Ms. Hailee Perucci
Md7, LLC
10590 West Ocean Air Drive, South 300
San Diego, CA 92130
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Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Date: July 29, 2020

Subject: **Rigorous Structural Analysis Report**

AT&T Designation:
Site USID: 51674-A
Site FA: 10099215
Site Name: 88TH & WELBY

Turf Vendor Number: COL01340

Site Address: 9000 York Street, Thornton, Adams County, CO 80229
Site Coordinates: Latitude: 39° 51' 34.59" N, Longitude: 104° 57' 20.80" W
Tower Description: 56 ft – Monopole [Radian]

Morrison Hershfield Project Number: MD7-369R1 / 2020340

Dear Ms. Perucci,

Morrison Hershfield is pleased to submit this "**Rigorous Structural Analysis Report"** to determine the integrity of the above mentioned tower structure for the existing and proposed antenna and equipment noted.

This rigorous analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 107 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Our analysis demonstrates that the existing tower and foundation **ARE in conformance** with the requirements of the above noted standards under the effects of loading described.

Summary of Results		
Tower Structure	***25.5%***	***Sufficient***
Base Foundation	***11.9%***	***Sufficient***

We at *Morrison Hershfield* appreciate the opportunity of providing our continuing professional services to you and Md7, LLC. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
Morrison Hershfield

COLORADO LICENSED
GEOFREY LANCE COOKE
44803
PROFESSIONAL ENGINEER

G.Lance Cooke
2020.07.29
08:12:18-07'00'

G. Lance Cooke, P.E. (CO License No. 44803)
Senior Engineer

1.0 INTRODUCTION

This tower is a 56 ft monopole designed by Radian Communications, Inc., in September of 2005. The tower was originally designed for a basic wind speed of 105 mph and 0.5 inch radial ice thickness per ANSI/TIA/EIA-222-F.

2.0 ANALYSIS CRITERIA

The following design parameters have been used in our analysis:

Design Standard:	2018 International Building Code ANSI/TIA-222-H, Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures ASCE 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures AISC 325-15, Manual of Steel Construction ACI 318-14, Building Code Requirements for Structural Concrete ANSI/AWS D1.1-11, Structural Welding Code - Steel
Design Wind Speed:	107 mph (Ultimate 3-sec gust) with no radial ice
Risk Category:	II
Exposure Category:	C
Topographic Factor, K_{zt}:	1.0
Design Ice Thickness:	0.25 in
Wind Speed with Ice:	50 mph (Nominal 3-sec gust)
Seismic S_S:	0.201 [Neglected]
Seismic S_1:	0.057 [Neglected]
Service Wind Speed:	60 mph (Nominal 3-sec gust)

The structural analysis was based on the following documentation:

Table 1 – Documentation

Document	Description	Source
Tower & Foundation Design Drawings	Radian Communication Services, Inc., File No. 060-2175, dated 09/16/2005	Client
Construction Drawings	Fullerton Engineering Consultants, LLC, Site Name: 88th & Welby, dated 07/06/2020	Client
RF Data Sheet	AT&T Mobility, RFDS Name: COL01340 88th_&_Welby, dated 06/24/2020	Client

3.0 ANALYSIS LOADING

The existing and proposed antennas, transmission cables, antenna mounts and other equipment considered in this analysis were provided by the client and are noted in the attachments.

4.0 ANALYSIS PROCEDURE

tnxTower (Version 8.0.7.4), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is attached at the end of this report.

5.0 ASSUMPTIONS

The analysis provided by Morrison Hershfield is based on the theoretical capacity of the structure and is not a condition assessment of the tower. Morrison Hershfield has not performed an engineering inspection of the tower and the analysis was completed based on information supplied by the client. Morrison Hershfield has not made any independent determination of the accuracy of the information provided.

1) Tower and structures were built in accordance with the manufacturer's specifications and the applicable ANSI/TIA/EIA standard.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The tower is assumed to be in good condition and capable of supporting its full design capacity.
4) The foundation was properly designed and constructed for the original design loads.
5) The configuration of antennas, transmission cables, antenna mounts and other appurtenances are as specified in the attached Tower Analysis Summary Form and the referenced documents.
6) All existing/proposed antennas and antenna mounts are assumed to be adequate for the existing/proposed loads. Analysis of these antennas and antenna mounts is considered to be outside of the scope of this analysis. Morrison Hershfield has not performed an analysis of the existing/proposed antennas or antenna mounts.
7) The existing and proposed loading for AT&T Mobility were taken from their RF Data Sheet, RFDS Name: COL01340 88th_&_Welby, dated 06/24/2020, and from the construction drawings completed by Fullerton Engineering Consultants, LLC, Site Name: 88th & Welby, dated 07/06/2020, and are considered to be correct.
8) The foundation has been analyzed using information provided by the "Foundation Design" calculations attached to Radian Communication Services, Inc., File No. 060-2175, dated 09/16/2005, in combination with the Annex F: Presumptive soil parameters of TIA-222-H. This design is assumed to accurately represent the existing foundation and soil properties.

If any assumptions are not valid or have been made in error, this analysis is invalid. Morrison Hershfield should be notified to determine the effect on the structural integrity of the tower.

6.0 SUMMARY OF RESULTS

The following tables summarize the location and utilized percentage of available capacity for each component of the tower. With consideration to the appropriate safety factors, 100% represents the full capacity of the component. Percentages below 100% indicate available capacity and conformance of the component. Percentages above 100% indicate an overstressed situation requiring structural modification to ensure conformance with the applicable codes and standards.

Based on our analysis results, the **tower and foundation ARE within capacity** to support the loads under the current loading scenario.

Table 2 – Tower Section Capacity

Section No.	*Elevation ft*	*Component Type*	*Size*	*% Capacity*	*Pass Fail*
L1	56 - 26.46	Pole	TP24.085x18x0.1875	13.2	Pass
L2	26.46 - 0	Pole	TP29x23.092x0.1875	25.5	Pass
				Summary	
			Pole (L2)	25.5	Pass
			RATING =	**25.5**	**Pass**

Table 3 – Capacity of Additional Components

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	17.8	Pass
1	Base Plate		12.8	Pass
1	Foundation Soil Interaction	0	11.9	Pass
1	Foundation Structural		11.1	Pass

Structure Rating (max from all components) =	**11.9%**

Notes:
1) See additional documentation in "Additional Calculations" for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5.

7.0 RECOMMENDATIONS

1) All assumptions made in this analysis should be carefully reviewed. Morrison Hershfield should be contacted for any discrepancies so that a full assessment may be made to validate the results of this analysis.

ATTACHMENTS: Tower Loading, Tower Profile, Program Output, Coax Sketch, Additional Calculations and RF Data Sheet

TOWER LOADING

Tower Analysis Summary Form

General Info

Site Name	88TH & WELBY
Site Number	51674-A
FA Number	10099215
Date of Analysis	7/29/2020
Company Performing Analysis	Morrison Hershfield

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	56'	
Tower Manufacturer	Rohn	
Tower Model	N/A	
Tower Design & Drawings	Radian Communication Services, Inc., File No. 060-2175	9/16/2005
Foundation Design & Drawings	Radian Communication Services, Inc., File No. 060-2175	9/16/2005
Geotech Report	N/A	
Tower Mapping	N/A	
Previous Structural Analysis	N/A	
Construction Drawings	Fullerton Engineering Consultants, LLC, Site Name: 88th & Welby	7/6/2020

Steel Yield Strength (ksi)

Pole	65
Base Plate	60
Anchor Rods	F1554-105

Design Parameters

Design Code Used	ANSI/TIA-222-H 2018 IBC / ASCE 7-16
Location of Tower (County, State)	Adams, CO
Basic Wind Speed (mph)	107 (Ultimate 3-sec)
Ice Thickness (in)	0.25
Structure Classification (I, II, III)	II
Exposure Category (B, C, D)	C
Topographic Category (1 to 5)	1

1) The existing and proposed loading for AT&T Mobility were taken from their RF Data Sheet, RFDS Name: COL01340 88th_&_Welby, dated 06/24/2020, and from the construction drawings completed by Fullerton Engineering Consultants, LLC, Site Name: 88th & Welby, dated 07/06/2020, and are considered to be correct.

Analysis Results (% Maximum Usage)

Existing/Reserved + Proposed Condition	
Tower (%)	25.5%
Anchor Rods (%) / Base Plate (%)	17.8% / 12.8%
Foundation (%)	11.9%
Foundation Adequate?	YES

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	47	47	3	Panel	CommScope	SBNHH-1D65C	350/120/240	3	Unknown	Pipe Mount	24	Unknown	7/8"	Internal
AT&T Mobility*	35	35	3	Panel	Powerwave	7750	350/120/240	3	Unknown	Pipe Mount	-	-	-	-
AT&T Mobility*	35	35	6	TMA	Powerwave	LGP17501								
AT&T Mobility*	35	35	6	Diplexer	Powerwave	LGP21903								

*Note: Existing (3) Powerwave 7750 panels, (6) Powerwave LGP17501 TMAs and (6) Powerwave LGP21903 Diplexers at 35 ft elevation are to be removed prior to the installation of proposed loading. The remaining existing loading shall be re-used.

Proposed Loading

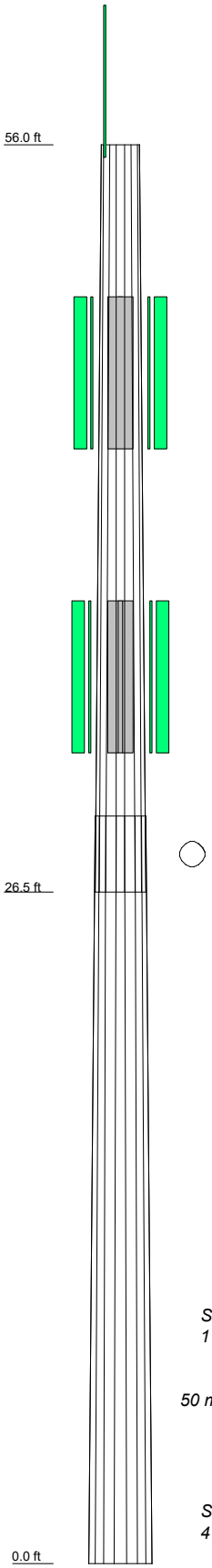
Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	35	35	3	Panel	CommScope	NNH4-65C-R6-V3	350/120/240	-	-	Same as existing	6	Unknown	7/8"	Internal

Note: Proposed loading is in addition to the remaining existing loading at 35 ft elevation.

TOWER PROFILE

Section	1	2
Length (ft)	29.54	29.46
Number of Sides	18	18
Thickness (in)	0.1875	0.1875
Socket Length (ft)	3.00	
Top Dia (in)	18.0000	23.0920
Bot Dia (in)	24.0850	29.0000
Grade	A572-65	
Weight (K)	1.2	1.5

2.8



ALL REACTIONS ARE FACTORED

AXIAL 10 K

SHEAR 1 K

MOMENT 51 kip-ft

TORQUE 0 kip-ft
50 mph WIND - 0.2500 in ICE

AXIAL 9 K

SHEAR 4 K

MOMENT 167 kip-ft

TORQUE 2 kip-ft
REACTIONS - 107 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	58.5	Side Arm Mount (E)	47
Stadium Lights	56	Pipe Mount (E)	35
Side Arm Mount	56	Pipe Mount (E)	35
SBNHH-1D65C (E)	47	Pipe Mount (E)	35
SBNHH-1D65C (E)	47	Side Arm Mount (E)	35
SBNHH-1D65C (E)	47	NNH4-65C-R6-V3 (P)	35
Pipe Mount (E)	47	NNH4-65C-R6-V3 (P)	35
Pipe Mount (E)	47	NNH4-65C-R6-V3 (P)	35
Pipe Mount (E)	47		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Adams County, Colorado.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 107 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 0.25 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 25.5%

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Job: MD7-369R1 / 2020340		
Project: 51674-A / 88TH & WELBY		
Client: Md7, LLC	Drawn by: DB	App'd:
Code: TIA-222-H	Date: 07/29/20	Scale: NTS
Path: C:\Users\DBallada\Desktop\MD7-369R1 SA\Analysis\MD7-369R1.eri		Dwg No. E-1

PROGRAM OUTPUT

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Adams County, Colorado.
Tower base elevation above sea level: 5178.00 ft.
Basic wind speed of 107 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 0.2500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs
Consider Moments - Horizontals
Consider Moments - Diagonals
Use Moment Magnification
Use Code Stress Ratios
√ Use Code Safety Factors - Guys
Escalate Ice
Always Use Max Kz
Use Special Wind Profile
Include Bolts In Member Capacity
Leg Bolts Are At Top Of Section
Secondary Horizontal Braces Leg
Use Diamond Inner Bracing (4 Sided)
SR Members Have Cut Ends
SR Members Are Concentric

Distribute Leg Loads As Uniform
Assume Legs Pinned
√ Assume Rigid Index Plate
√ Use Clear Spans For Wind Area
Use Clear Spans For KL/r
Retension Guys To Initial Tension
√ Bypass Mast Stability Checks
√ Use Azimuth Dish Coefficients
√ Project Wind Area of Appurt.
Autocalc Torque Arm Areas
Add IBC .6D+W Combination
Sort Capacity Reports By Component
Triangulate Diamond Inner Bracing
Treat Feed Line Bundles As Cylinder
Ignore KL/ry For 60 Deg. Angle Legs

Use ASCE 10 X-Brace Ly Rules
Calculate Redundant Bracing Forces
Ignore Redundant Members in FEA
SR Leg Bolts Resist Compression
All Leg Panels Have Same Allowable
Offset Girt At Foundation
√ Consider Feed Line Torque
Include Angle Block Shear Check
Use TIA-222-H Bracing Resist. Exemption
Use TIA-222-H Tension Splice Exemption

Poles

√ Include Shear-Torsion Interaction
Always Use Sub-Critical Flow
Use Top Mounted Sockets
Pole Without Linear Attachments
Pole With Shroud Or No Appurtenances
Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	56.00-26.46	29.54	3.00	18	18.0000	24.0850	0.1875	0.7500	A572-65 (65 ksi)
L2	26.46-0.00	29.46		18	23.0920	29.0000	0.1875	0.7500	A572-65 (65 ksi)

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Tower Hardware.										
Climbing Pegs	C	No	Surface Ar (CaAa)	56.00 - 10.00	1	1	-0.050 0.050	0.7050		1.80
Safety Line 3/8" ***	C	No	Surface Ar (CaAa)	56.00 - 3.00	1	1	0.000 0.000	0.3750		0.22

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
AT&T									
1-5/8" (E) ***	A	No	No	Inside Pole	47.00 - 8.00	24	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
1-5/8" (P) ***	B	No	No	Inside Pole	35.00 - 8.00	6	No Ice 1/2" Ice	0.00 0.00	0.82 0.82

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Tower Hardware									
Lightning Rod	C	From Leg	0.00 0.00 0.00	0.0000	58.50	No Ice 1/2" Ice	0.31 0.83	0.31 0.83	0.03 0.03
Stadium Lights	C	From Leg	1.00 0.00 0.00	0.0000	56.00	No Ice 1/2" Ice	38.00 50.00	38.00 50.00	2.00 3.00
Side Arm Mount	C	From Leg	0.50	0.0000	56.00	No Ice	4.71	2.35	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice	5.52	2.99	0.15
AT&T									
SBNHH-1D65C (E)	A	From Leg	1.00 0.00 0.00	0.0000	47.00	No Ice 1/2" Ice	5.67 6.20	3.40 3.91	0.05 0.12
SBNHH-1D65C (E)	B	From Leg	1.00 0.00 0.00	0.0000	47.00	No Ice 1/2" Ice	5.67 6.20	3.40 3.91	0.05 0.12
SBNHH-1D65C (E)	C	From Leg	1.00 0.00 0.00	0.0000	47.00	No Ice 1/2" Ice	5.67 6.20	3.40 3.91	0.05 0.12
Pipe Mount (E)	A	From Leg	0.50 0.00 0.00	0.0000	47.00	No Ice 1/2" Ice	2.14 3.07	2.14 3.07	0.07 0.08
Pipe Mount (E)	B	From Leg	0.50 0.00 0.00	0.0000	47.00	No Ice 1/2" Ice	2.14 3.07	2.14 3.07	0.07 0.08
Pipe Mount (E)	C	From Leg	0.50 0.00 0.00	0.0000	47.00	No Ice 1/2" Ice	2.14 3.07	2.14 3.07	0.07 0.08
Side Arm Mount (E) ***	C	None		0.0000	47.00	No Ice 1/2" Ice	2.62 3.30	2.62 3.30	0.29 0.41
Pipe Mount (E)	A	From Leg	0.50 0.00 0.00	0.0000	35.00	No Ice 1/2" Ice	2.20 3.33	2.20 3.33	0.09 0.10
Pipe Mount (E)	B	From Leg	0.50 0.00 0.00	0.0000	35.00	No Ice 1/2" Ice	2.20 3.33	2.20 3.33	0.09 0.10
Pipe Mount (E)	C	From Leg	0.50 0.00 0.00	0.0000	35.00	No Ice 1/2" Ice	2.20 3.33	2.20 3.33	0.09 0.10
Side Arm Mount (E) ***	C	None		0.0000	35.00	No Ice 1/2" Ice	2.62 3.30	2.62 3.30	0.29 0.41
NNH4-65C-R6-V3 (P)	A	From Leg	1.00 0.00 0.00	0.0000	35.00	No Ice 1/2" Ice	9.75 10.36	3.96 4.50	0.13 0.22
NNH4-65C-R6-V3 (P)	B	From Leg	1.00 0.00 0.00	0.0000	35.00	No Ice 1/2" Ice	9.75 10.36	3.96 4.50	0.13 0.22
NNH4-65C-R6-V3 (P) ***	C	From Leg	1.00 0.00 0.00	0.0000	35.00	No Ice 1/2" Ice	9.75 10.36	3.96 4.50	0.13 0.22

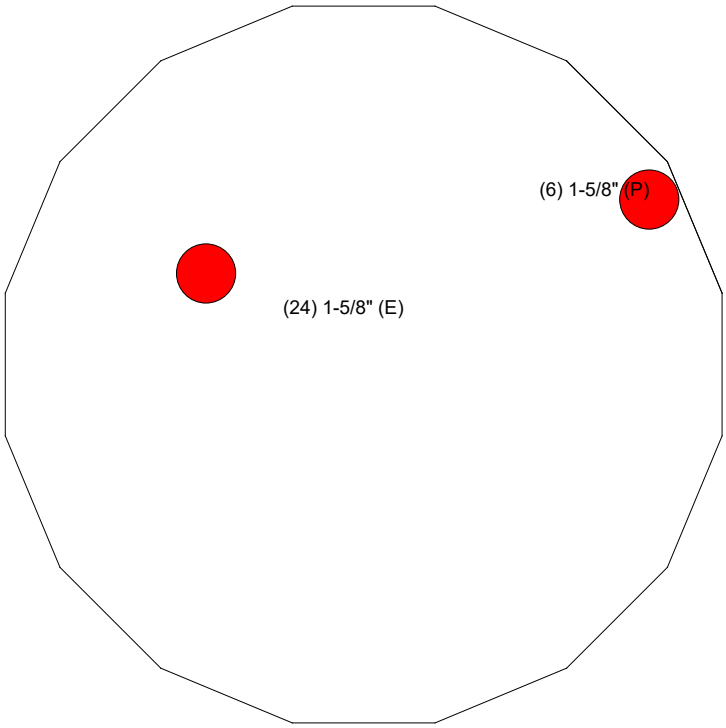
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$øP_{allow}$ K	% Capacity	Pass Fail
L1	56 - 26.46	Pole	TP24.085x18x0.1875	1	-6.30	851.00	13.2	Pass
L2	26.46 - 0	Pole	TP29x23.092x0.1875	2	-9.01	1053.25	25.5	Pass
							Summary	
						Pole (L2)	25.5	Pass
						RATING =	**25.5**	**Pass**

COAX SKETCH

Feed Line Plan
26'5-17/32"

Section @ 26'5-17/32"



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Client: Md7, LLC	Drawn by: DB	App'd:
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Path: C:\Users\DBallada\Desktop\MD7-369R1 SA\Analysis\MD7-369R1.eri		Dwg No. E-7

ADDITIONAL CALCULATIONS

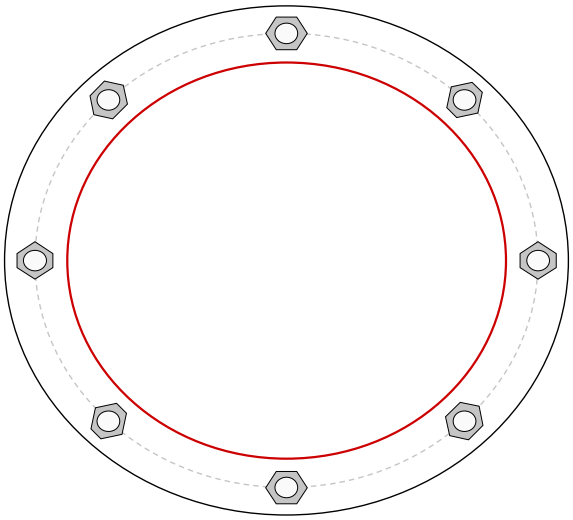
Monopole Base Plate Connection

Site Info	
Project No	MD7-369R1 / 2020340
Site Name	88TH & WELBY
Site ID	51674-A

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1

Applied Loads	
Moment (kip-ft)	166.71
Axial Force (kips)	9.01
Shear Force (kips)	4.10

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(8) 1-1/2" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 33.25" BC

Base Plate Data

37.25" OD x 1.5" Plate (A633 Gr. E; Fy=60 ksi, Fu=80 ksi)

Stiffener Data

N/A

Pole Data

29" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 31.18	ϕPn_c = 167	**Stress Rating**
Vu = 0.51	ϕVn = 75.15	**17.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	7.24	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**12.8%**	**Pass**

Drilled Pier Foundation

Site Info	
Project No	MD7-369R1 / 2020340
Site Name	88TH & WELBY
Site ID	51674-A

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	166.71	
Axial Force (kips)	9.01	
Shear Force (kips)	4.1	

Material Properties		
Concrete Strength, f'c:	4.5	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	20	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 20' below grade		
Pier Diameter	5	ft
Rebar Quantity	18	
Rebar Size	8	
Rebar Cage Diameter	51	in
Tie Size	5	

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	7.98	-
Soil Safety Factor	52.77	-
Max Moment (kip-ft)	195.24	-
Rating*	*2.4%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	517.54	-
End Bearing (kips)	132.54	-
Weight of Concrete (kips)	72.45	-
Total Capacity (kips)	650.08	-
Axial (kips)	81.46	-
Rating*	*11.9%*	-
Reinforced Concrete Check	*Compression*	*Uplift*
Critical Depth (ft from TOC)	7.77	-
Critical Moment (kip-ft)	195.21	-
Critical Moment Capacity	1673.82	-
Rating*	*11.1%*	-

Soil Interaction Rating*	**11.9%**
Structural Foundation Rating*	**11.1%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐

Soil Profile

Groundwater Depth	n/a	# of Layers	4

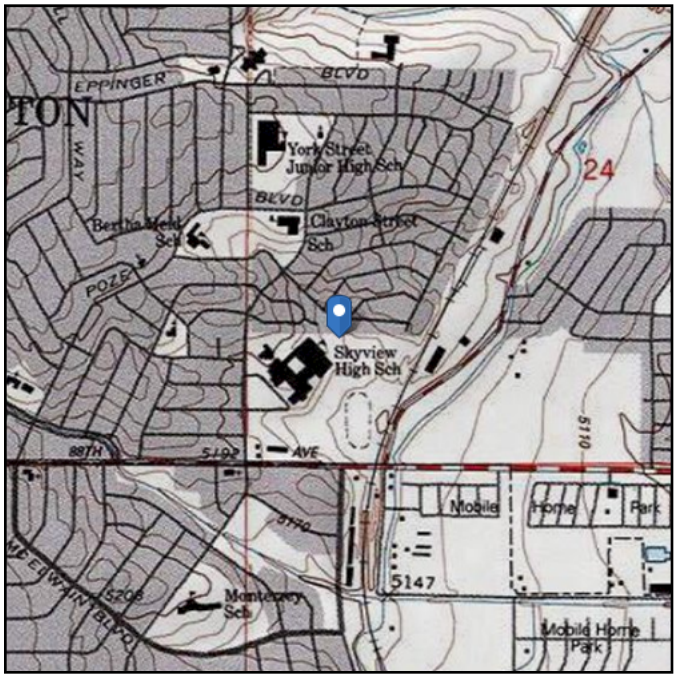
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	80	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	4.17	1.17	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	4.17	9	4.83	115	150	1.63	0	0.897	0.897					Cohesive
4	9	20	11	120	150	8	0	3.600	3.600			9		Cohesive

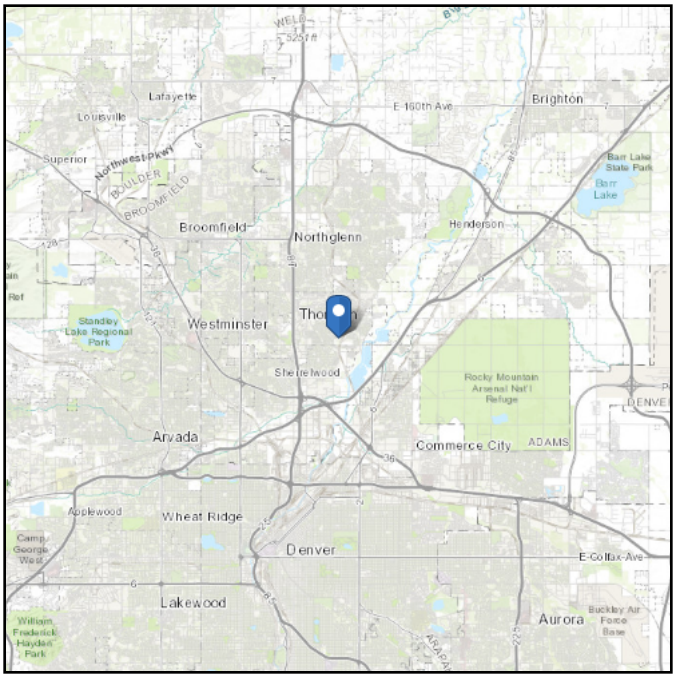
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 5177.58 ft (NAVD 88)
Latitude: 39.859608
Longitude: -104.955778





Wind

Results:

Wind Speed:	107 Vmph
10-year MRI	77 Vmph
25-year MRI	84 Vmph
50-year MRI	89 Vmph
100-year MRI	93 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Mon Jul 13 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

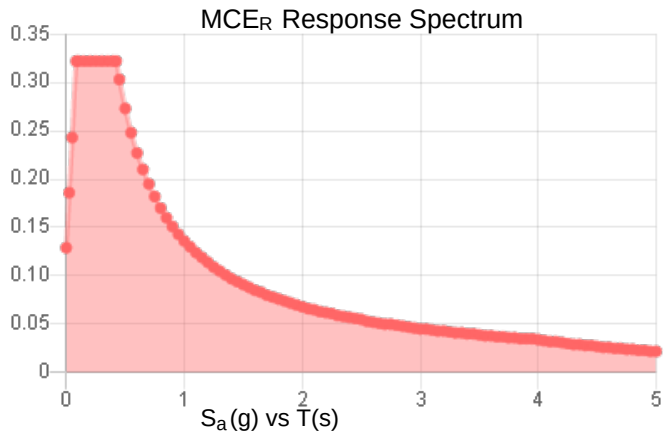
Seismic

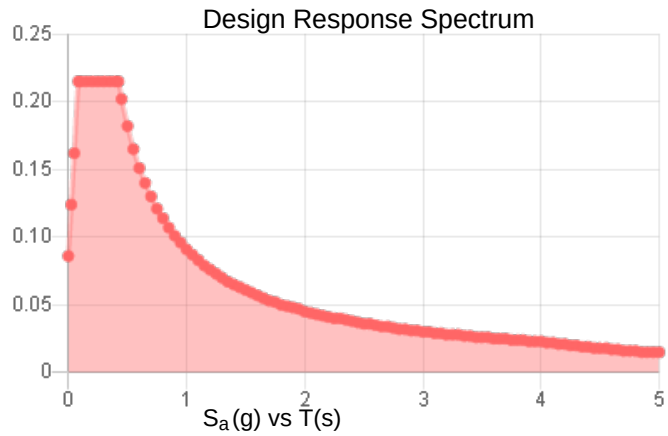
Site Soil Class: D - Stiff Soil

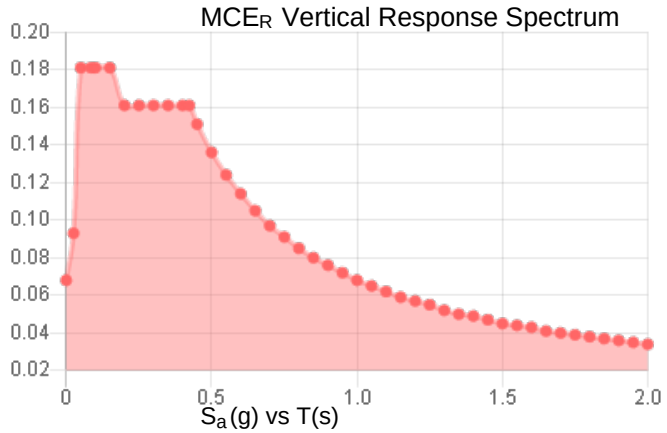
Results:

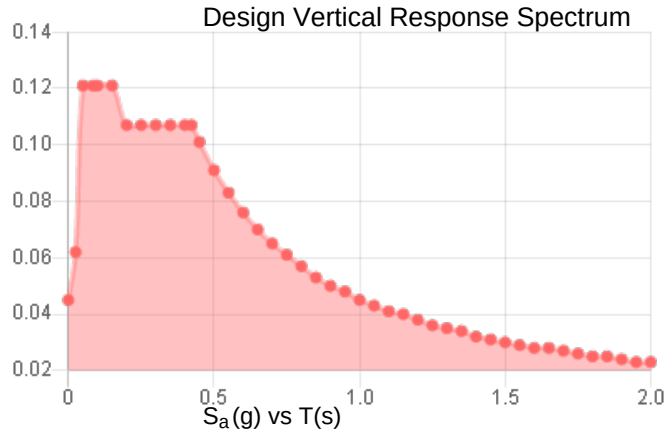
S_S :	0.201	S_{D1} :	0.091
S_1 :	0.057	T_L :	4
F_a :	1.6	PGA :	0.109
F_v :	2.4	PGA_M :	0.173
S_{MS} :	0.322	F_{PGA} :	1.582
S_{M1} :	0.136	I_e :	1
S_{DS} :	0.215	C_v :	0.703

Seismic Design Category B









Data Accessed: Mon Jul 13 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.25 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Jul 13 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

In the mountain west, ice thicknesses may exceed the mapped values in the foothills and passes. However, at elevations above 5,000 ft, freezing rain is unlikely.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

RF DATA SHEET

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	COL01340 88th_&_Welby	DATE:	01/07/2020	RF DESIGN ENG:	Roel Sigue
ISSUE:	Construction Ready RFDS	Approved? (Y/N):	Yes	RF DESIGN PHONE:	
REVISION:	2.00	RF MANAGER:	David Black	RF DESIGN EMAIL:	rs067v@att.com
INITIATIVE /PROJECT:	Add AHBCB to host 5GNR 850 and LTE 700 Band 29				

RF PERF ENG:		RFDS PROGRAM TYPE:	2020 LTE Next Carrier		
RF PERF PHONE:		RFDS TECHNOLOGY:	LTE		
RF PERF EMAIL:		STATE/STATUS:	Final/Approved		
ADDITIONAL WORKFLOW NOTIFICATIONS:		RFDS ID:	3577986		
RFDS VERSION:	2.00	Created By:	rs067v	Updated By:	ef6177
UMTS FREQUENCY:	850, 1900	Date Created:	12/16/2019 2:20:35 PM	Date Updated:	6/24/2020 6:53:10 PM
LTE FREQUENCY:	700, 850, 1900, AWS, WCS	EXPIRATION DATE:	01/01/2050		
5G FREQUENCY:	850	ESTIMATED SQIN:		Calculation ID:	
I-PLAN JOB # 1:	WR_-RUTH-19-08279	IPLAN PRD GRP || SUB GRP #1:	LTE Software Carrier || LTE 6C		
I-PLAN JOB # 2:	WR_-RUTH-19-08280	IPLAN PRD GRP || SUB GRP #2:	5G NR Radio || 5G NR 1DR-1		
I-PLAN JOB # 3:		IPLAN PRD GRP || SUB GRP #3:			
I-PLAN JOB # 4:		IPLAN PRD GRP || SUB GRP #4:			
I-PLAN JOB # 5:		IPLAN PRD GRP || SUB GRP #5:			
I-PLAN JOB # 6:		IPLAN PRD GRP || SUB GRP #6:			
I-PLAN JOB # 7:		IPLAN PRD GRP || SUB GRP #7:			
I-PLAN JOB # 8:		IPLAN PRD GRP || SUB GRP #8:			

Section 2 - LOCATION INFORMATION

USID:	51674	FA LOCATION CODE:	10099215	LOCATION NAME:	88TH & WELBY
REGION:	WEST	MARKET CLUSTER:	CO/UT/WY/MT/SO. ID	MARKET:	COLORADO
ADDRESS:	9000 YORK STREET	CITY:	THORNTON	STATE:	CO
ZIP CODE:	80229	COUNTY:	ADAMS	LONG (DEC. DEG.):	-104.9557800
LATITUDE (D-M-S):	39d 51m 34.59996s	LONGITUDE (D-M-S):	-104d -57m -20.808s	LAT (DEC. DEG.):	39.8596111
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	FROM THE LOCAL CINGULAR OFFICE TAKE I-25 NORTH TO 84TH AVE EXIT AND GO EAST ON 84TH TO WASHINGTON. TURN LEFT, NORTH ON WASHINGTON TO 88TH AVE. TURN RIGHT, EAST ON 88TH TO YORK ST. TURN LEFT, NORTH ON YORK ST. GO PAST SKYVIEW HIGH SCHOOL TO MOON CT. TURN RIGHT, SOUTHEAST TO ENTRANCE GATE TO BASEBALL FIELD, NORTH SIDE OF SKYVIEW HIGH SCHOOL. SITE IS LOCATED BEHIND THE NORTH DUGOUT. ACCESS CODE COMBINATION LOCK 4211. ACCESS CODE FOR COMPOUND IS 2075. NIU'S AND TELCO IN THE HOFFMAN BOX IN THE COMPOUND. ANTENNA LOCATION: AT 50 FT AGL RAD CENTER ON BALL FIELD LIGHT POLE SOUTH SIDE OF SITE. CONTACT: OPERATIONS MANAGER, PHIL RUSSELL TELE: 303-853-1022				

ORACLE PTN # 1:	3755A0T9PR	PACE JOB # 1:	MRUTH040430		
ORACLE PTN # 2:	3755A0TACD	PACE JOB # 2:	MRUTH040424		
ORACLE PTN # 3:		PACE JOB # 3:			
ORACLE PTN # 4:		PACE JOB # 4:			
ORACLE PTN # 5:		PACE JOB # 5:			
ORACLE PTN # 6:		PACE JOB # 6:			
ORACLE PTN # 7:		PACE JOB # 7:			
ORACLE PTN # 8:		PACE JOB # 8:			
BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:			
AM STUDY REQ'D (Y/N):	No	SEARCH_RING_ID:			
FREQ COORD:		BTA:		MSA / RSA:	
		LAC(UMTS):	38989		
RF DISTRICT:	22				
RF ZONE:	B	RNC(UMTS):	DNVRCOMDCRAR03		
		MME POOL ID(LTE):	FF29		
PARENT NAME(UMTS):	DENVER - ALU RNC 9370-03				

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	Yes	CGSA LOSS:		PCS REDUCED - UPS ZIP:	
CGSA - MINOR FILING NEEDED (Yes/No)::	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:	
CGSA - MAJOR FILING NEEDED (Yes/No):	No	CGSA SCORECARD UPDATED:			

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	GROUND ELEVATION (ft):		STRUCTURE TYPE:	UTILITY
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	55.00	FCC ASR NUMBER:	0
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	55.00		
LIGHTING TYPE:	NOT REQUIRED				

MARKET LOCATION 700 MHz Band:			
MARKET LOCATION 850 MHz Band:			
MARKET LOCATION 1900 MHz Band:			
MARKET LOCATION AWS Band:			
MARKET LOCATION WCS Band:			
MARKET LOCATION Future Band:			

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:		
SECTOR A E-911	ADAMS COUNTY COMMUNICATIONS CENTER	1057	Phase 2	INTRADO_LNGMONT						
SECTOR B	ADAMS COUNTY COMMUNICATIONS CENTER	1057	Phase 2	INTRADO_LNGMONT						
SECTOR C	ADAMS COUNTY COMMUNICATIONS CENTER	1057	Phase 2	INTRADO_LNGMONT						
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:		
SECTOR A E-911	ADAMS COUNTY COMMUNICATIONS CENTER	1057	Phase 2	INTRADO_LNGMONT						
SECTOR B	ADAMS COUNTY COMMUNICATIONS CENTER	1057	Phase 2	INTRADO_LNGMONT						
SECTOR C	ADAMS COUNTY COMMUNICATIONS CENTER	1057	Phase 2	INTRADO_LNGMONT						
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

SECTION 6/7 - BBU INFORMATION - existing

	BBU 1	BBU 2	BBU 3						
BBU RBS ID:	149318	256959	376477						
TECHNOLOGY:	UMTS	UMTS	LTE						
BBU NAME:	COU1340	COU1340_2	COL01340						
CELL ID / BCF:	COU1340	COU1340	COL01340						
BTA/TID:	110V	110U	110L						
4-9 DIGIT SITE ID:	1340	1340	1340						
COW OR TOY?:	No	No	No						
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED						
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	EDNB-LTE						
BTS LOCATION ID:	GROUND	GROUND	GROUND						
BASE STATION TYPE:	BASE	OVERLAY	OVERLAY						
EQUIPMENT NAME:	88TH & WELBY	88TH & WELBY	88TH & WELBY						
DISASTER PRIORITY:	0	0	2						
EQUIPMENT VENDOR:	ALU	ALU	NOKIA						
EQUIPMENT TYPE (Model):	LUCENT MACRO OUTDOOR	LUCENT MACRO OUTDOOR	FSM4 ASIA C1						
BASEBAND CONFIGURATION:			xxxxx / 1xAMIA / 3xABIA / 1xASIA						
MARKET STATE CODE:			CO						
NODE B NUMBER:	0	0	1340						
SIDEHAUL SWITCH VENDOR:									
SIDEHAUL SWITCH MODEL:									
SIDEHAUL SWITCH NAME:									
CSS - CTS COMMON ID:	COU1340	COU1340_2	COL01340						
CSS - SECONDARY FUNCTION ID:									

SECTION 6/7 - BBU INFORMATION - final

	BBU 1	BBU 2	BBU 3	BBU 4					
BBU RBS ID:	149318	256959	376477	794343					
TECHNOLOGY:	UMTS	UMTS	LTE	5G					
BBU NAME:	COU1340	COU1340_2	COL01340	COXN001340					
CELL ID / BCF:	COU1340	COU1340	COL01340	COXN001340					
BTA/TID:	110V	110W	110L	110L					
4-9 DIGIT SITE ID:	1340	1340	381340	20101340					
COW OR TOY?:	No	No	No	No					
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED					
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	EDNB-LTE	MACRO-CONVENTIONAL					
BTS LOCATION ID:	GROUND	GROUND	GROUND	GROUND					
BASE STATION TYPE:	BASE	OVERLAY	OVERLAY	OVERLAY					
EQUIPMENT NAME:	88TH & WELBY	88TH & WELBY	88TH & WELBY	88TH & WELBY					
DISASTER PRIORITY:	0	0	2	2					
EQUIPMENT VENDOR:	ALU	ALU	NOKIA	NOKIA					
EQUIPMENT TYPE (Model):	LUCENT MACRO OUTDOOR	LUCENT MACRO OUTDOOR	FSM4 ASIA C1	5GNR ASIK C1					
BASEBAND CONFIGURATION:			xxxxx / 1xAMIA / 3xABIA / 1xASIA	xxxxx / 1xAMIA / 1xABIL / 1xASIK					
MARKET STATE CODE:			CO	COX					
NODE B NUMBER:	0	0	1340	1340					
SIDEHAUL SWITCH VENDOR:									
SIDEHAUL SWITCH MODEL:									
SIDEHAUL SWITCH NAME:									
CSS - CTS COMMON ID:	COU1340	COU1340_2	COL01340	COXN001340					
CSS - SECONDARY FUNCTION ID:									

Section 8 - RBS/SECTOR ASSOCIATION - existing

	BBU 1	BBU 2	BBU 3																			
CTS Common ID	COU1340	COU1340_2	COL01340																			
Soft Sector IDs	COU1340A	COU1340D	COL01340_2A_1																			
	COU1340B	COU1340E	COL01340_2B_1																			
	COU1340C	COU1340F	COL01340_2C_1																			
		COU1340T	COL01340_3A_1																			
		COU1340U	COL01340_3B_1																			
		COU1340V	COL01340_3C_1																			
		COU1340X	COL01340_7A_1																			
		COU1340Y	COL01340_7A_2_F																			
		COU1340Z	COL01340_7B_1																			
			COL01340_7B_2_F																			
			COL01340_7C_1																			
			COL01340_7C_2_F																			
			COL01340_9A_1																			
			COL01340_9B_1																			
			COL01340_9C_1																			

Section 8 - RBS/SECTOR ASSOCIATION - final

	BBU 1	BBU 2	BBU 3	BBU 4																		
CTS Common ID	COU1340	COU1340_2	COL01340	COXN001340																		
Soft Sector IDs		COU1340X	COL01340_2A_1	COXN001340_N005A_1																		
		COU1340Y	COL01340_2B_1	COXN001340_N005B_1																		
		COU1340Z	COL01340_2C_1	COXN001340_N005C_1																		
			COL01340_3A_1																			
			COL01340_3B_1																			
			COL01340_3C_1																			
			COL01340_7A_1																			
			COL01340_7A_2_F																			
			COL01340_7A_3																			
			COL01340_7B_1																			
			COL01340_7B_2_F																			
			COL01340_7B_3																			
			COL01340_7C_ 3																			
			COL01340_7C_1																			
			COL01340_7C_2_F																			
			COL01340_9A_1																			
			COL01340_9B_1																			
			COL01340_9C_1																			

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850														
USEID (excluding Hard Sector)	51674.850.3G.1	51674.1900.3G.1	51674.850.3G.4	51674.1900.3G.3																					
SECTOR A SOFT SECTOR ID	COU1340X	COU1340A	COU1340T	COU1340D	COL01340_7A_1	COL01340_9A_1	COL01340_2A_1	COL01340_3A_1	COL01340_7A_2_F																
SECTOR B	COU1340Y	COU1340B	COU1340U	COU1340E	COL01340_7B_1	COL01340_9B_1	COL01340_2B_1	COL01340_3B_1	COL01340_7B_2_F																
SECTOR C	COU1340Z	COU1340C	COU1340V	COU1340F	COL01340_7C_1	COL01340_9C_1	COL01340_2C_1	COL01340_3C_1	COL01340_7C_2_F																
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850														
USEID (excluding Hard Sector)	51674.850.3G.1																								
SECTOR A SOFT SECTOR ID	COU1340X				COL01340_7A_1	COL01340_9A_1	COL01340_2A_1	COL01340_3A_1	COL01340_7A_2_F	COL01340_7A_3	COXN001340_N005A_1														
SECTOR B	COU1340Y				COL01340_7B_1	COL01340_9B_1	COL01340_2B_1	COL01340_3B_1	COL01340_7B_2_F	COL01340_7B_3	COXN001340_N005B_1														
SECTOR C	COU1340Z				COL01340_7C_1	COL01340_9C_1	COL01340_2C_1	COL01340_3C_1	COL01340_7C_2_F	COL01340_7C_3	COXN001340_N005C_1														
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850														
USEID (excluding Hard Sector)	51674.850.3G.1	51674.1900.3G.1	51674.850.3G.4	51674.1900.3G.3																					
SECTOR A CELL NUMBER					15	8	22	149	201																
SECTOR B					16	9	23	150	202																
SECTOR C					17	10	24	151	203																
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850														
USEID (excluding Hard Sector)	51674.850.3G.1																								
SECTOR A CELL NUMBER					15	8	22	149	201	204	25														
SECTOR B					16	9	23	150	202	205	49														
SECTOR C					17	10	24	151	203	208	73														
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 10 - CID/SAC - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850
SECTOR A CID/SAC	13401	13407	18401	13404							
SECTOR B	13402	13408	18402	13405							
SECTOR C	13403	13409	18403	13406							
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 10 - CID/SAC - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850
SECTOR A CID/SAC	13401										
SECTOR B	13402										
SECTOR C	13403										
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 11 - CURRENT RADIO COUNTS existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850
SECTOR A RADIO COUNTS	1	1	1	1	1	1	1	1	1		
SECTOR B	1	1	1	1	1	1	1	1	1		
SECTOR C	1	1	1	1	1	1	1	1	1		
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 13 - NEW/PROPOSED RADIO COUNTS

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	LTE 1ST 700	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 700	LTE 3RD 700	5G 1ST 850																
SECTOR A RADIO COUNTS	1	1	1	1	1	1	1	1	1	1	1																
SECTOR B	1	1	1	1	1	1	1	1	1	1	1																
SECTOR C	1	1	1	1	1	1	1	1	1	1	1																
SECTOR D																											
SECTOR E																											
SECTOR F																											
OMNI																											

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D65C				7750									
ANTENNA VENDOR	Commscope				Powerwave									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				55X11X4									
ANTENNA WEIGHT	66.1				39									
AZIMUTH	350				350									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	2				2									
FEEDER AMOUNT	6				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)		36												
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)					4	LGP 21903(3), LGP13519(1)								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)					2	LGP 17501								
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	AirScale Dual RRH 4T4R B12/14 320W AHLBA												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	B25 RRH4X30-4R												
RRH - AWS band (QTY/MODEL)	1	B66A RRH4X45-4R												
RRH - WCS band (QTY/MODEL)	1	RRH4x25-WCS-4R												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)	2	TBC0037F1V51-1												
Local Market Note 1														
Local Market Note 2														
Local Market Note 3	Alpha LTE Coords; Source: CD; Lat: 39.85961851; Lon: -104.9557898													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.A.700.4G.1,51674.A.700.4G.2		COL01340_7A_1,COL01340_7A_2_F	COL01340_7A_1,COL01340_7A_2_F	TX/RX	LTE 700	SBNHH-1D65C_716MHz_06DT	15.8		6	Bottom	AVA5-50A	90									
	PORT 2	51674.A.700.4G.1,51674.A.700.4G.2		COL01340_7A_1,COL01340_7A_2_F	COL01340_7A_1,COL01340_7A_2_F	TX/RX	LTE 700	SBNHH-1D65C_716MHz_06DT	15.8		6	Bottom	AVA5-50A	90									
	PORT 3	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

	PORT 4	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.A.850.3G.1		COU1340X, COU1340T	COU1340X, COU1340T	TX/RX	UMTS 850	7750_850_12	14.69		12	None	7/8" at 850 MHz	90		0							
	PORT 2	51674.A.850.3G.1		COU1340X, COU1340T	COU1340X, COU1340T	TX/RX	UMTS 850	7750_850_12	14.69		12	None	7/8" at 850 MHz	90		0							
	PORT 3			COU1340A, COU1340D	COU1340A, COU1340D	TX/RX	UMTS 1900	7750_1900_6	17.7		6	None	AVA5-50A_1900	90		0							
	PORT 4			COU1340A, COU1340D	COU1340A, COU1340D	TX/RX	UMTS 1900	7750_1900_6	17.7		6	None	AVA5-50A_1900	90		0							

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D65C				7750									
ANTENNA VENDOR	Commscope				Powerwave									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				55X11X4									
ANTENNA WEIGHT	66.1				39									
AZIMUTH	120				120									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	6				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)		36												
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)					4	LGP 21903								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)					2	LGP 17501								
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)	1	WCS-IMFQ-AMT												
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	AirScale Dual RRH 4T4R B12/14 320W AHLBA												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	B25 RRH4X30-4R												
RRH - AWS band (QTY/MODEL)	1	B66A RRH4X45-4R												
RRH - WCS band (QTY/MODEL)	1	RRH4x25-WCS-4R												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	TBC0037F1V51-1												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3	Alpha LTE Coords; Source: CD; Lat: 39.85961851; Lon: -104.9557898													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.B.700.4G.1,51674.B.700.4G.2		COL01340_7B_1,COL01340_7B_2_F	COL01340_7B_1,COL01340_7B_2_F	TX/RX	LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		8	Bottom	AVA5-50A	90									
	PORT 2	51674.B.700.4G.1,51674.B.700.4G.2		COL01340_7B_1,COL01340_7B_2_F	COL01340_7B_1,COL01340_7B_2_F	TX/RX	LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		8	Bottom	AVA5-50A	90									
	PORT 3	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 4	51674.B.AWS.4G.1,51674.B.		COL01340_2B_1,COL	COL01340_2B_1,COL	TX/RX	LTE 1900,LTE	SBNHH-	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V						

		WCS.4G.1,51674.B.1900.4G.1		01340_3B_1,COL01340_9B_1	01340_3B_1,COL01340_9B_1		AWS,LTE WCS	1D65C_2100MHz_03DT									51-1						
	PORT 5	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.B.850.3G.1		COU1340Y, COU1340U	COU1340Y, COU1340U	TX/RX	UMTS 850	7750_850_7	14.6		7	None	7/8" at 850 MHz	90	0	0							
	PORT 2	51674.B.850.3G.1		COU1340Y, COU1340U	COU1340Y, COU1340U	TX/RX	UMTS 850	7750_850_7	14.6		7	None	7/8" at 850 MHz	90	0	0							
	PORT 3			COU1340B, COU1340E	COU1340B, COU1340E	TX/RX	UMTS 1900	7750_1900_4	17.7		4	None	AVA5-50A_1900	90		0							
	PORT 4			COU1340B, COU1340E	COU1340B, COU1340E	TX/RX	UMTS 1900	7750_1900_4	17.7		4	None	AVA5-50A_1900	90		0							

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D65C				7750									
ANTENNA VENDOR	Commscope				Powerwave									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				55X11X4									
ANTENNA WEIGHT	66.1				39									
AZIMUTH	240				240									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	2				2									
FEEDER AMOUNT	6				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)		36												
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)					4	LGP 21903								
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)					2	LGP 17501								
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	AirScale Dual RRH 4T4R B12/14 320W AHLBA												
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1	B25 RRH4X30-4R												
RRH - AWS band (QTY/MODEL)	1	B66A RRH4X45-4R												
RRH - WCS band (QTY/MODEL)	1	RRH4x25-WCS-4R												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	TBC0037F1V51-1												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3	Alpha LTE Coords; Source: CD; Lat: 39.85961851; Lon: -104.9557898													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.C.700.4G.1,51674.C.700.4G.2		COL01340_7C_1,COL01340_7C_2_F	COL01340_7C_1,COL01340_7C_2_F	TX/RX	LTE 700	SBNHH-1D65C_716MHz_05DT	15.8		5	Bottom	AVA5-50A	90									
	PORT 2	51674.C.700.4G.1,51674.C.700.4G.2		COL01340_7C_1,COL01340_7C_2_F	COL01340_7C_1,COL01340_7C_2_F	TX/RX	LTE 700	SBNHH-1D65C_716MHz_05DT	15.8		5	Bottom	AVA5-50A	90									
	PORT 3	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 4	51674.C.AWS.4G.1,51674.C.		COL01340_2C_1,COL	COL01340_2C_1,COL	TX/RX	LTE 1900,LTE	SBNHH-	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V						

		WCS.4G.1,51674.C.1900.4G.1		01340_3C_1,COL01340_9C_1	01340_3C_1,COL01340_9C_1		AWS,LTE WCS	1D65C_2100MHz_00DT									51-1						
	PORT 5	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.C.850.3G.1		COU1340Z, COU1340V	COU1340Z, COU1340V	TX/RX	UMTS 850	7750_850_12	14.6		12	None	7/8" at 850 MHz	90	0	0							
	PORT 2	51674.C.850.3G.1		COU1340Z, COU1340V	COU1340Z, COU1340V	TX/RX	UMTS 850	7750_850_12	14.6		12	None	7/8" at 850 MHz	90	0	0							
	PORT 3			COU1340C, COU1340F	COU1340C, COU1340F	TX/RX	UMTS 1900	7750_1900_6	17.7		6	None	AVA5-50A_1900	90		0							
	PORT 4			COU1340C, COU1340F	COU1340C, COU1340F	TX/RX	UMTS 1900	7750_1900_6	17.7		6	None	AVA5-50A_1900	90		0							

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?	Yes													
ANTENNA MAKE - MODEL	SBNHH-1D65C				NNH4-65C-R6-V3									
ANTENNA VENDOR	Commscope				Commscope									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				96X19.6X7.8									
ANTENNA WEIGHT	66.1				102.1									
AZIMUTH	120				350									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	6				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CBC426T-DS-43												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)						RRH is shared with another band								
RRH - 850 band (QTY/MODEL)					1	AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1					TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		6	Bottom	AVA5-50A	90									
	PORT 2					TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		6	Bottom	AVA5-50A	90									
	PORT 3					TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

								DT															
	PORT 4					TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5					TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6					TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90									
	PORT 2	51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90									
	PORT 3	51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90									
	PORT 4	51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90									

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?	Yes													
ANTENNA MAKE - MODEL	SBNHH-1D65C				NNH4-65C-R6-V3									
ANTENNA VENDOR	Commscope				Commscope									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				96X19.6X7.8									
ANTENNA WEIGHT	66.1				102.1									
AZIMUTH	120				120									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	6				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CBC426T-DS-43												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)						RRH is shared with another band								
RRH - 850 band (QTY/MODEL)					1	AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.B.700.4G.1,51674.B.700.4G.2		COL01340_7B_1,COL01340_7B_2_F,COU1340Y	COL01340_7B_1,COL01340_7B_2_F,COU1340Y	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		8	Bottom	AVA5-50A	90									
	PORT 2	51674.B.700.4G.1,51674.B.700.4G.2		COL01340_7B_1,COL01340_7B_2_F,COU1340Y	COL01340_7B_1,COL01340_7B_2_F,COU1340Y	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		8	Bottom	AVA5-50A	90									
	PORT 3	51674.B.700.4G.1,51674.B.700.4G.2		COL01340_2B_1,COL01340_3B_1,COL013	COL01340_2B_1,COL01340_3B_1,COL013	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

				40_9B_1	40_9B_1			DT															
	PORT 4	51674.B.700.4G.1,51674.B.700.4G.2		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90									
	PORT 2	51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90									
	PORT 3	51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90									
	PORT 4	51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90									

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?	Yes													
ANTENNA MAKE - MODEL	SBNHH-1D65C				NNH4-65C-R6-V3									
ANTENNA VENDOR	Commscope				Commscope									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				96X19.6X7.8									
ANTENNA WEIGHT	66.1				102.1									
AZIMUTH	240				240									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	2				2									
FEEDER AMOUNT	6				2									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CBC78T-DS-43												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)						RRH is shared with another band								
RRH - 850 band (QTY/MODEL)					1	AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB								
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.C.700.4G.1,51674.C.700.4G.2		COL01340_7C_1,COL01340_7C_2_F,COU1340Z	COL01340_7C_1,COL01340_7C_2_F,COU1340Z	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_05DT	15.8		5	Bottom	AVA5-50A	90									
	PORT 2	51674.C.700.4G.1,51674.C.700.4G.2		COL01340_7C_1,COL01340_7C_2_F,COU1340Z	COL01340_7C_1,COL01340_7C_2_F,COU1340Z	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_05DT	15.8		5	Bottom	AVA5-50A	90									
	PORT 3	51674.C.700.4G.1,51674.C.700.4G.2		COL01340_2C_1,COL01340_3C_1,COL013	COL01340_2C_1,COL01340_3C_1,COL013	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

				40_9C_1	40_9C_1			DT															
	PORT 4	51674.C.700.4G.1,51674.C.700.4G.2		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90									
	PORT 2	51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90									
	PORT 3	51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90									
	PORT 4	51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90									

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D65C				NNH4-65C-R6-V3									
ANTENNA VENDOR	Commscope				Commscope									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				96X19.6X7.8									
ANTENNA WEIGHT	66.1				102.1									
AZIMUTH	350				350									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	2				0									
FEEDER AMOUNT	6				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)		36												
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CBC78T-DS-43												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	AirScale Dual RRH 4T4R B12/14 320W AHLBA				RRH is shared with another band								
RRH - 850 band (QTY/MODEL)					1	AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB								
RRH - 1900 band (QTY/MODEL)	1	B25 RRH4X30-4R												
RRH - AWS band (QTY/MODEL)	1	B66A RRH4X45-4R												
RRH - WCS band (QTY/MODEL)	1	RRH4x25-WCS-4R												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)	2	TBC0037F1V51-1												
Local Market Note 1														
Local Market Note 2														
Local Market Note 3	Alpha LTE Coords; Source: CD; Lat: 39.85961851; Lon: -104.9557898													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.A.850.3G.1,51674.A.700.4G.1,51674.A.700.4G.2		COL01340_7A_1,COL01340_7A_2_F,COU1340X	COL01340_7A_1,COL01340_7A_2_F,COU1340X	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_06DT	15.8		6	Bottom	AVA5-50A	90									
	PORT 2	51674.A.850.3G.1,51674.A.700.4G.1,51674.A.700.4G.2		COL01340_7A_1,COL01340_7A_2_F,COU1340X	COL01340_7A_1,COL01340_7A_2_F,COU1340X	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_06DT	15.8		6	Bottom	AVA5-50A	90									
	PORT 3	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

	PORT 4	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.A.AWS.4G.1,51674.A.WCS.4G.1,51674.A.1900.4G.1		COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	COL01340_2A_1,COL01340_3A_1,COL01340_9A_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.A.700.4G.1,51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90		0							
	PORT 2	51674.A.700.4G.1,51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90		0							
	PORT 3	51674.A.700.4G.1,51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90		0							
	PORT 4	51674.A.700.4G.1,51674.A.700.4G.tmp3,51674.A.850.5G.tmp1		COXN001340_N005A_1, COL01340_7A_1	COXN001340_N005A_1, COL01340_7A_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_06DT	15.6		6	Bottom	AVA5-50A	90		0							

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D65C				NNH4-65C-R6-V3									
ANTENNA VENDOR	Commscope				Commscope									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				96X19.6X7.8									
ANTENNA WEIGHT	66.1				102.1									
AZIMUTH	120				120									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	0				0									
FEEDER AMOUNT	6				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CBC426T-DS-43												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)	1	WCS-IMFQ-AMT												
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	AirScale Dual RRH 4T4R B12/14 320W AHLBA				RRH is shared with another band								
RRH - 850 band (QTY/MODEL)					1	AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB								
RRH - 1900 band (QTY/MODEL)	1	B25 RRH4X30-4R												
RRH - AWS band (QTY/MODEL)	1	B66A RRH4X45-4R												
RRH - WCS band (QTY/MODEL)	1	RRH4x25-WCS-4R												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)	2	TBC0037F1V51-1												
Local Market Note 1														
Local Market Note 2														
Local Market Note 3	Alpha LTE Coords; Source: CD; Lat: 39.85961851; Lon: -104.9557898													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.B.850.3G.1,51674.B.700.4G.1,51674.B.700.4G.2		COL01340_7B_1,COL01340_7B_2_F,COU1340Y	COL01340_7B_1,COL01340_7B_2_F,COU1340Y	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		8	Bottom	AVA5-50A	90									
	PORT 2	51674.B.850.3G.1,51674.B.700.4G.1,51674.B.700.4G.2		COL01340_7B_1,COL01340_7B_2_F,COU1340Y	COL01340_7B_1,COL01340_7B_2_F,COU1340Y	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_08DT	15.8		8	Bottom	AVA5-50A	90									
	PORT 3	51674.B.700.4G.1,51674.B.AWS.4G.1,51674.B.WCS.4G.1******		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

	PORT 4	51674.B.700.4G.1,51674.B.AWS.4G.1,51674.B.WCS.4G.1*****		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.B.AWS.4G.1,51674.B.WCS.4G.1,51674.B.1900.4G.1		COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	COL01340_2B_1,COL01340_3B_1,COL01340_9B_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_03DT	15.8		3	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.B.700.4G.1,51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90	0	0							
	PORT 2	51674.B.700.4G.1,51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90	0	0							
	PORT 3	51674.B.700.4G.1,51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90		0							
	PORT 4	51674.B.700.4G.1,51674.B.700.4G.tmp3,51674.B.850.5G.tmp1		COXN001340_N005B_1, COL01340_7B_1	COXN001340_N005B_1, COL01340_7B_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_08DT	15.7		8	Bottom	AVA5-50A	90		0							

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	SBNHH-1D65C				NNH4-65C-R6-V3									
ANTENNA VENDOR	Commscope				Commscope									
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1				96X19.6X7.8									
ANTENNA WEIGHT	66.1				102.1									
AZIMUTH	240				240									
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	46.75				35									
ANTENNA TIP HEIGHT	50.75				37									
MECHANICAL DOWNTILT	2				0									
FEEDER AMOUNT	6				4									
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	CBC78T-DS-43												
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	AirScale Dual RRH 4T4R B12/14 320W AHLBA				RRH is shared with another band								
RRH - 850 band (QTY/MODEL)					1	AIRSCALE DUAL RRH 4T4R B5/29 240W AHBCB								
RRH - 1900 band (QTY/MODEL)	1	B25 RRH4X30-4R												
RRH - AWS band (QTY/MODEL)	1	B66A RRH4X45-4R												
RRH - WCS band (QTY/MODEL)	1	RRH4x25-WCS-4R												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	2	TBC0037F1V51-1												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3	Alpha LTE Coords; Source: CD; Lat: 39.85961851; Lon: -104.9557898													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	51674.C.850.3G.1,51674.C.700.4G.1,51674.C.700.4G.2		COL01340_7C_1,COL01340_7C_2_F,COU1340Z	COL01340_7C_1,COL01340_7C_2_F,COU1340Z	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_05DT	15.8		5	Bottom	AVA5-50A	90									
	PORT 2	51674.C.850.3G.1,51674.C.700.4G.1,51674.C.700.4G.2		COL01340_7C_1,COL01340_7C_2_F,COU1340Z	COL01340_7C_1,COL01340_7C_2_F,COU1340Z	TX/RX	UMTS 850,LTE 700	SBNHH-1D65C_716MHz_05DT	15.8		5	Bottom	AVA5-50A	90									
	PORT 3	51674.C.700.4G.1,51674.C.AWS.4G.1,51674.C.WCS.4G.1***		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						

	PORT 4	51674.C.700.4G.1,51674.C.AWS.4G.1,51674.C.WCS.4G.1***		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 5	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
	PORT 6	51674.C.AWS.4G.1,51674.C.WCS.4G.1,51674.C.1900.4G.1		COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	COL01340_2C_1,COL01340_3C_1,COL01340_9C_1	TX/RX	LTE 1900,LTE AWS,LTE WCS	SBNHH-1D65C_2100MHz_00DT	15.8		0	Bottom	AVA5-50A	90		2	TBC0037F1V51-1						
ANTENNA POSITION 3	**PORT 1**	51674.C.700.4G.1,51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90	0	0							
	PORT 2	51674.C.700.4G.1,51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90	0	0							
	PORT 3	51674.C.700.4G.1,51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90		0							
	PORT 4	51674.C.700.4G.1,51674.C.700.4G.tmp3,51674.C.850.5G.tmp1		COXN001340_N005C_1, COL01340_7C_1	COXN001340_N005C_1, COL01340_7C_1	TX/RX	LTE 700,5G 850	NNH4-65C-R6-V3_850MHz_05DT	15.6		5	Bottom	AVA5-50A	90		0							

Diagram - Sector	A	Diagram File Name - WAT3577986_SectorA.png							
Atoll Site Name -	COL01340 88th_&_Welby	Location Name -	88TH & WELBY		Market -	COLORADO		Market Cluster -	CO/UT/WY/MT/SO. ID
Comments:									

Sector A

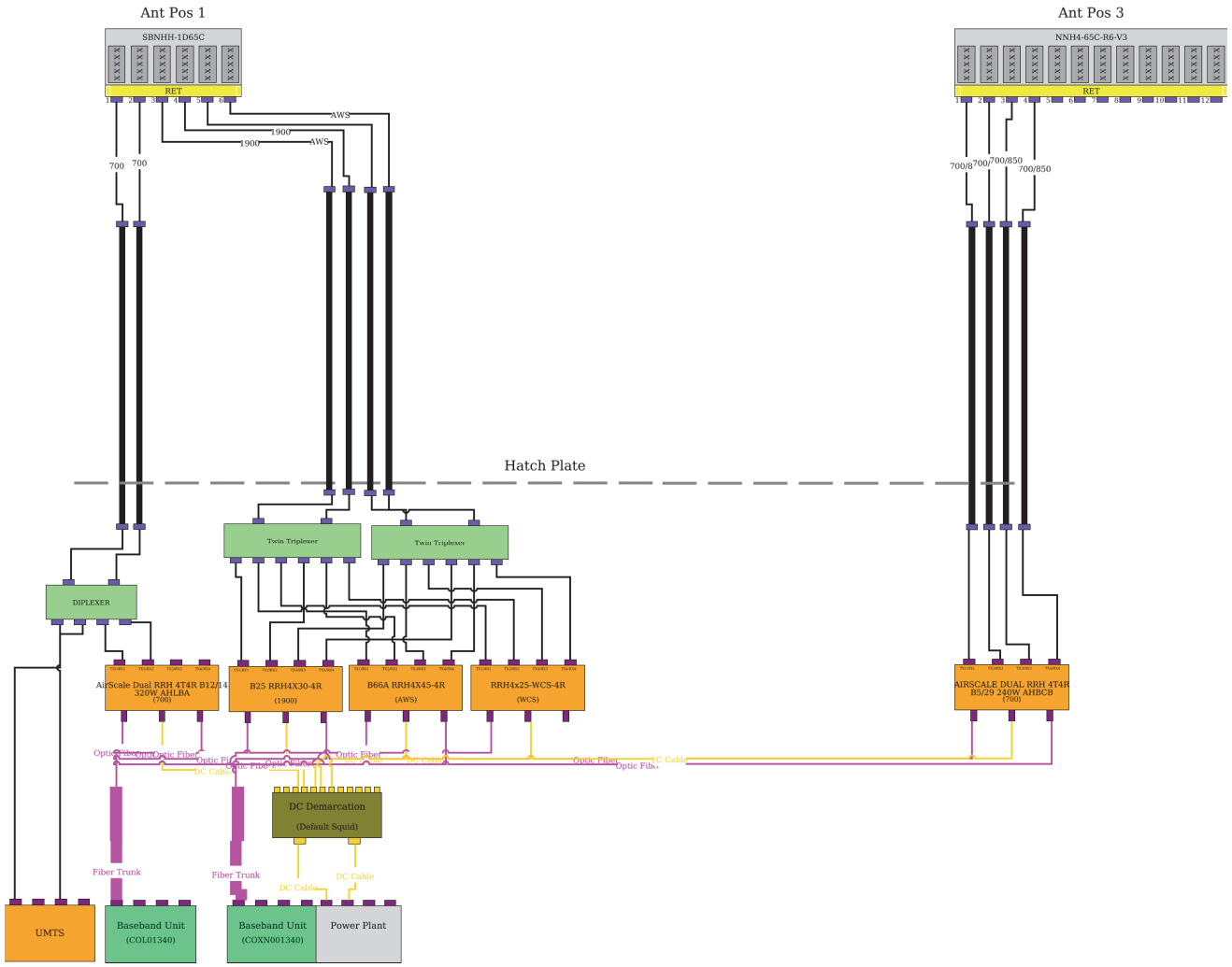


Diagram - Sector	B	Diagram File Name - WAT3577986_SectorB.png					
Atoll Site Name -	COL01340 88th_&_Welby	Location Name -	88TH & WELBY	Market -	COLORADO	Market Cluster -	CO/UT/WY/MT/SO. ID
Comments:							

Sector B

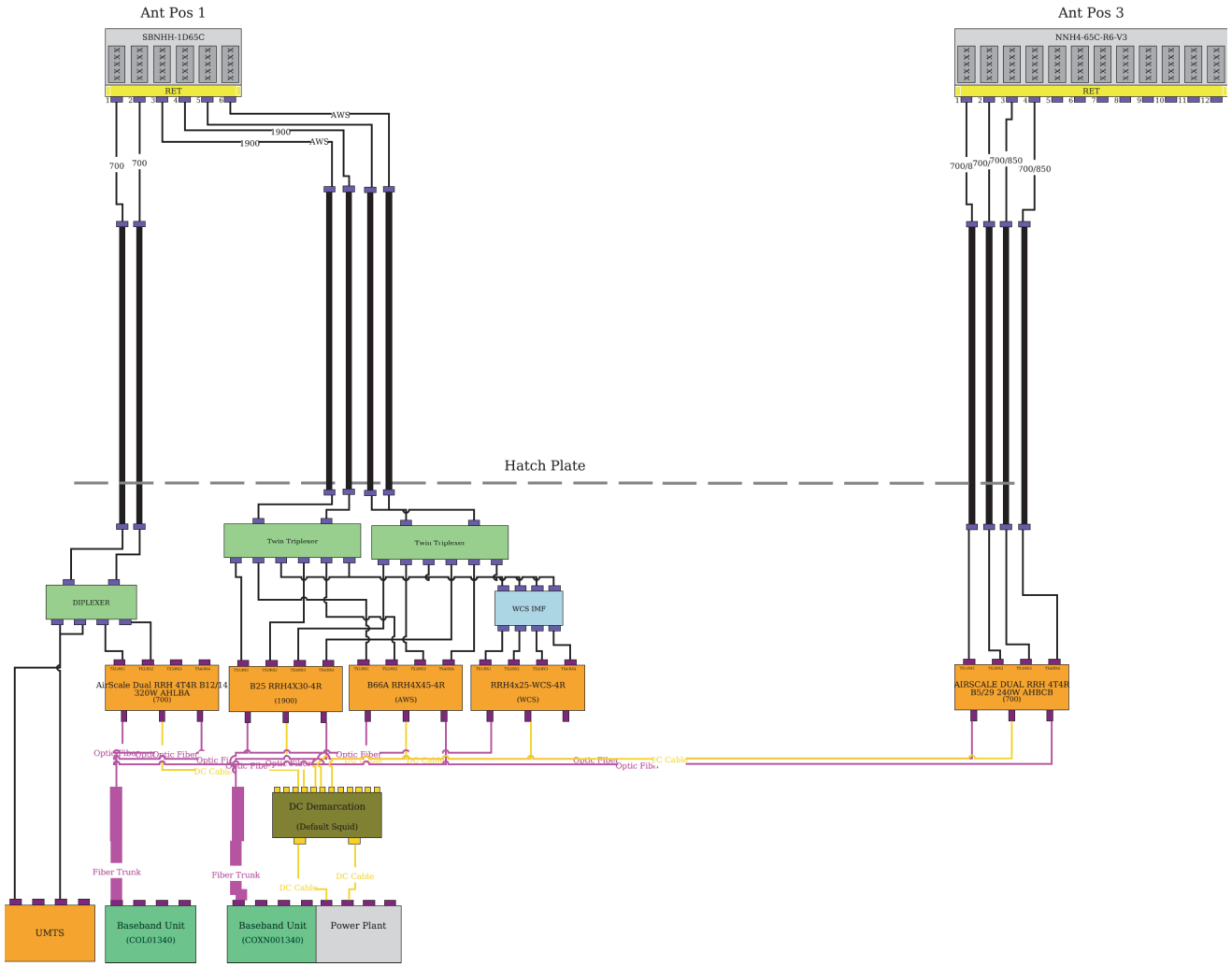
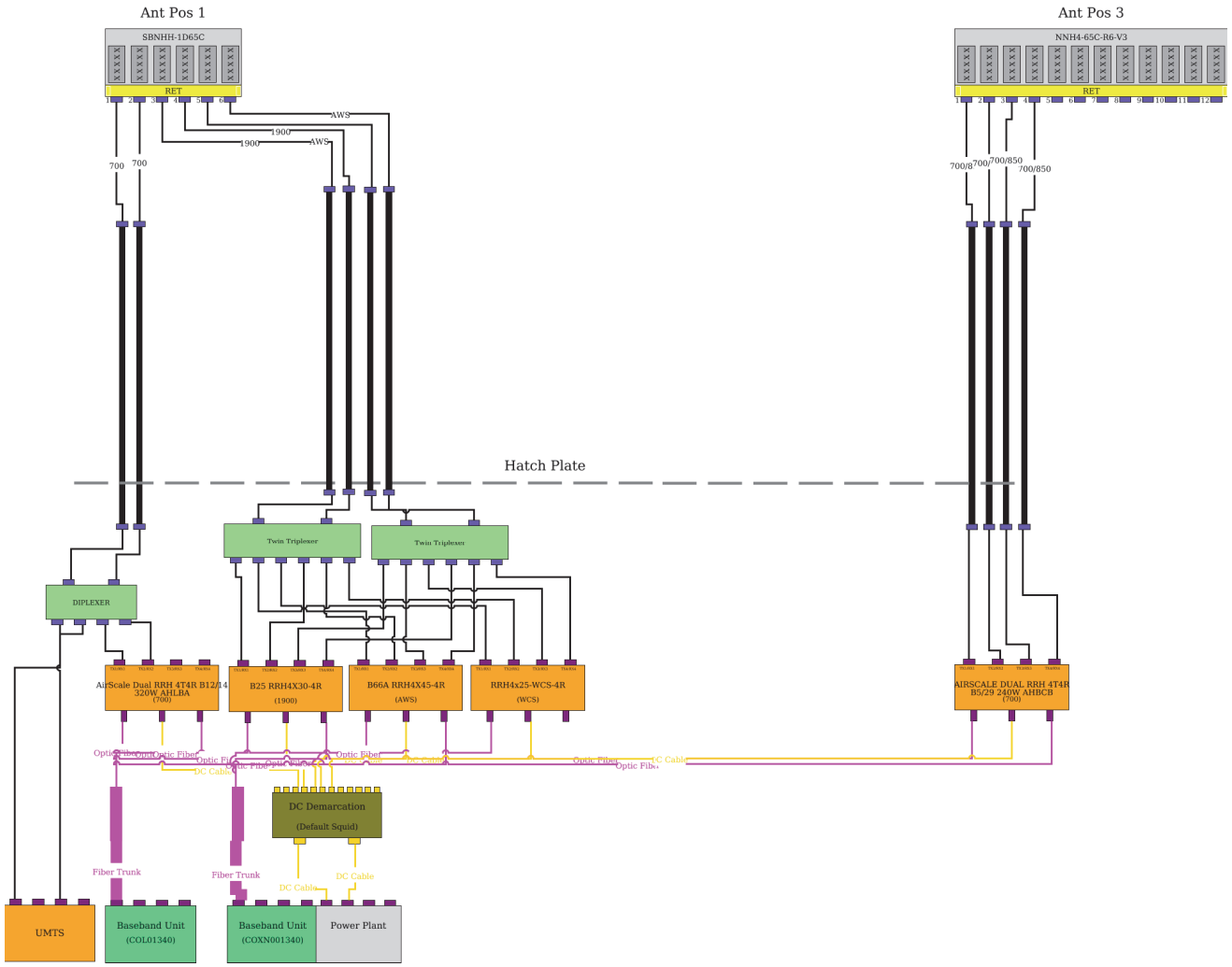


Diagram - Sector	C	Diagram File Name - WAT3577986_SectorC.png					
Atoll Site Name -	COL01340 88th_&_Welby	Location Name -	88TH & WELBY	Market -	COLORADO	Market Cluster -	CO/UT/WY/MT/SO. ID
Comments:							

Sector C



NOTES			
Date Time (Eastern)	Version	ATTUID	Note
6/24/2020 6:30:39 PM	2.00	ef6177	RFDS VERSION incremented.

WORKFLOW SUMMARY							
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments	PACE Status
01/10/2020	Preliminary In Progress	rs067v	Preliminary Submitted for Approval	DB978E	Promote		WR_-RUTH-19-08279 MRUTH040430 SUCCESS 01/10/2020 7:37:56 PM WR_-RUTH-19-08280 MRUTH040424 SUCCESS 01/10/2020 7:37:56 PM
03/04/2020	Preliminary Submitted for Approval	DB978E	Preliminary Approved	HP4388	Promote		
05/07/2020	Preliminary Approved	HP4388	Final RF Approval	RS067V	Promote		
06/24/2020	Final RF Approval	RS067V	Final RF Approval	EF6177	Reassign	Successfully Reassigned	
06/24/2020	Final RF Approval	EF6177	Final Approved	HP4388	Promote		WR_-RUTH-19-08279 PENDING 06/24/2020 6:54:06 PM WR_-RUTH-19-08280 PENDING 06/24/2020 6:54:06 PM
06/24/2020	Final Approved	ef6177	Final Approved	HP4388	Promote		