidth	Degree	10
Electrical Downtilt:	Degree	T0° -T14°
Electrical Downtilt:	Degree	T8° -T20°
Electrical Downtilt Deviation	Degree <	1
Impedance	Ohms	50
VSWR	NA <	1.4
Return Loss:	dB >	15
Isolation	dB >	25
Passive Intermodulation	dBc <	-150
Upper Sidelobe Suppression, Peak to 20°	dB >	18
Cross Pole Discrimination at Sector	dB >	12
Maximum Effective Power Per Port	W	50

Mechanical Specifications

Dimensions (Lxjh) mm (in) inc Bracket	mm (in)	756(29.5) x 116 (4.5)
Packing Size (LxWxD)	mm (in)	820(32.2) x 150 (4.9)
Net Weight (antenna)	kg (lb)	4 (8.8)
Net Weight (mount)	kg (lb)	0.5 (1.1)
Shipping Weight	kg (lb)	4.5 (9.9)
Connector Quantity	NA	2 x Mini Din
Connector Position	NA	Bottom
Windload calculation	km/h	F=1/2*ρ*(Cdg*A*v2^A
Windload Frontal	N	160
Survival Wind Speed	km/h	200 (125)
Radome Material	NA	UV-Stabilised PVC
Radome Colour	RAL	White
Mounting Kit	NA	As agreed with Sprint
Product Compliance Environmental	NA	RoHS
Lightening Protection	NA	DC Grounded
Cold Temperature Survival	Celsius	-40
Hot Temperature Survival	Celsius	+ 70

Note:
Independent Adjustable Tilt on each of 3 sectors

Ordering Information:
* T0°-T14°
** T8°-T20°

OMNI ANTENNA DETAIL
SCALE: N.T.S. — 3

iRelay 460 Datasheet

Airspan

Outdoor LTE Relay iRelay 460

Airspan's iRelay 460 (iR460) is an innovative standards compliant LTE relay solution.

iR460 is part of the iRelay family, providing a compact Category 6 UE Relay solution which supports multi-band radios to connect to a combination of different Macro eNB.

Innovative features including Plug and Play, Steerable Narrow Beam Antenna, Best Serving eNB Selection, and Mounting assembly significantly reduce the time and experience level to deploy a wireless backhaul solution.

LTE compliant interface minimises the impact to the existing network architecture, whilst maintaining the same security and reliability requirements.

Dimensions

Variant	Dimensions[1] (H x W x D)
iR460 (excluding mounting brackets)	Height 330mm (13inches) Diameter 200mm (7inch)

Weight

Variant	Dimensions
Main unit	4 Kg / 8.8 Lbs.
Universal mounting bracket (including pole straps)	0.5 Kg / 1.1 Lbs.

Operational Tolerances

Type	Details	Standard Compliance
Operating temperature	-45°C to 60°C	ETSI 300 019 1-4
Operating humidity	5% - 100% non-condensing	ETSI 300 019 1-4
Storage temperature	-45°C to 70° C	Non Operational Test
Storage humidity	5% - 100% non-condensing	ETSI 300 019 1-4
Rain and dust ingress protection	IP67	ETSI 300 019 1-4
Operational altitude	70-106 kPa as well as: From -60m to 1800m @ 40°C From 1800m to 4000m @ 30°C	ETSI 300 019 1-4
Solar radiation	1120 W/m²	ETSI 300 019 1-4

UE RELAY DETAIL
SCALE: N.T.S. — 4

Sprint
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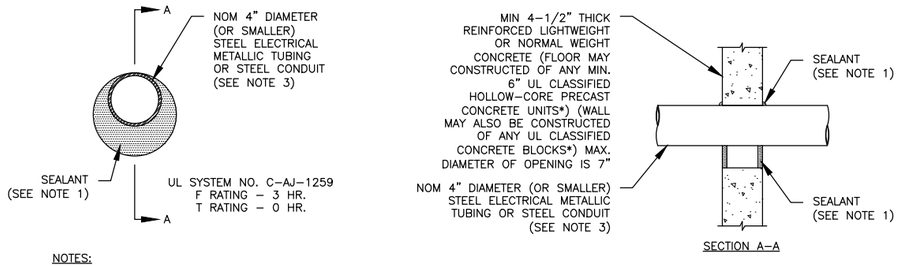
1490 FORDHAM BOULEVARD
CHAPEL HILL, NC 27514

SHEET NAME:

EQUIPMENT DETAILS

SHEET NUMBER:

C – 3

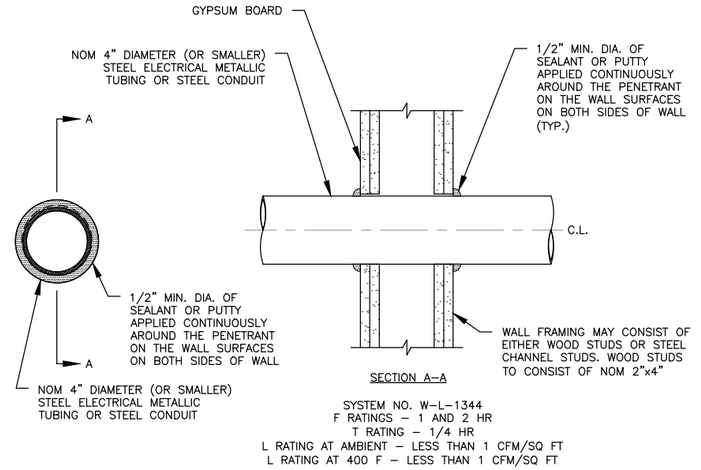


NOTES:

1. FILL, VOID OR CAVITY MATERIAL* - SEALANT - MIN. 1/2" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF FLOOR OR WALL. AT THE POINT CONTACT LOCATION BETWEEN PENETRATING ITEM AND CONCRETE, A MIN. 1/4" THICK BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PENETRATING ITEM INTERFACE ON BOTH SIDES OF FLOOR OR WALL.
2. FORMING MATERIAL - (OPTIONAL, NOT SHOWN) - MINERAL WOOL BATT PACKING MATERIAL OR POLYURETHANE BACKER ROD FRICTION FITTED INTO OPENING AND RECESSED FROM FLOOR OR WALL SURFACES AS REQUIRED TO ACCOMMODATE THICKNESS OF FILL MATERIAL.
3. ONE CONDUIT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE CONDUIT AND THE PERIPHERY OF THE OPENING SHALL BE A MIN. OF 0" (POINT OF CONTACT) TO A MAX. OF 3". CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

* BEARING THE UL CLASSIFICATION MARK.

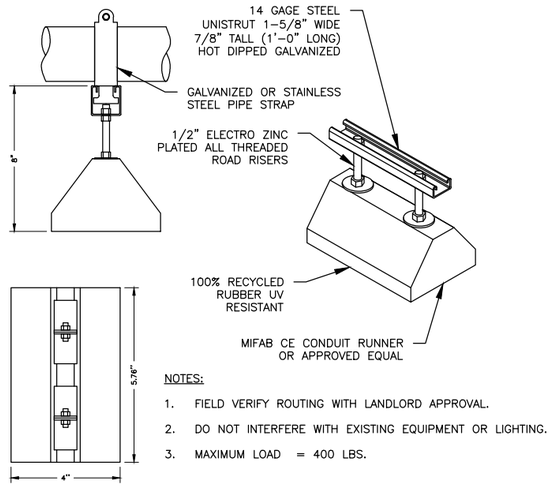
CORING DETAIL 1
SCALE: N.T.S.



NOTES:

1. THE 1 AND 2 HOUR FIRE RATED GYPSUM WALL BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS & MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL & PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY.
2. 5" DIAMETER OPENING MAX.

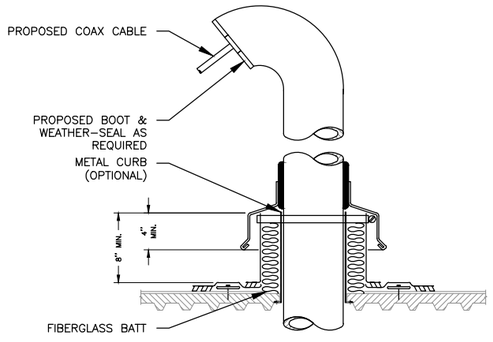
SECTION - THROUGH PENETRATION FIRESTOP SYSTEM 2
SCALE: N.T.S.



NOTES:

1. FIELD VERIFY ROUTING WITH LANDLORD APPROVAL.
2. DO NOT INTERFERE WITH EXISTING EQUIPMENT OR LIGHTING.
3. MAXIMUM LOAD = 400 LBS.

COAX CABLE/CONDUIT ROOF MOUNT DETAIL 3
SCALE: N.T.S.



FLASHING NOTES:

1. HARDWARE TO BE PER MANUFACTURERS RECOMMENDATIONS.
2. FLASHING & SEALENTS TO MATCH EXISTING ROOFING SYSTEM.
3. NO STRUCTURAL JOISTS ARE TO BE CUT DURING INSTALLATION.
4. PROVIDE PROPER BOOT AND CUSHION ASSEMBLY FOR SPECIFIED PIPE SIZE.
5. FIRE STOP ALL PENETRATIONS WITH FS-ONE HIGH PERFORMANCE INTUMESCENT FIRE STOP BY HILTI. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
6. SUBCONTRACTOR TO INSURE PIPE IS WEATHERED SEALED PER MANUFACTURER'S RECOMMENDATIONS.
7. ROOF PENETRATION LOCATION TO BE PER OWNER.

WEATHERHEAD DETAIL 4
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A	12/20/17	ISSUED FOR REVIEW

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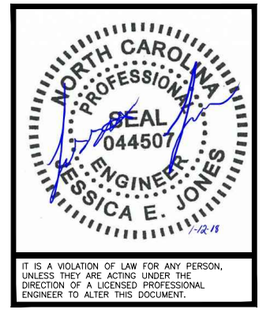

DRAWN BY:	XH
REVIEWED BY:	DPF
CHECKED BY:	JEJ
PROJECT NUMBER:	50096394
JOB NUMBER:	50096726
SITE ADDRESS:	

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CHAPEL HILL, NC 27514

SHEET NAME:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-4

ELECTRICAL INSTALLATION NOTES:

PART 1 GENERAL:

1. WORK INCLUDED

A. SECONDARY ELECTRICAL SERVICE INCLUDING UNDERGROUND CONDUIT BANK FROM POWER COMPANY TRANSFORMER AND SECONDARY SERVICE ENTRANCE SERVICE;

B. OUTDOOR SECONDARY DISTRIBUTION SYSTEM INCLUDING EXISTING EQUIPMENT TO BE RELOCATED AS SHOWN ON THE DRAWINGS AND PROPOSED RACEWAYS, CABLES, WIRING, JUNCTION BOXES, PULL BOXES AND OTHER COMPONENTS REQUIRED FOR COMPLETE INSTALLATION OF ELECTRICAL DISTRIBUTION SYSTEM.

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING ELECTRICAL SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, AND LATEST EDITION ALL APPLICABLE NATIONAL AND LOCAL CODES.

4. THE POWER COMPANY SERVING THIS PROJECT IS ORLANDO UTILITIES COMMISSION. SERVICE WILL BE OBTAINED 200 AMPERES AT 240/120 VOLTS, SINGLE PHASE, 3 WIRE. COORDINATE WITH POWER COMPANY TRENCHING REQUIREMENTS, INSTALLATION OF THE SECONDARY POWER CONDUITS AND CABLES, AND METERING.

5. THE DRAWINGS, WHICH CONSTITUTE AN INTEGRAL PART OF THIS CONTRACT, SHALL SERVE AS THE WORKING DRAWINGS. THEY INDICATE THE GENERAL LAYOUT OF THE EXISTING FACILITIES AND THE COMPLETE NEW ELECTRICAL SYSTEM OR SYSTEMS, ARRANGEMENT OF FEEDERS, CIRCUITS, OUTLETS, SWITCHES, CONTROLS, PANELBOARDS, SERVICE EQUIPMENT, AND OTHER WORK.

6. DISCONNECT POWER AND CONTROL AND MAKE SAFE FOR RELOCATION OR DEMOLITION FROM EQUIPMENT INDICATED FOR RELOCATION OR DEMOLITION. PROVIDE RELOCATION OR DEMOLITION IN ACCORDANCE WITH CONTRACT DRAWINGS. REMOVE ALL DEBRIS, DEMOLISHED WIRING, CONDUIT AND EQUIPMENT, UNLESS THESE SCHEDULED TO BE RETURN TO OWNER.

7. INSTALLATION OF ELECTRICAL EQUIPMENT, ACCESSORIES AND COMPONENTS SHALL BE IN ACCORDANCE WITH SEISMIC REQUIREMENTS IDENTIFIED IN THE LATEST EDITION OF THE APPLICABLE BUILDING CODES.

8. SUBMIT SHOP DRAWING FOR EQUIPMENT SPECIFIED IN THE PROJECT: SWITCHING DEVICES, WIRING DEVICES AND COVER PLATES, WIRING AND CABLES, CONDUITS, BOXES AND FITTINGS, SAFETY SWITCHES. THE SHOP DRAWINGS SHALL INCLUDE CATALOG NUMBERS, CUTS, DIAGRAMS, DETAILED DIMENSIONED SHOP DRAWINGS OF EQUIPMENT, BROCHURES OF LIGHTING FIXTURES, WIRING DIAGRAMS AS REQUIRED, DRAWINGS, SAMPLES AS REQUESTED, AND SUCH OTHER PERTINENT DESCRIPTIVE RATINGS AND DATA AS MAY BE REQUIRED BY THE ENGINEER.

9. THE ELECTRICAL CONTRACTOR BEFORE STARTING WORK SHALL CONFER WITH ALL OTHER TRADES INTERESTED IN THE LOCATION OF PIPES, PITS, TRENCHES OR ANY OTHER APPARATUS TO BE INSTALLED BY THEM AND SHALL SELECT HIS LOCATION SO AS NOT TO INTERFERE WITH THE WORK AND RIGHTS OF THE OTHER TRADES. ALL DIFFERENCES OR CONFLICTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR ADJUSTMENT BEFORE COMMENCING WORK, AND ANY SUCH WORK OR MATERIALS PLACED IN POSITION IN VIOLATION OF THIS CLAUSE SHALL BE READJUSTED AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.

10. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, AFTER CONSTRUCTION IS COMPLETED, A TEMPORARY POWER AND LIGHTING SYSTEM AS REQUIRED FOR CONSTRUCTION PURPOSES. THE SYSTEM SHALL CONSIST OF A POWER SERVICE, DISTRIBUTION SYSTEM, PANELBOARDS, GROUNDING, GROUND FAULT PROTECTIVE DEVICES, BRANCH CIRCUITS AND RECEPTACLE OUTLETS AS REQUIRED.

11. ELECTRICAL ENCLOSURE SHALL BE NEMA 3R FOR OUTDOOR LOCATION AND NEMA 4 FOR WET LOCATION WITH OPEN WATER.

12. THE ELECTRICAL SYSTEM OR SYSTEMS, TOGETHER WITH THE COMPONENT UNITS AS INCLUDED IN THIS SECTION OF THE SPECIFICATIONS, SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE THEREOF AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP.

PART 2 PRODUCT:

1. ALL EQUIPMENT AND MATERIALS EXCEPT RELOCATED FINISHED BY THE ELECTRICAL CONTRACTOR SHALL BE NEW AND FIRST GRADE, AND AS APPROVED BY THE UNDERWRITERS' LABORATORIES, INC., AND/OR BY OTHER STANDARDS MENTIONED IN THESE SPECIFICATIONS. MATERIALS TO BE FURNISHED UNDER THIS SPECIFICATION SHALL BE THE STANDARD PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH EQUIPMENT AND SHALL BE OF THE LATEST STANDARD DESIGN. EQUIPMENT AND MATERIALS SHALL BE OF THE TYPE AND QUALITY LISTED BELOW.

2. PVC CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE SCHEDULE 40. RIGID PVC CONDUIT AND FITTINGS TRADE SIZE SHALL BE AS SHOWN ON THE DRAWINGS. CONDUITS SHALL BE INSTALLED DIRECT BURIAL AND COMPLY WITH NEMA TC-8 AND ASTM F512. ACCEPTABLE MANUFACTURER: CARLON CORP, CERTAINED CORP., CONUX PIPE SYSTEMS, INC., OR EQUAL. CONNECTORS, COUPLINGS, FITTINGS AND ANCILLARY MATERIALS SHALL BE SUPPLIED BY THE CONDUIT MANUFACTURER.

3. GALVANIZED RIGID METAL CONDUIT (GRS), COUPLINGS, FACTORY ELBOWS AND FITTINGS SHALL BE HEAVY WALL STEEL TUBING WITH A HOT-DIPPED GALVANIZED FINISH INSIDE AND OUT AFTER THREADING AND SHALL COMPLY WITH ANSI C 80.1 AND UL/6. ACCEPTABLE MANUFACTURER: ALLIEN TUBE & CONDUIT CORP.; LTV STEEL TUBULAR PRODUCTS CORP. TRIANGLE PWC. CORP. OR EQUAL.

4. PULL AND JUNCTION BOXES FOR DRY LOCATION SHALL BE ZINC-GALVANIZED, EXTRA DEPTH, PRESSED STEEL WITH KNOCKOUTS AND OF SIZE AND TYPE SUITABLE FOR THE INTENDED APPLICATION. NEMA 3R TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE SHEET TYPE 316 STAINLESS STEEL. BOXES SHALL BE CONTINUOUSLY WELDED SEAAND MOUNTING FEET. WELDS SHALL BE GROUND SMOOTH BOXES SHALL BE FLANGED AND SHALL NOT HAVE HOLES AND KNOCKOUTS. ACCEPTABLE MANUFACTURERS: HOFFMAN STAHLIN - DIVISION OF ROBROY IND. ENGLISH ELECTRIC, OR EQUAL

5. WIRES AND CABLES SHALL BE OF ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT DRAWN COPPER. ALL CONDUCTORS SHALL BE STRANDED, EXCEPT THAT CONTROL WIRING MAY BE SOLID. POWER WIRE SMALLER THAN NO. 12 AWG SHALL NOT BE USED. CONTROL AND SIGNAL WIRE SHALL BE NO.14 AWG NEC TYPE THHN/THWN, STRANDED. WIRE SHALL BE NEC TYPE THHN/THWN AS MANUFACTURED BY THE OKONITE CO.; CAROL CABLE CO. INC.; PIRELLI CABLE CORP. OR EQUAL.

6. RECEPTACLES INSTALLED OUTDOOR SHALL BE WEATHERPROOF WITH GFI PROTECTION. RECEPTACLES SHALL BE MADE BY THE FOLLOWING MANUFACTURER: HARVEY HUBBELL, INC.; PASS & SEYMOUR, INC. OR EQUAL. RECEPTACLES PLATES SHALL BE THE SAME MANUFACTURER AND SUITABLE FOR NEMA ENVIRONMENT.

7. DISCONNECT SWITCHES SHALL BE HEAVY_DUTY, QUICK_MAKE, QUICK_BREAK, VISIBLE BLADES, 600 VOLT, 3 POLE WITH FULL COVER INTERLOCK, INTERLOCK DEFEAT AND FLANGE MOUNTED OPERATING HANDLE. FUSED DISCONNECT SHALL BE EQUIPPED WITH FUSE SIZE AND TYPE AS SHOWN ON THE DRAWING. SWITCHES ALL CURRENT CARRYING PARTS SHALL BE COPPER. SWITCHES SHALL BE AS MANUFACTURED BY THE SQUARE D CO.; GENERAL ELECTRIC; CUTLER-HAMMER, OR EQUAL.

8. MOLDED CASE CIRCUIT BREAKER: 600 VOLT, 2 POLE FULLY RATED, INSULATED CASE, WITH INTEGRAL FULLY ADJUSTABLE SOLID STATE TRIP DEVICE. TRIP DEVICE SHALL BE TEMPERATURE INSENSITIVE AND HAVE THE FOLLOWING CHARACTERISTICS AND FUNCTIONS: INDEPENDENTLY ADJUSTABLE LONG TIME PICK_UP AND DELAY; INDEPENDENTLY ADJUSTABLE SHORT TIME PICK_UP AND DELAY WITH I2T IN AND OUT SWITCH, ADJUSTABLE INSTANTANEOUS; INDEPENDENTLY ADJUSTABLE GROUND FAULT PICK_UP AND DELAY; TRIP MODE TARGETS FOR OVER LOAD, SHORT CIRCUIT AND GROUND FAULT; LONG TIME PICK_UP LIGHT. CIRCUIT BREAKER SHALL BE SHALL HAVE A SHORT CIRCUIT RATING OF 42,000 RMS SYMMETRICAL AT RATED VOLTAGE. CIRCUIT BREAKER SHALL BE AS MANUFACTURED BY SQUARE D CO.; GENERAL ELECTRIC CO.; CUTLER- HAMMER, OR EQUAL.

PART 3 INSTALLATION:

12. ALL WIRE SHALL BE COLOR CODED OR CODED USING ELECTRICAL TAPE IN SITES WHERE COLORED INSULATION IS NOT AVAILABLE. WHERE TAPE IS USED AS THE IDENTIFICATION SYSTEM, IT SHALL BE APPLIED IN ALL JUNCTION BOXES, ND OTHER ACCESSIBLE INTERMEDIATE LOCATIONS AS WELL AS AT EACH TERMINATION. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

13. GALVANIZED RIGID STEEL CONDUIT (RGS) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

14. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

15. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

16. IN DAMP, WET OR WET/CORROSIVE AREAS INSTALL SURFACE MOUNTED DEVICES.

17. FIELD MOUNTED DISCONNECTS, PUSHBUTTON CONTROL STATIONS, ALARM PANELS, ENCLOSED STARTERS AND CIRCUIT BREAKERS, AUTOMATIC TRANSFER SWITCHES, POWER DISTRIBUTION PANELS, WIREWAYS, CONTACTORS, TERMINAL BOXES, JUNCTION AND PULL BOXES SHALL BE MOUNTED ON GALVANIZED OR STAINLESS STEEL STANDS UNLESS OTHERWISE NOTED OR ALLOWED BY ENGINEER.

18. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARDS AND CIRCUIT ID'S).

19. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABEL.

20. SUPPLEMENTAL GROUNDING CONDUCTOR LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

21. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

22. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

23. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

24. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

25. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

26. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

26. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

ELECTRICAL SYMBOLS

- EXOTHERMIC WELD
- COMPRESSION TYPE CONNECTION
- LUG CONNECTION/CONNECTION PER MANUFACTURERS SPECIFICATIONS
- DISCONNECT SWITCH
- METER
- CIRCUIT BREAKER
- GENERATOR
- GENERATOR RECEPTACLE
- ATS AUTOMATIC TRANSFER SWITCH
- MTS MANUAL TRANSFER SWITCH
- GROUNDING WIRE
- (X) INDICATES CODED NUMBER

ELECTRICAL ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BTS	BASE TRANSMISSION SYSTEM
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
DIA	DIAMETER
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
I	WALKING BEAM INTERLOCK
IGR	INTERIOR GROUND RING (HALO)
MIGB	MASTER ISOLATED GROUND BAR
PPC	POWER PROTECTION CABINET
RGS	RIDGID GALVINIZED STEEL
RWY	RACEWAY
SS	STAINLESS STEEL
TYP.	TYPICAL
AHJ	AUTHORITY HAVING JURISDICATION
UNO	UNLESS NOTED OTHERWISE
UG	UNDERGROUND
UE	UNDERGROUND ELECTRIC
UT	UNDERGROUND TELEPHONE

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NORTH CAROLINA PROFESSIONAL SEAL 044507 ENGINEER JESSICA E. JONES 1-12-18

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PROJECT NUMBER:	50096394
JOB NUMBER:	50096726
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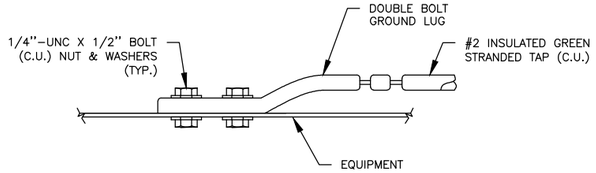
SHEET NAME:

ELECTRICAL NOTES

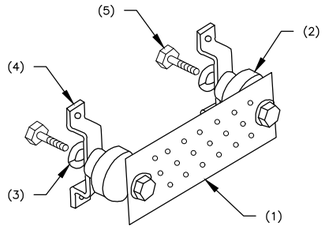
SHEET NUMBER:

E-1



CONNECTION TO EQUIPMENT DETAIL 1

SCALE: N.T.S.

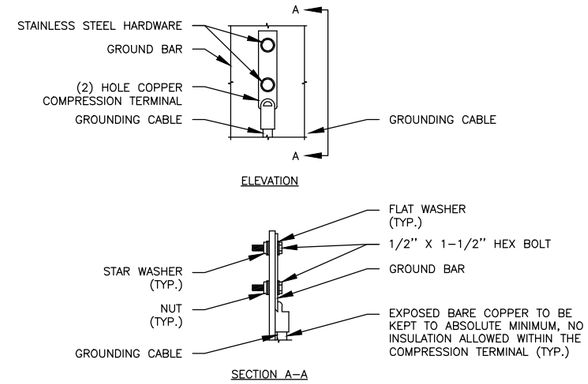


LEGEND:

1. GALVANIZED GROUND BAR, 1/4' X 4" X 24". SITE PRO P/N HDG42463–K OR APPROVED EQUAL. ALL HOLES ARE 7/16" UNLESS SPECIFIED OTHERWISE. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. STANDOFF INSULATORS (INCLUDED IN KIT).
3. GALVANIZED WASHER.
4. STAINLESS STEEL MOUNTING BRACKET (INCLUDED IN KIT).
5. TAMPER RESISTANT SS BOLT FOR GROUND BARS. SITE PRO P/N TRHK.

GROUND BAR DETAIL 2

SCALE: N.T.S.

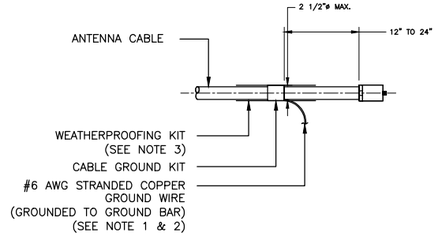


NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

GROUND BAR MECHANICAL CONNECTION DETAIL 3

SCALE: N.T.S.

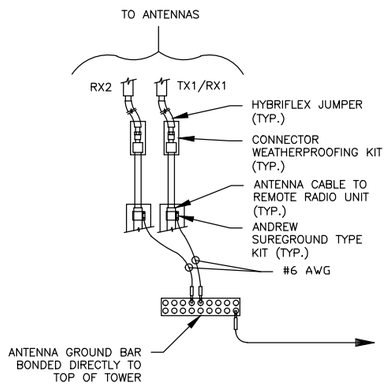


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO–HOLE LUG.
3. WEATHER PROOFING SHALL BE ANDREW TWO–PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

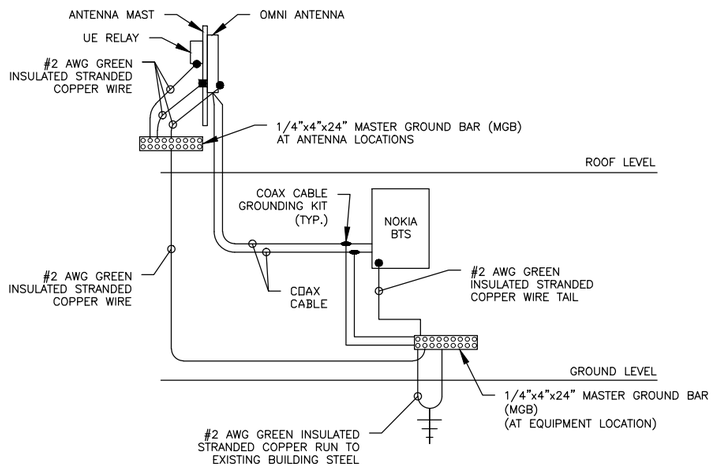
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE DETAIL 4

SCALE: N.T.S.



CONNECTION OF GROUND WIRE TO GROUND BAR DETAIL 5

SCALE: N.T.S.



GROUNDING DIAGRAM 6

SCALE: N.T.S.

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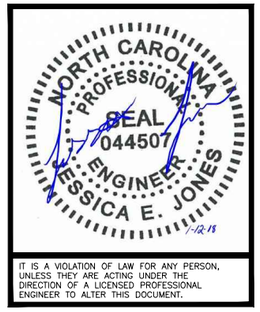

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GROUNDING DETAILS

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E–2