

## Land Use Application

Applicant(s): Lauren Oteri (agent)

Property Owner(s): US Cellular Corp

Mailing Address: 10700 Sikes Place Suite 360

Mailing Address: 8410 W Bryan Mawr Suite 700

Charlotte, NC 28277

Chicago, IL 60631

Phone: 980-202-6514

Phone: 773-399-8900

Email: loteri@tepgroup.net

Email:

### Location of property:

Township:

Range:

Parcel address: Dalles Mountain Road, Lyle, WA

Section & Qtr. Section: Se 1/4 Sec 25, T3 N R13 E WM

County: Klickitat

Tax Lot No(s): 03132500002100

Parcel Size (acres): 30.00

Existing use of parcel:

Use of adjacent parcels: N/a Vacant Area

**Project description:** This should include all proposed activities and details on size, height, exterior colors, and construction materials of proposed structures. Any areas of ground disturbance and landscaping details should also be described. It is important to describe all aspects of your project so that you may gain approval for all of the development activities you plan to do.

US Cellular will be adding antennas and RRUs to an existing cell tower. There will be no change to the tower height and no electrical work.

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**Application checklist:** The following is required to complete your application:

- ☐ Application form completed and signed
- ☐ Site plan
- ☐ Key viewing areas checklist, elevation drawings, and landscape details, if required
- ☐ Names and addresses of adjacent property owners, if required
- ☐ Any additional information as required

Signature of the property owner(s) indicates that the property owner(s) is/are aware that an application is being made on the subject property. **Signature of the property owner(s) also authorizes the Gorge Commission or the Commission's designee(s) reasonable access to the site in order to evaluate the application.**

**Applicant(s) signature:**

*Lauren Oteri*

date 6/19/2019

date

**Property owner(s) signature:**

date

*William J. Dettl* Personal Representative 8/12/2019  
of Estate of William Eddins

## STATE LOCATION



## SITE LOCATION



## PROJECT TEAM

## PROJECT CONTACT:

NAME U.S. CELLULAR CORPORATION  
ADDRESS 8410 W BRYN MAWR SUITE 700  
CITY, STATE, ZIP CHICAGO, IL 60631  
CONTACT JOHN MAUDLIN  
PHONE (888) 944-9400

## SITE ACQUISITION:

NAME TOWER ENGINEERING PROFESSIONALS  
ADDRESS 10700 SIKES PLACE, SUITE 360  
CITY, STATE, ZIP CHARLOTTE, NC 28277  
CONTACT MICHAEL McLENDON  
PHONE (919) 661-6351

## TOWER OWNER:

NAME US CELLULAR CORPORATION  
ADDRESS 8410 W. BRYN MAWR, SUITE 700  
CITY, STATE, ZIP CHICAGO, IL 60631  
CONTACT JOHN MAUDLIN  
PHONE (888) 944-9400

## CIVIL ENGINEER:

NAME TOWER ENGINEERING PROFESSIONALS, INC.  
ADDRESS 326 TRYON ROAD  
CITY, STATE, ZIP RALEIGH, NC 27603-3530  
CONTACT GRAHAM M. ANDRES, P.E.  
PHONE (919) 661-6351

## 97 LCAP Q318 DRAWINGS

SITE NAME:

## STACKER BUTTE

SITE NUMBER:

385344

SITE ADDRESS:

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

## PROJECT INFORMATION

LATITUDE: N 45° 42' 43.0" \*  
LONGITUDE: W 121° 06' 55.0" \*  
GROUND ELEVATION: 3,138'± (AMSL) \*\*  
\* INFORMATION PROVIDED USCC  
\*\* INFORMATION FROM GOOGLE EARTH

TOWER TYPE: 120' SELF-SUPPORT TOWER  
LOADING TYPE: 4T4R  
ACCESS ISSUES: 4321 COMBO FOR ACCESS RD  
GATE COMBO: 7-KEY



Know what's below.  
Call before you dig.

## INDEX OF SHEETS

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## STRUCTURAL NOTE

## STRUCTURAL STATUS:

- TOWER SA - PASSING (MAY 17, 2019)
- MOUNT SA - FAILING (MAY 17, 2019)
- MOUNT REPLACEMENT SA - (JUNE 10, 2019)

## SCOPE OF WORK

## TOWER SCOPE:

## EXISTING EQUIPMENT TO REMAIN:

- (4) AMPHENOL LPA-70080-8CF CDMA PANEL ANTENNAS
- (1) AMPHENOL BXA-70033-8CF CDMA PANEL ANTENNA
- (1) KATHREIN 80010456V02 CDMA PANEL ANTENNA
- (1) RAYCAP RUSDC-6267-PF-48
- (1) RAYCAP RUSDC-8999-P-48
- (5) NOKIA FRLB B12 RRH
- (2) NOKIA FXCA B5 RRH
- (10) KAEIUS COMBINER DBC0056F1V1-1
- (7) NOKIA FSES OVP
- (8) FH 1 1/2" CDMA COAX
- (1) 1 1/4" HYBRID CABLE
- (1) 1" POWER CABLE

## PROPOSED EQUIPMENT:

- (2) AMPHENOL TWIN658LU000G-T LTE PANEL ANTENNAS
- (1) DENGYO OCT8-2LX2HX-BW45 LTE PANEL ANTENNA
- (3) FRIJ B4 RRHs

## LTE JUMPERS:

- (3) FIBER JUMPERS FROM RAYCAP TO BAND 4 RRHs
- (3) POWER JUMPERS FROM RAYCAP TO BAND 4 RRHs
- (12) 1/2" JUMPERS FROM BAND 4 RRHs TO ANTENNAS

## TOP TOWER GROUND BAR:

CAN ACCOMMODATE ADDITIONAL GROUND LEADS.

## BOTTOM TOWER GROUND BAR:

NO PROPOSED CHANGES.

## SHELTER EXTERIOR SCOPE:

## ICE BRIDGE:

NO PROPOSED CHANGES.

## SHELTER COAX PORT:

NO PROPOSED CHANGES.

## SHELTER EXTERIOR GROUND BAR:

NO PROPOSED CHANGES.

## SHELTER INTERIOR SCOPE:

## PROPOSED EQUIPMENT:

NO PROPOSED CHANGES.

## EXISTING EQUIPMENT:

- (2) EXISTING RAYCAPS TO REMAIN IN SHELTER. CONTRACTOR TO VERIFY WITH USCC.

## CABLE TRAY:

NO PROPOSED CHANGES.

## SHELTER INTERNAL GROUND BAR:

NO PROPOSED CHANGES.

## SPECIAL REQUIREMENTS:

## ANTENNA AZIMUTHS:

PROPOSED LTE PANEL ANTENNAS TO BE INSTALLED TO THE DESIGN AZIMUTH. AZIMUTH CHANGES MUST BE PRE SCHEDULED WITH USCC FOR POTENTIAL E911 TESTING.

## ANTENNA MOUNT:

- (3) PROPOSED SABRE C1010857777 EHD V-BOOM SECTOR MOUNTS WITH (5) 2.5SCH40 x 9-FT MOUNT PIPES PER SECTOR TO REPLACE EXISTING SECTOR MOUNTS @ 118'-0".

## ANTENNA CONFIGURATION:

EXISTING CDMA PANEL ANTENNAS TO REMAIN. PROPOSED LTE ANTENNAS TO BE INSTALLED AT 118'-9" AND PLACED ON MOUNT POSITIONS 3, 6, AND 11.

## DECOMMISSIONED EQUIPMENT REMOVAL:

## EQUIPMENT REMOVAL:

- \*(4) KMW AM-X-CW-18-65-00T-RET LTE PANEL ANTENNAS
- \*(1) KMW ET-X-CW-45-19-IR-AT LTE PANEL ANTENNA

\* POST-INTEGRATION

PLANS PREPARED FOR:



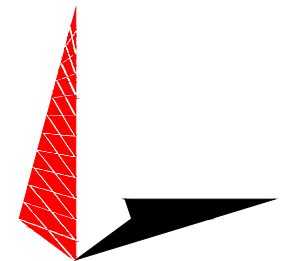
8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

385344  
STACKER BUTTE

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

PLANS PREPARED BY:



## TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351  
www.tepgroup.net

SEAL:



June 14, 2019

I	06-14-19	CONSTRUCTION
O	05-14-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

## TITLE SHEET

SHEET NUMBER:	REVISION:
T-1	1
	TEP#: 45957.216131





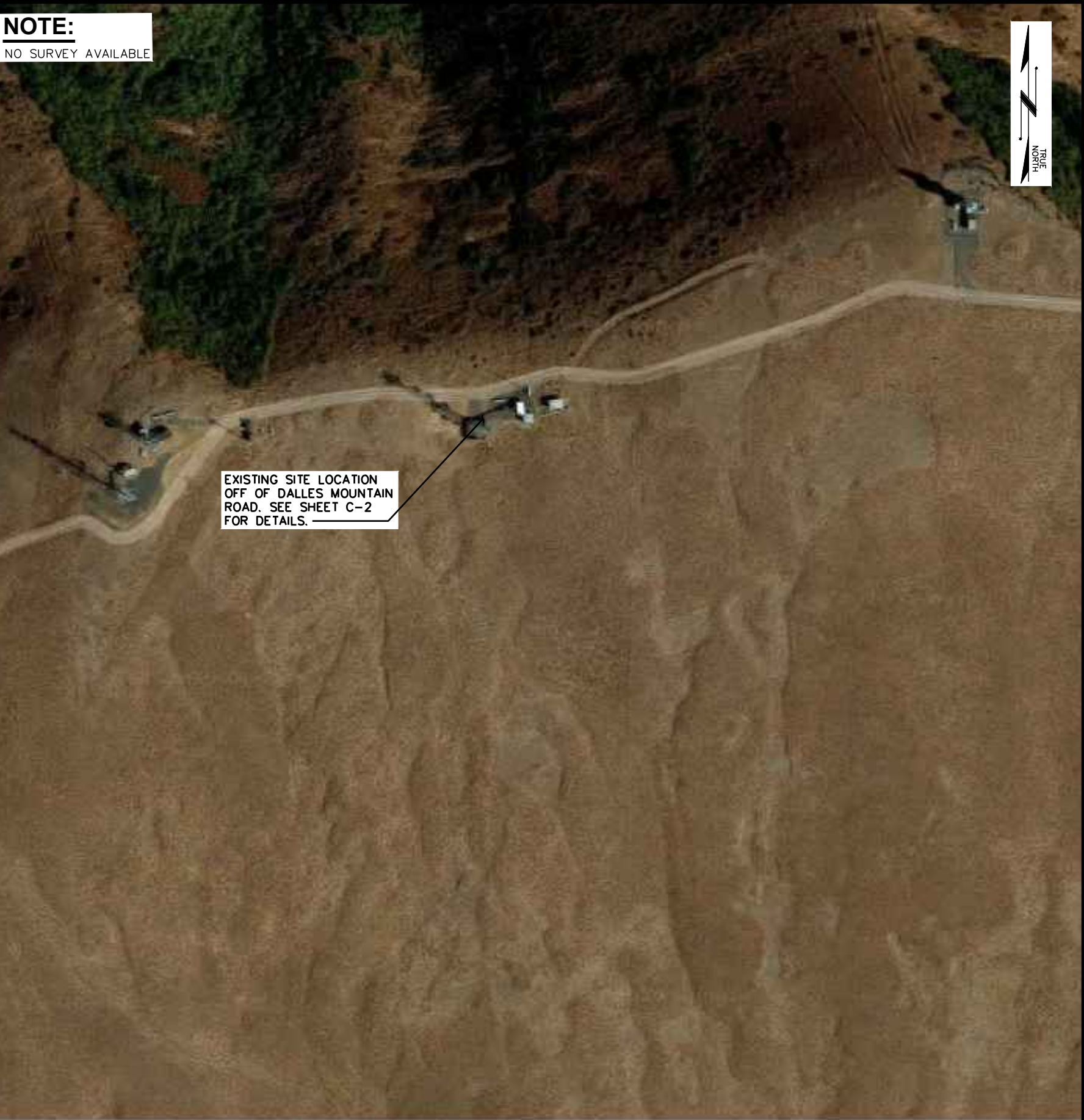
**BIRD'S EYE AERIAL OVERVIEW**



**SITE OVERVIEW**



**COMPOUND SIGNAGE**



**SITE PLAN**  
SCALE: N.T.S

PLANS PREPARED FOR:

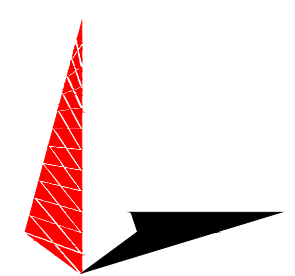
  
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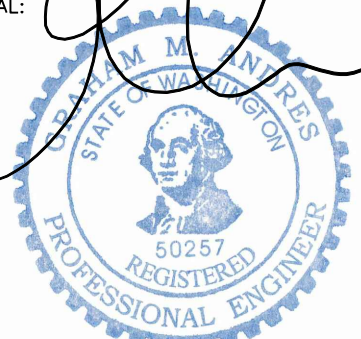
**385344  
STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
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326 TRYON ROAD  
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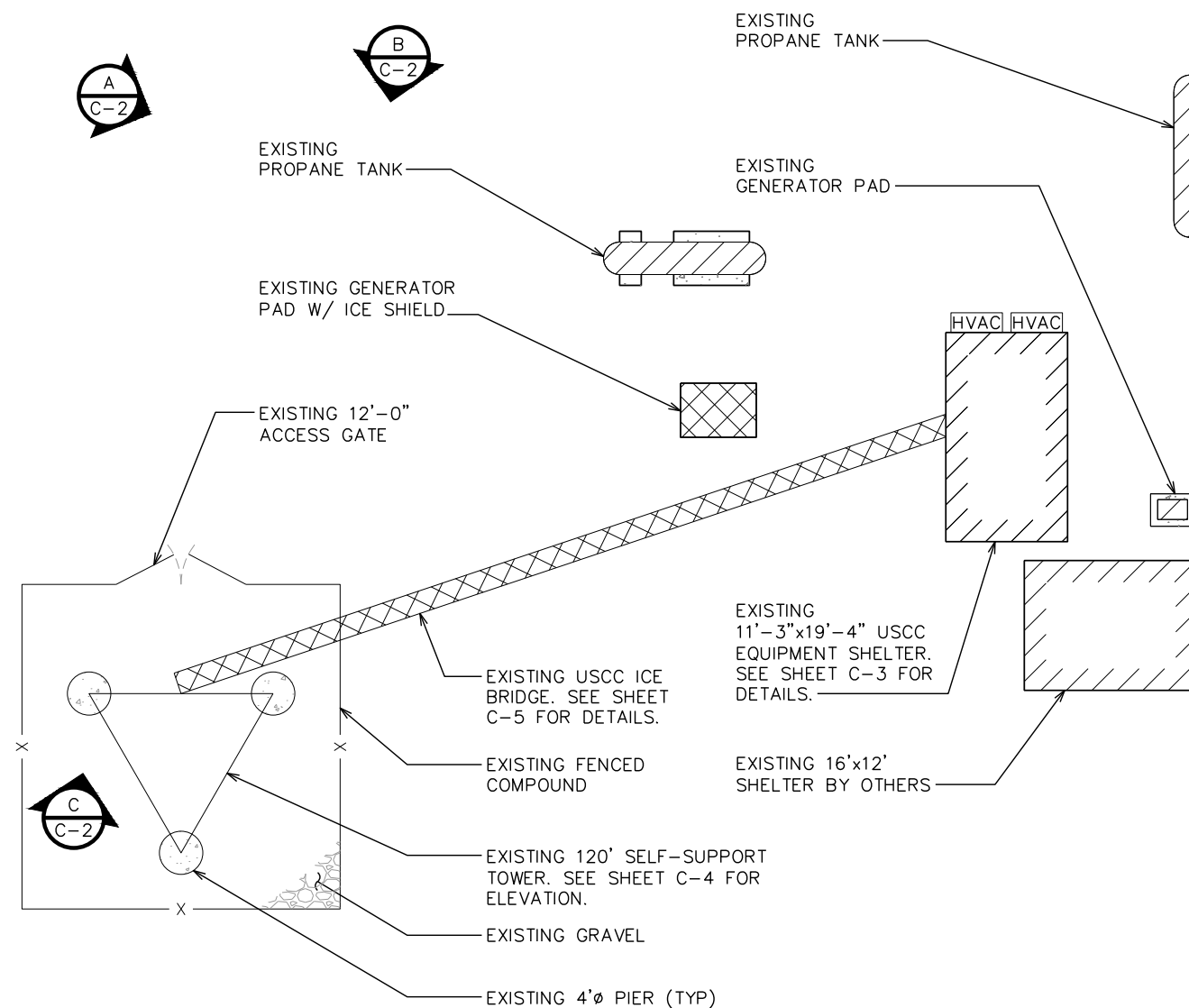
DRAWN BY:	GSK	CHECKED BY:	JPE
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SHEET TITLE:

**SITE PLAN**

SHEET NUMBER:	REVISION:
<b>C-1</b>	<b>1</b>
	TEP#: 45957.216131





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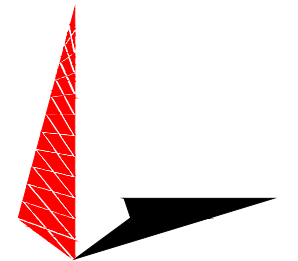
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**STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(KLICKITAT COUNTY)

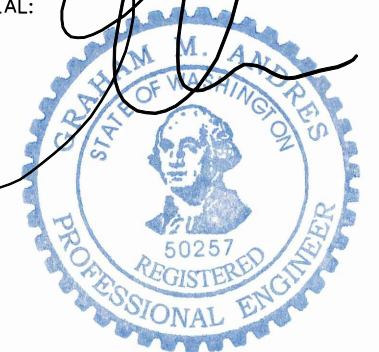
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SHEET TITLE:

## COMPOUND DETAIL

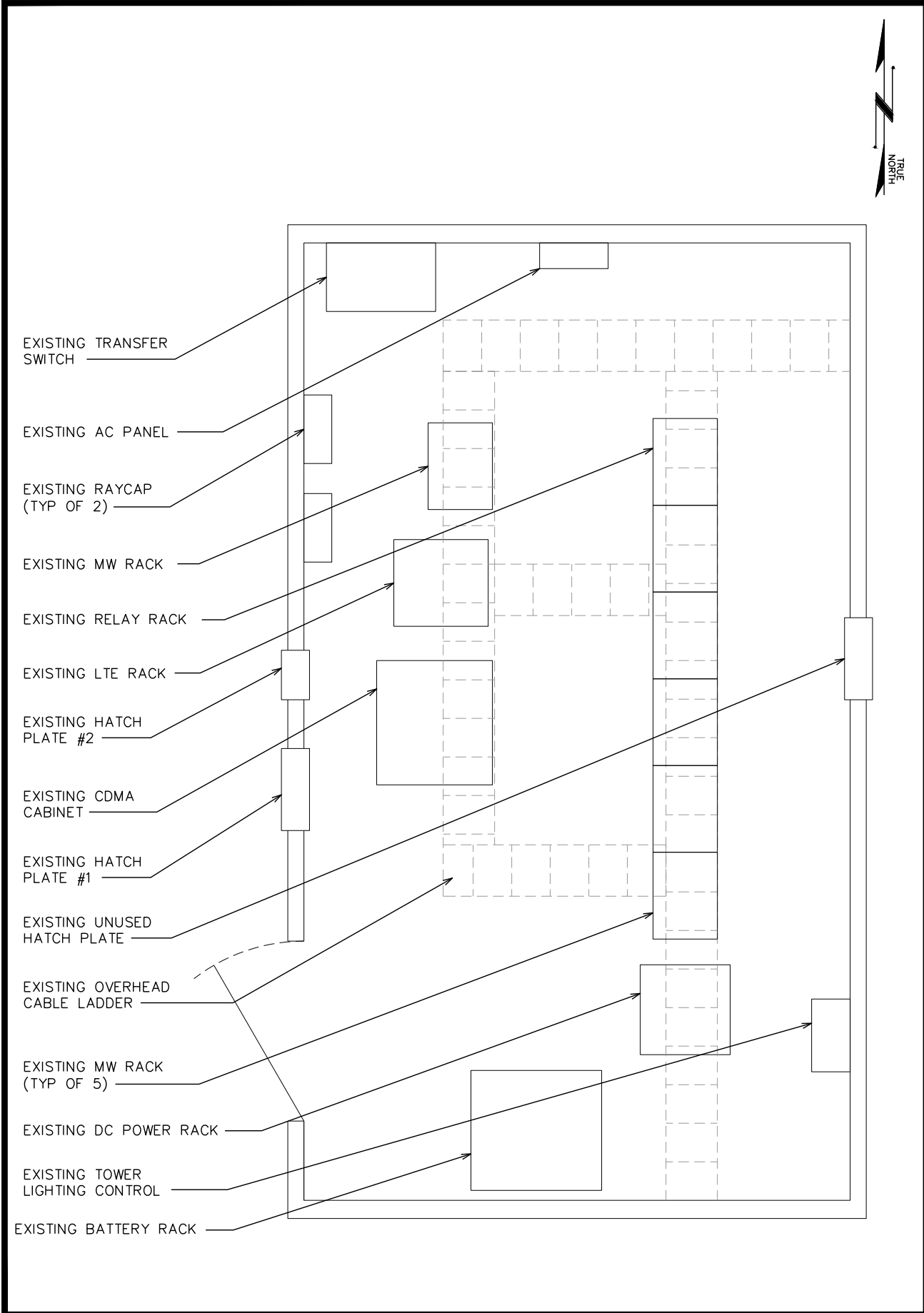
SHEET NUMBER:	REVISION:
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TEP#: 45957.216131

## COMPOUND DETAIL

SCALE:  $\frac{1}{16}" = 1'-0"$





**INTERIOR SHELTER LAYOUT**  
SCALE: N.T.S.



**EXISTING RAYCAPS LOCATION**  
SCALE: N.T.S.

PLANS PREPARED FOR:

8410 W. BRYN MAWR SUITE 700  
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PROJECT INFORMATION:

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**STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

PLANS PREPARED BY:

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SHEET TITLE:

**SHELTER  
DETAILS**

SHEET NUMBER:	REVISION:
<b>C-3</b>	<b>1</b>
TEP#: 45957.216131	



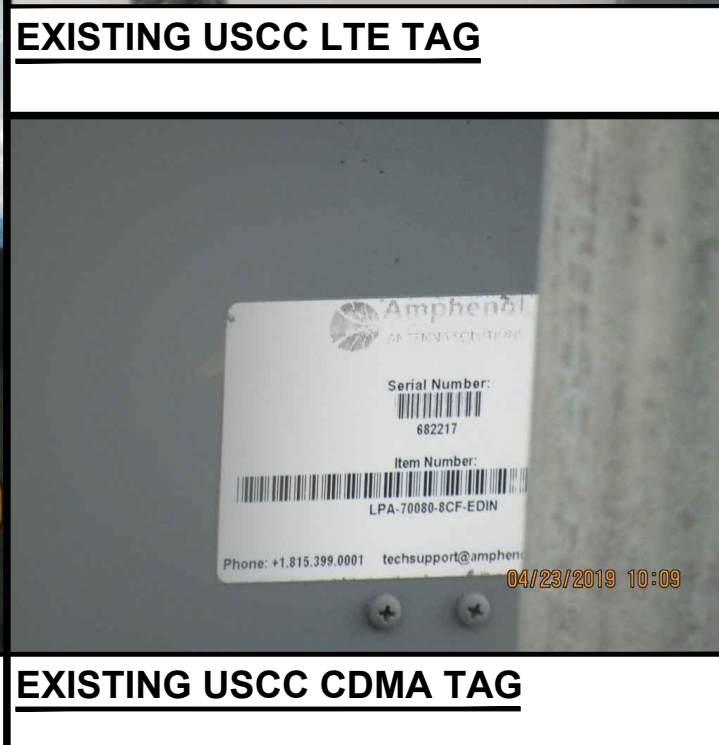
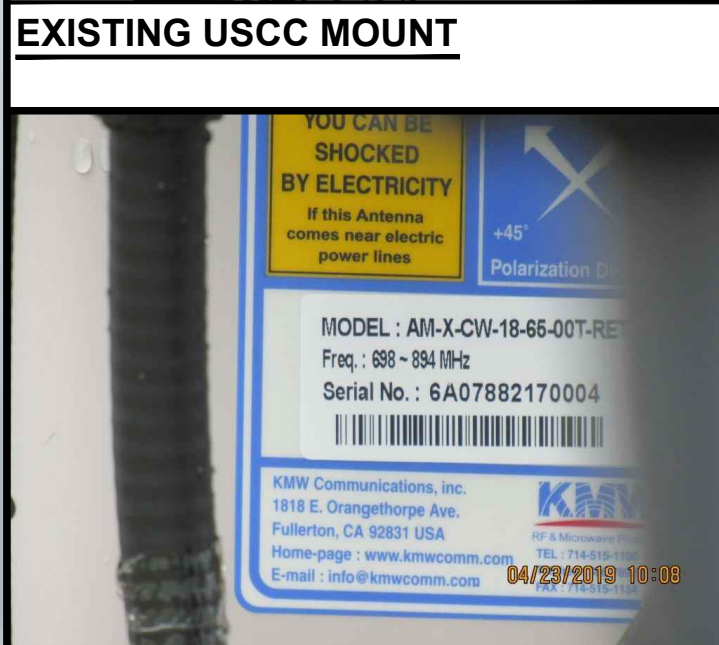
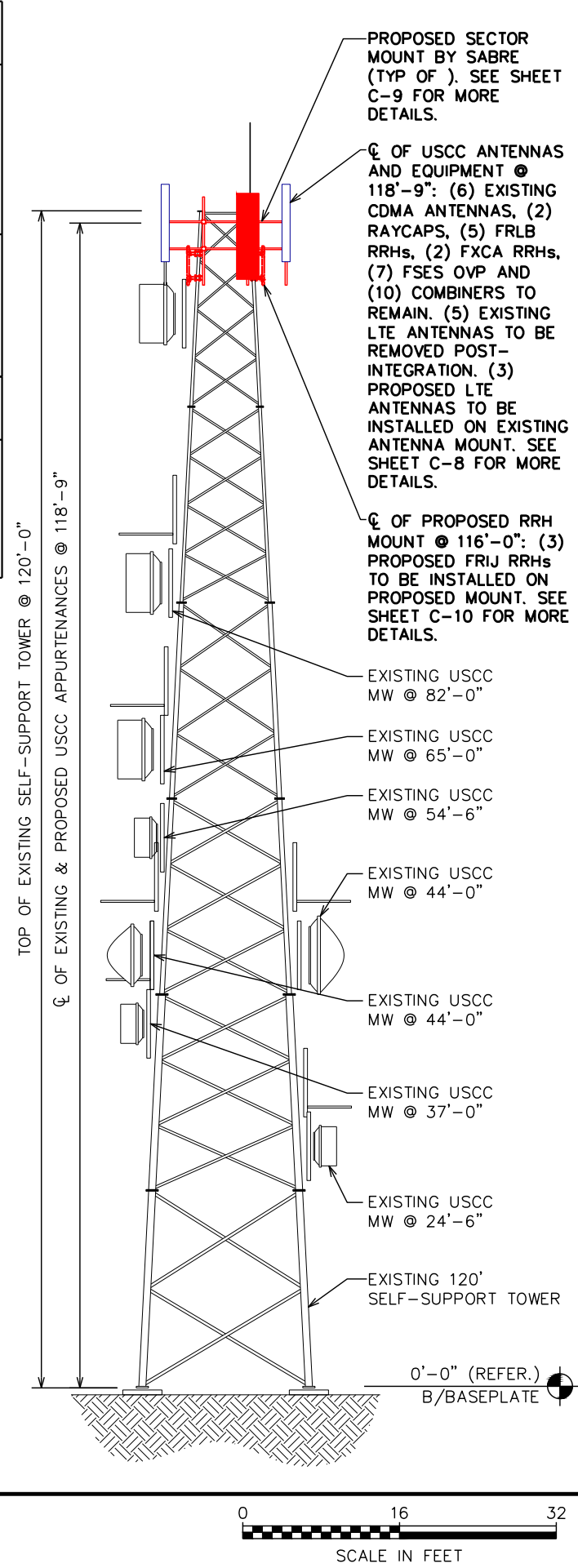
JUMPER INFO	
FIBER/POWER JUMPER LENGTH FROM RAYCAP TO RRH	
	BAND 4
ALPHA SECTOR:	15-FT
BETA SECTOR:	15-FT
GAMMA SECTOR:	15-FT
1/2" COAX JUMPER FROM B4 RRH TO ANTENNA	
ALPHA SECTOR:	20-FT
BETA SECTOR:	20-FT
GAMMA SECTOR:	20-FT
RET JUMPER INFO	
RRH TO ANTENNA	
ALPHA SECTOR:	10-M
BETA SECTOR:	10-M
GAMMA SECTOR:	10-M

- NOTES:**
- LCAP EQUIPMENT TO BE INSTALLED PRIOR TO LTE DECOMMISSION.
  - USCC CENTERLINE OVER 200-FT REQUIRES MIDDLE GROUND BAR.

PROPOSED LTE PANEL TO BE INSTALLED:	<div></div>
EXISTING CDMA PANEL TO REMAIN:	<div></div>

**PROPOSED TOWER ELEVATION**

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



PLANS PREPARED FOR:

**U.S. Cellular**

8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

**385344  
STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

PLANS PREPARED BY:

**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6851  
www.tepgroup.net

SEAL:

**GRAHAM M. ANDREWS**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
50257

June 14, 2019

I	06-14-19	CONSTRUCTION
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SHEET TITLE:

**TOWER  
ELEVATION**

SHEET NUMBER: **C-4**






REVISION: **1**

TEP#: 45957.216131



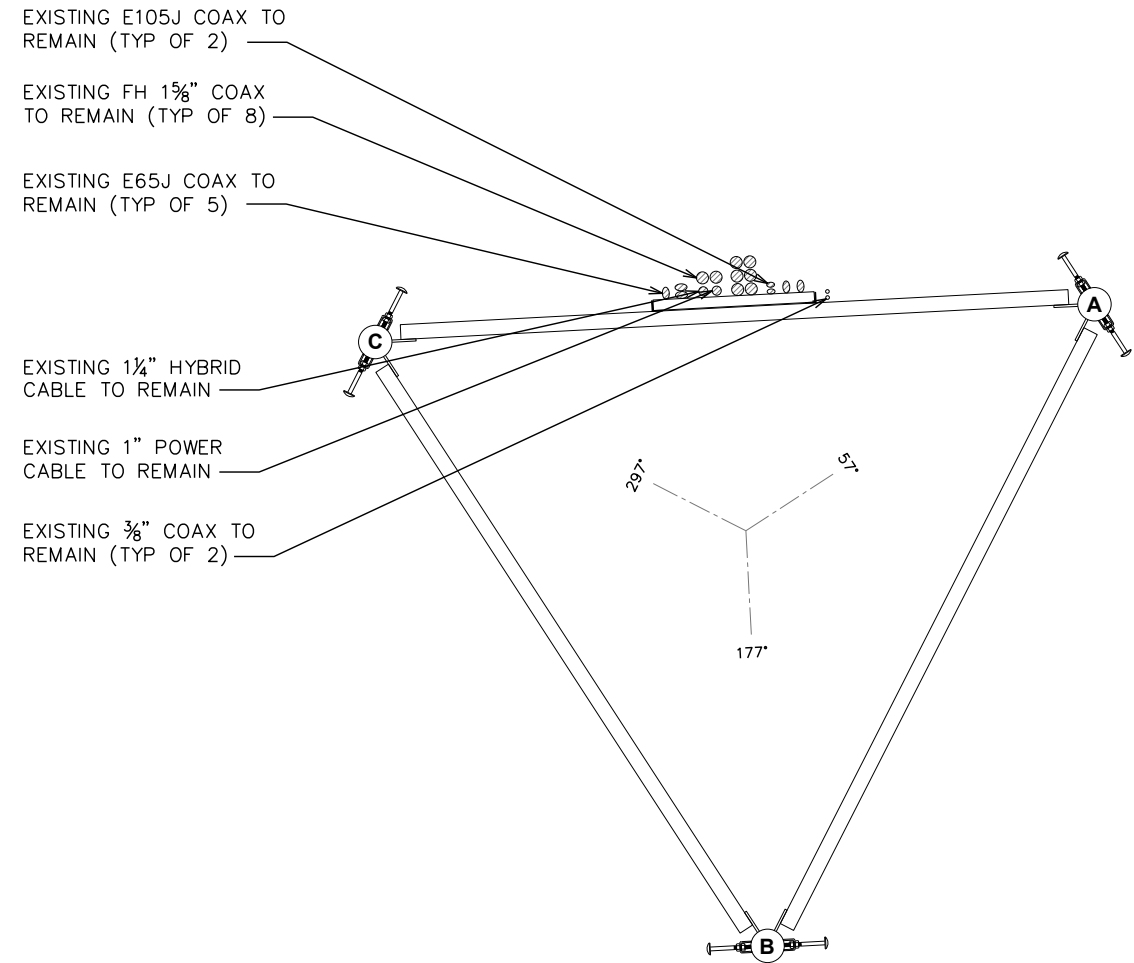




LEGEND	
EXISTING COAX TO REMAIN	
EXISTING COAX TO BE REMOVED	
PROPOSED HYBRID	
EXISTING EWG	
PROPOSED EWG	

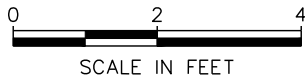
## LEGEND

SCALE: N.T.S.



## EXISTING COAX LAYOUT

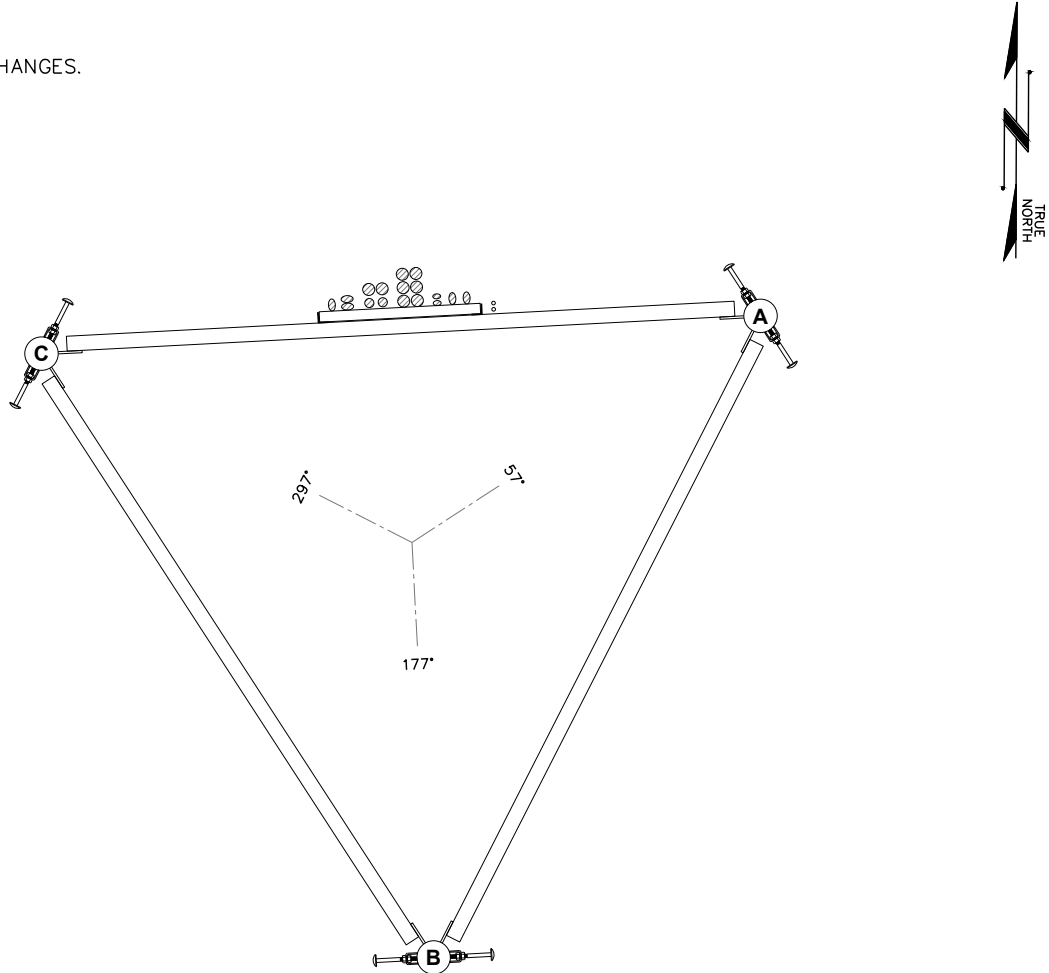
SCALE: 3/8" = 1'-0"



## USCC WAVEGUIDE

## NOTE:

NO PROPOSED CHANGES.



## PROPOSED COAX LAYOUT

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



PLANS PREPARED FOR:



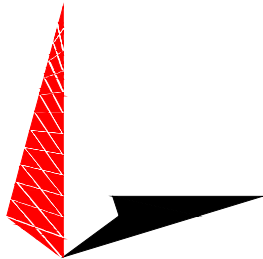
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## 385344 STACKER BUTTE

DALLES MOUNTAIN ROAD  
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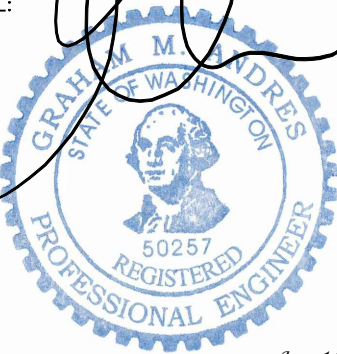
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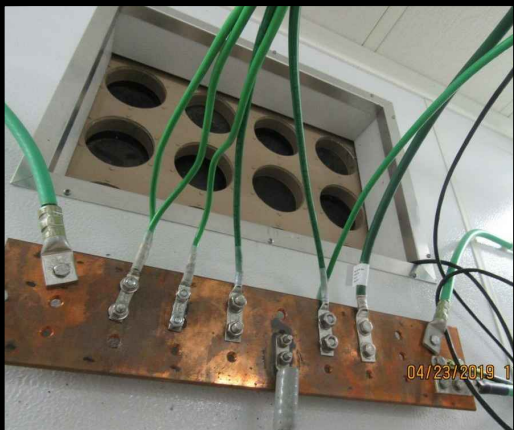
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SHEET TITLE:

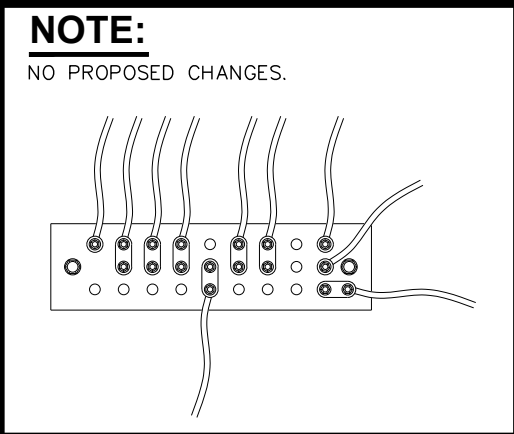
## COAX LAYOUT

SHEET NUMBER:	REVISION:
<b>C-6</b>	<b>1</b>
	TEP#: 45957.216131





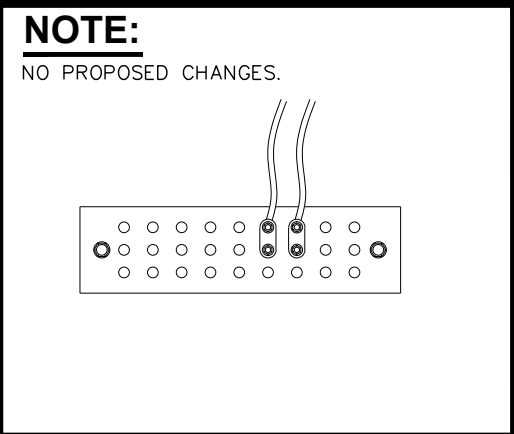
**EXIST. INSIDE SHELTER**  
SCALE: N.T.S.



**PROP. INSIDE SHELTER**  
SCALE: N.T.S.



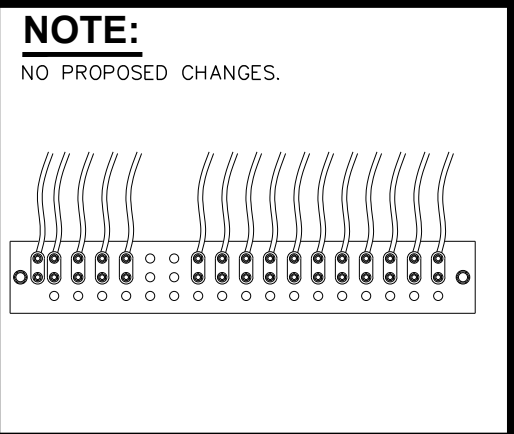
**EXIST. OUTSIDE SHELTER**  
SCALE: N.T.S.



**PROP. OUTSIDE SHELTER**  
SCALE: N.T.S.



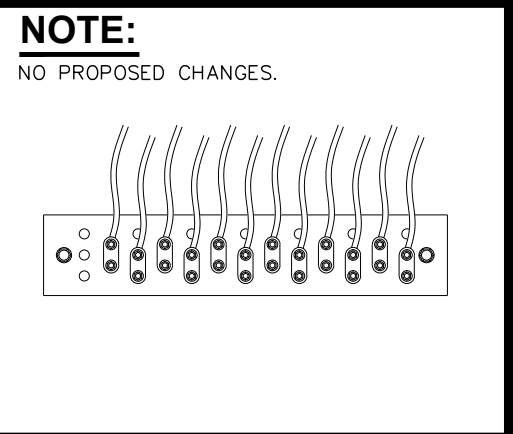
**EXIST. BOTTOM TOWER**  
SCALE: N.T.S.



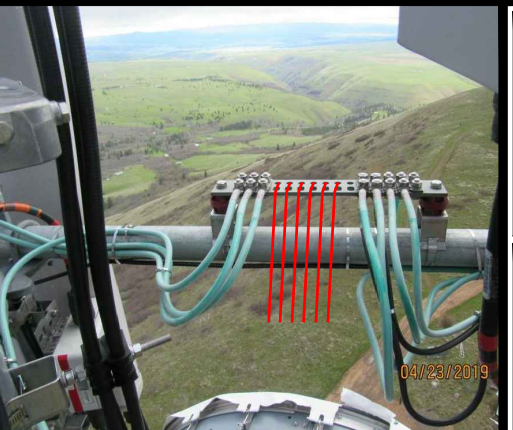
**PROP. BOTTOM TOWER**  
SCALE: N.T.S.



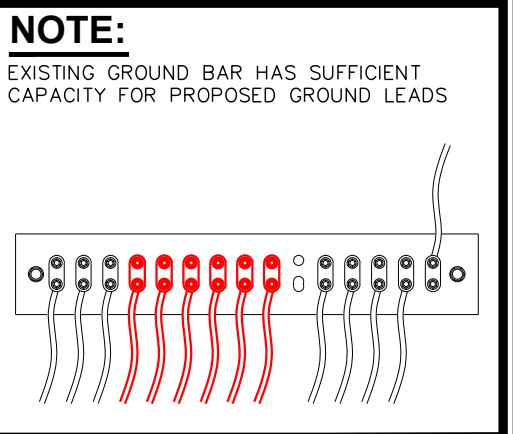
**EXISTING TOP TOWER**  
SCALE: N.T.S.



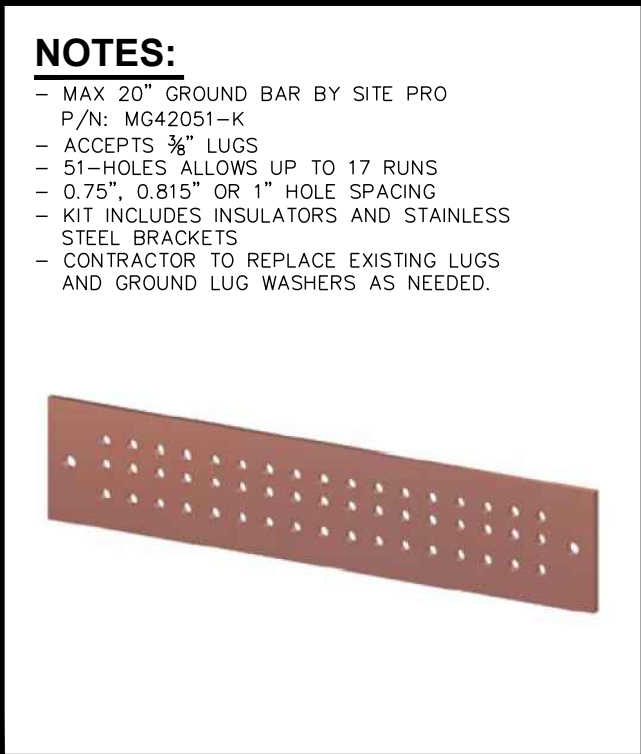
**PROPOSED TOP TOWER**  
SCALE: N.T.S.



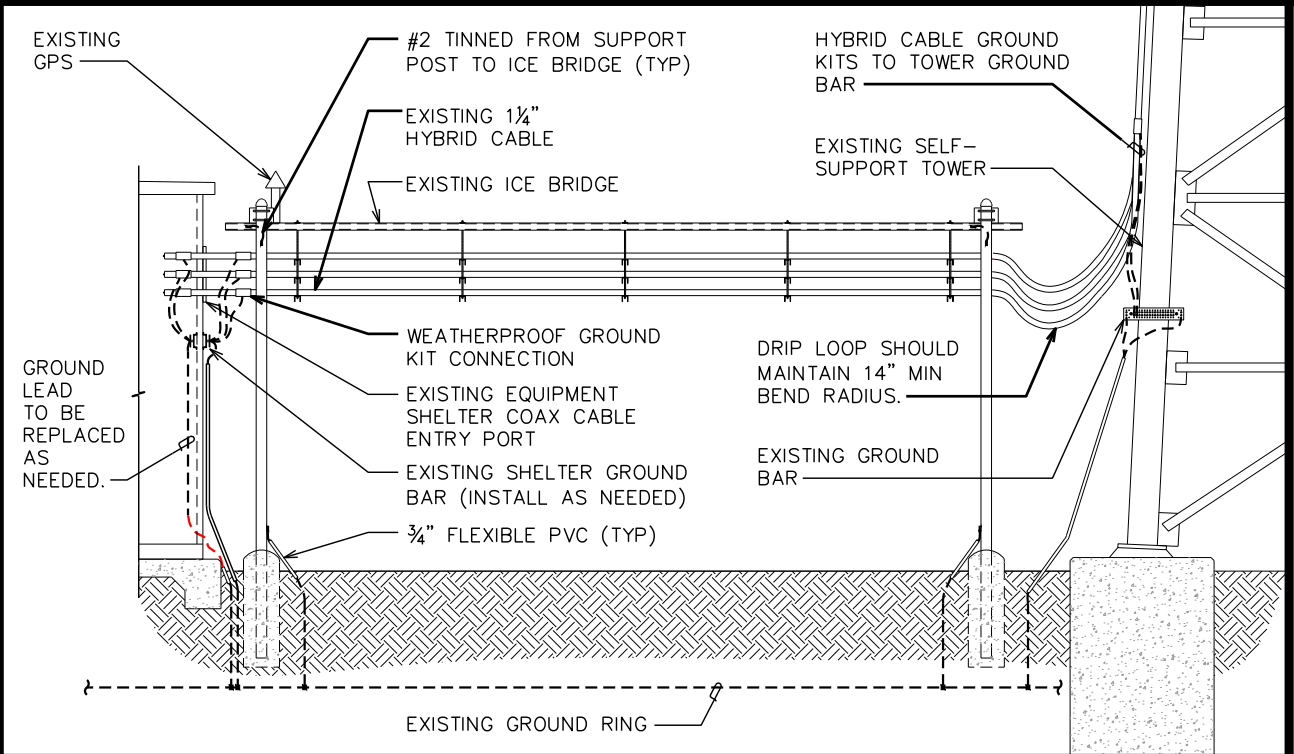
**EXISTING TOP TOWER**  
SCALE: N.T.S.



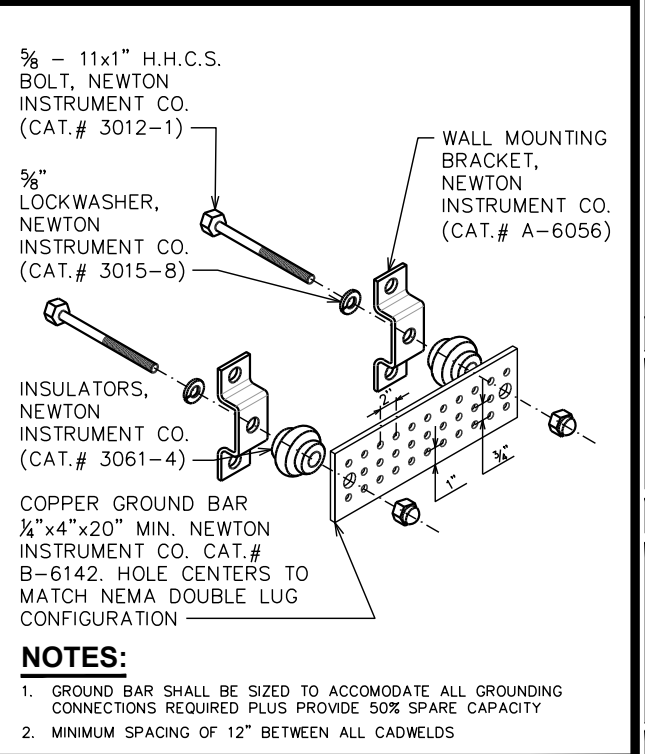
**PROPOSED TOP TOWER**  
SCALE: N.T.S.



**PROPOSED GND. BAR DETAIL**  
SCALE: N.T.S.



**SIDE VIEW**



**STANDARD GND. BAR DETAIL**  
SCALE: N.T.S.

PLANS PREPARED FOR:

  
8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

**385344  
STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

PLANS PREPARED BY:

  
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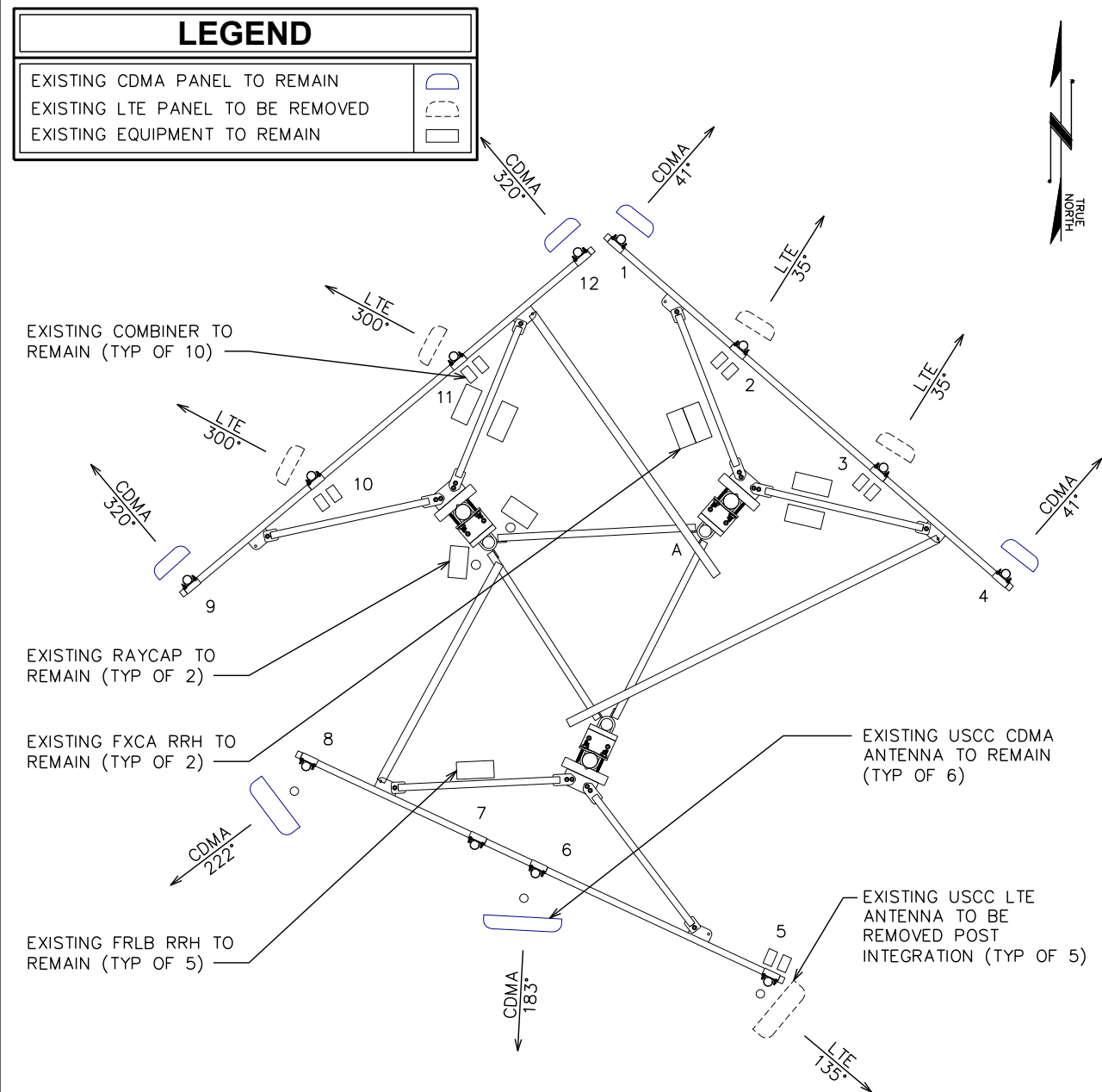
SHEET TITLE:

**GROUND  
BAR DETAILS**

SHEET NUMBER: **C-7** REVISION: **1**

TEP#: 45957.216131

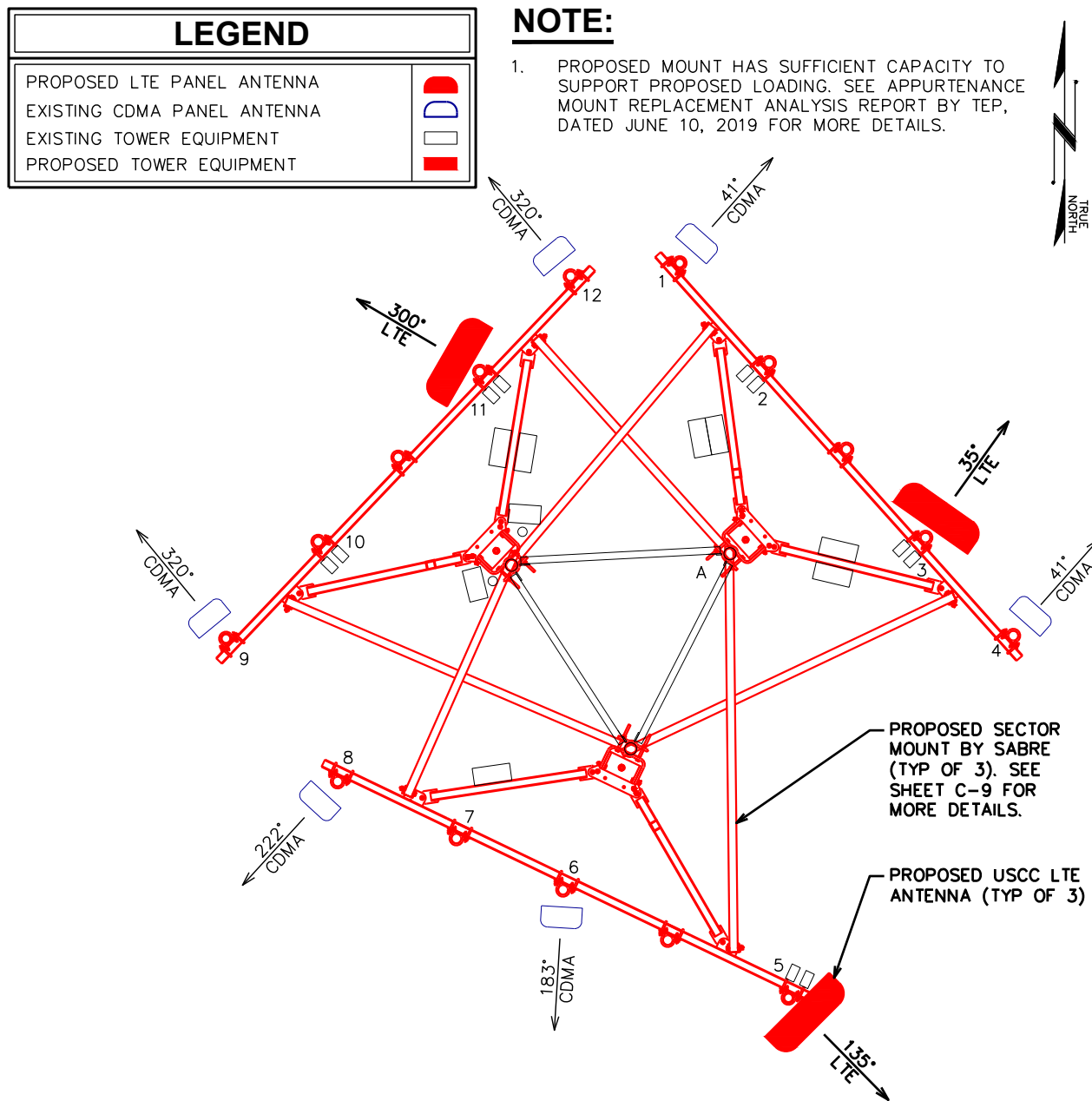
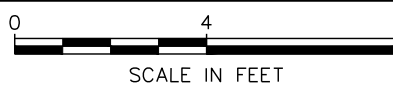




EXISTING LOADING															
ANTENNAS						CABLES				TOWER TOP RELATED EQUIPMENT					
SECTOR	ANTENNA POSITION NUMBER	MANUFACTURER/ MODEL NUMBER	ELEC. D-TILT	MECH. D-TILT	TWIST	TECH	BAND	CABLE TYPE	COAX SIZE	CABLE QTY.	CABLE LENGTH	COMBINER	RRH	RAYCAP	ANTENNA NOTES
ALPHA	1	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	TO REMAIN
ALPHA	2	KMW AM-X-CW-18-65-00T-RET	0°	0°	0°	LTE	B5/B12	-	-	-	-	(2) KAEIUS DBC0056F	(1) NOKIA FRLB (2) NOKIA FXCA	-	TO BE REMOVED
ALPHA	3	KMW AM-X-CW-18-65-00T-RET	0°	0°	0°	LTE	B5/B12	-	-	-	-	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	-	TO BE REMOVED
ALPHA	4	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	TO REMAIN
BETA	5	KMW ET-X-CW-45-19-IR-AT	0°	0°	-15°	LTE	B5/B12	-	-	-	-	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	-	TO BE REMOVED
BETA	6	AMPHENOL BXA-70033-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	2	145'-0"	-	-	-	TO REMAIN
BETA	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BETA	8	KATHREIN 80010456V02	-	-	-	CDMA	B5	COAX	1 1/2"	2	145'-0"	-	-	-	TO REMAIN
GAMMA	9	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	TO REMAIN
GAMMA	10	KMW AM-X-CW-18-65-00T-RET	0°	0°	0°	LTE	B5/B12	HYBRID	1 1/2"	1	145'-0"	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	(1) RUSDC-6267-PF-48	TO BE REMOVED
GAMMA	11	KMW AM-X-CW-18-65-00T-RET	0°	0°	0°	LTE	B5/B12	POWER	1"	1	145'-0"	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	(1) RUSDC-8999-P-48	TO BE REMOVED
GAMMA	12	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	TO REMAIN

**EXISTING ANTENNA ASSIGNMENT**

SCALE: 1/4" = 1'-0"

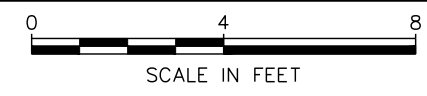


PROPOSED LOADING															
ANTENNAS						CABLES				TOWER TOP RELATED EQUIPMENT					
SECTOR	ANTENNA POSITION NUMBER	MANUFACTURER/ MODEL NUMBER	ELEC. D-TILT	MECH. D-TILT	TWIST	TECH	BAND	CABLE TYPE	COAX SIZE	CABLE QTY.	CABLE LENGTH	COMBINER	RRH	RAYCAP	ANTENNA NOTES
ALPHA	1	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	-
ALPHA	2	-	-	-	-	-	-	-	-	-	-	(2) KAEIUS DBC0056F	(1) NOKIA FRLB (2) NOKIA FXCA	-	-
ALPHA	3	TWIN TWINS65LU000G-T	0°	0°	0°	LTE	B5/B12/B4	-	-	-	-	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	-	-
ALPHA	4	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	-
BETA	5	DENGYO OCT8-2LX2HX-BW45	0°	0°	-15°	LTE	B5/B12/B4	-	-	-	-	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	-	-
BETA	6	AMPHENOL BXA-70033-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	2	145'-0"	-	-	-	-
BETA	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BETA	8	KATHREIN 80010456V02	-	-	-	CDMA	B5	COAX	1 1/2"	2	145'-0"	-	-	-	-
GAMMA	9	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	-
GAMMA	10	-	-	-	-	-	-	HYBRID	1 1/2"	1	145'-0"	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	(1) RUSDC-6267-PF-48	-
GAMMA	11	TWIN TWINS65LU000G-T	0°	0°	0°	LTE	B5/B12/B4	POWER	1"	1	145'-0"	(2) KAEIUS DBC0056F	(1) NOKIA FRLB	(1) RUSDC-8999-P-48	-
GAMMA	12	AMPHENOL LPA-70080-BCF	-	-	-	CDMA	B5	COAX	1 1/2"	1	145'-0"	-	-	-	-

\*CONTRACTOR TO CONFIRM FINAL LOADING PRIOR TO INSTALL.  
 \*\*CONTRACTOR TO REPLACE TOP HARDLINE CONNECTOR AND JUMPER ON CDMA ANTENNAS WHERE CONNECTION MUST BE BROKEN TO RELOCATE WHEN APPLICABLE.

**PROPOSED ANTENNA ASSIGNMENT**

SCALE: 1/4" = 1'-0"



**NOTE:**

1. PROPOSED MOUNT HAS SUFFICIENT CAPACITY TO SUPPORT PROPOSED LOADING. SEE APPURTENANCE MOUNT REPLACEMENT ANALYSIS REPORT BY TEP, DATED JUNE 10, 2019 FOR MORE DETAILS.

PLANS PREPARED FOR:

**U.S. Cellular**

8410 W. BRYN MAWR SUITE 700  
 CHICAGO, IL 60631  
 (773) 399-8900

PROJECT INFORMATION:

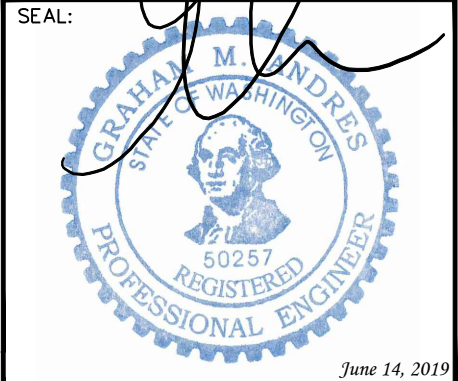
**385344  
 STACKER BUTTE**

DALLES MOUNTAIN ROAD  
 LYLE, WA 98635  
 (Klickitat County)

PLANS PREPARED BY:

**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
 RALEIGH, NC 27603-3530  
 OFFICE: (919) 661-6351  
 www.tepgroup.net



1	06-14-19	CONSTRUCTION
0	05-14-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

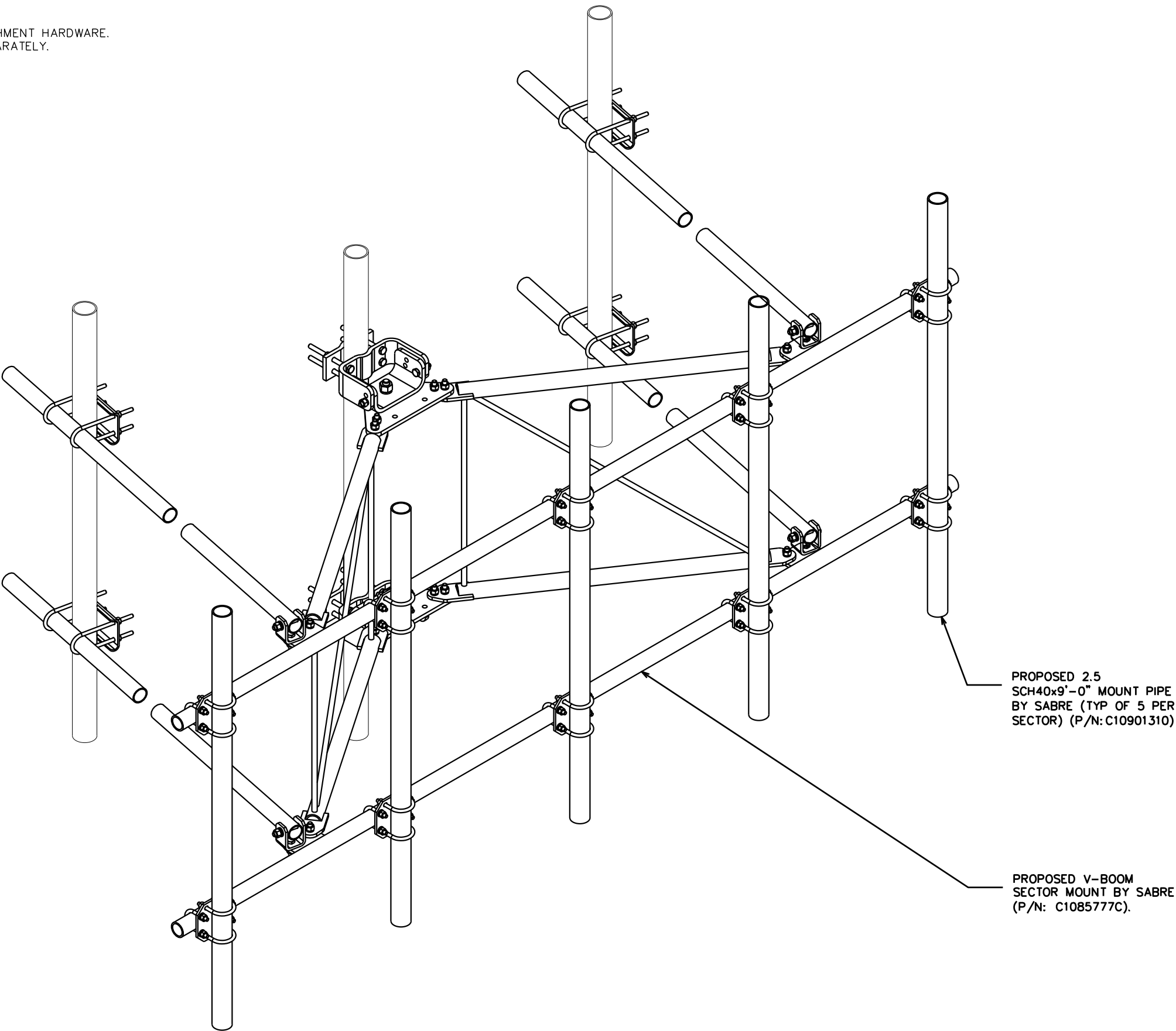
**ANTENNA  
 MOUNTING DETAILS**

SHEET NUMBER: **C-8**

REVISION: **1**

TEP#: 45957.216131

**NOTE:**  
MOUNT INCLUDES ATTACHMENT HARDWARE.  
MOUNT PIPES SOLD SEPARATELY.



**PROPOSED MOUNT DETAIL**  
SCALE: N.T.S.

PLANS PREPARED FOR:



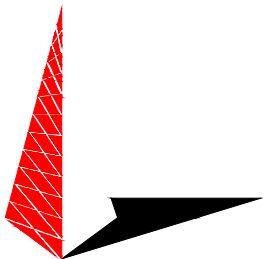
8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

**385344**  
**STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

PLANS PREPARED BY:



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I	06-14-19	CONSTRUCTION
O	05-14-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

**PROPOSED**  
**MOUNT DETAIL**

SHEET NUMBER:

**C-9**

REVISION:

**1**

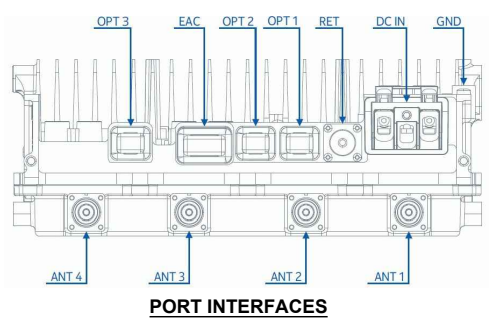
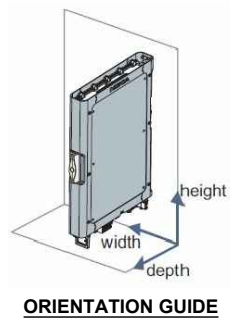
TEP#: 45957.216131



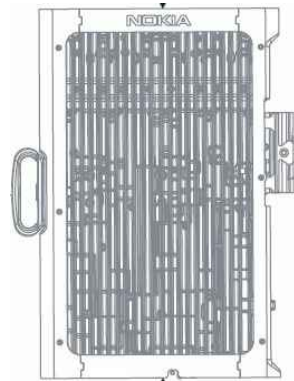


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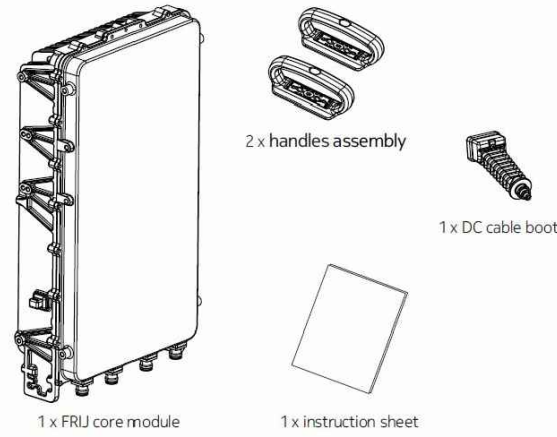
- 1. FRIJ P/N: 473368A
- 2. FRIJ: DIMENSIONS WITH COVER, HANDLE AND UNIT BRACKET: H=23.6", W=5.0", D=16.7"  
\*REFERENCE ORIENTATION GUIDE, THIS SHEET\*
- 3. FRIJ: WEIGHT WITH COVER, HANDLE AND UNIT BRACKET: 46.1lbs



PHOTO



FRONT VIEW



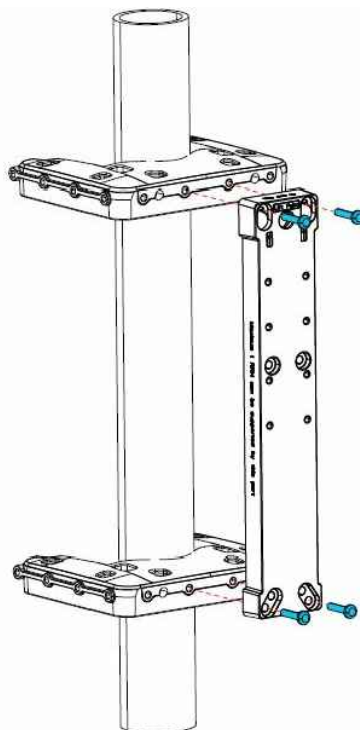
(FRIJ) RRH KIT CONTENTS

FRIJ AirScale RRH 4T4R B66 160W DETAILS

SCALE: N.T.S.

NOTE:

- FMNH ADAPTER BRACKET ON POLE

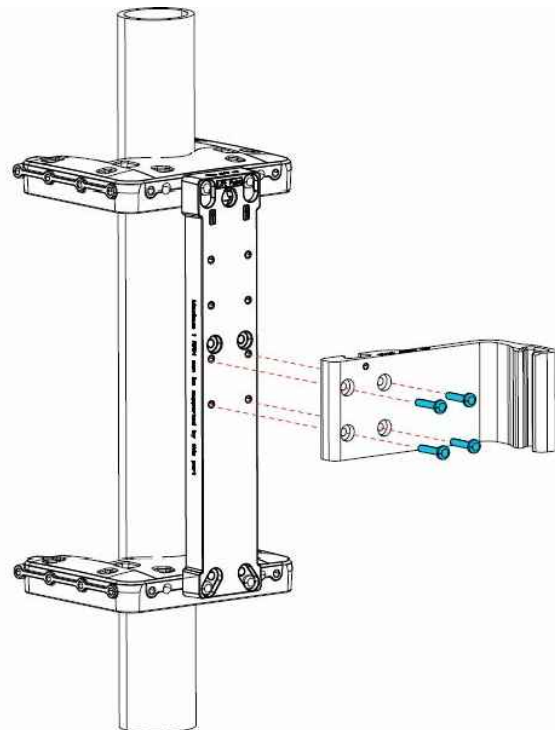


FRIJ MOUNTING FIGURE #1

SCALE: N.T.S.

NOTE:

- AMLA WITH FMNH ADAPTER BRACKET

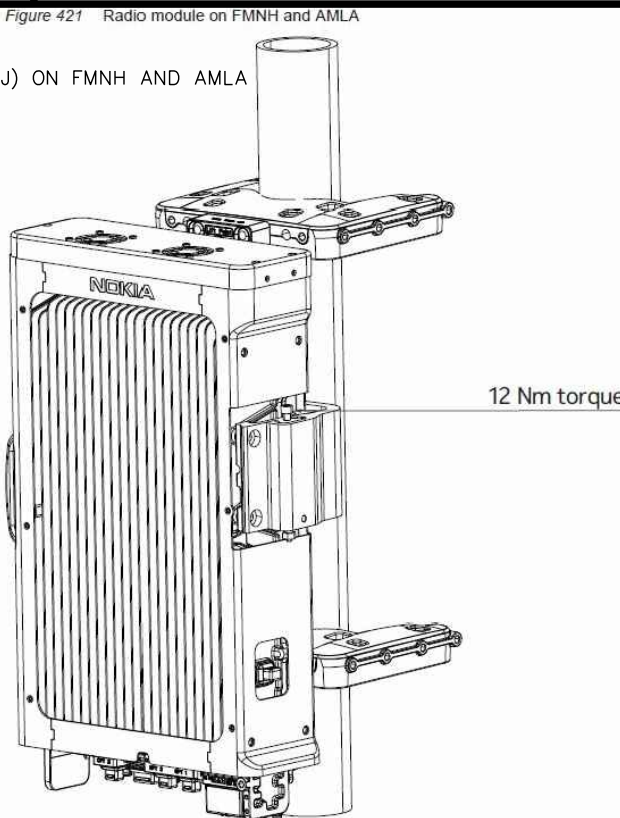


FRIJ MOUNTING FIGURE #2

SCALE: N.T.S.

NOTE:

- RADIO MODULE (FRIJ) ON FMNH AND AMLA

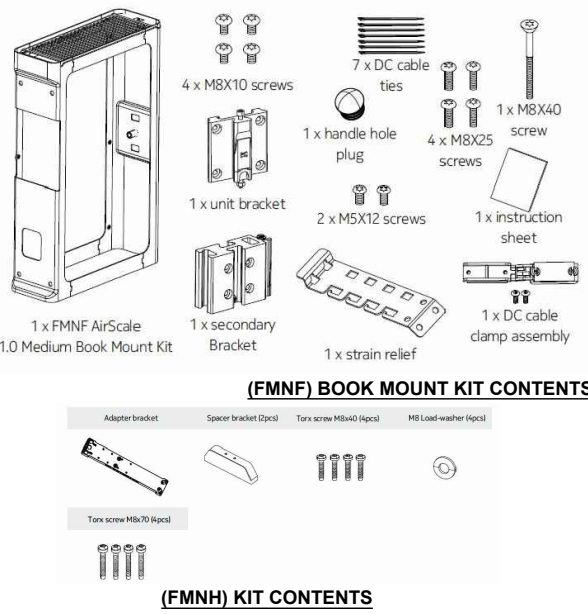


FRIJ MOUNTING FIGURE #3

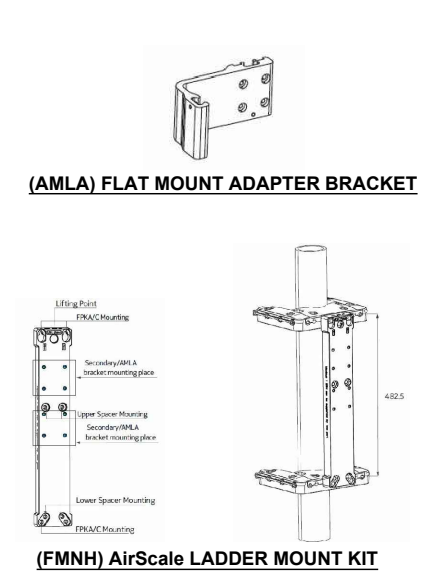
SCALE: N.T.S.

NOTES:

- 1. FMNF (AirScale 1.0 MEDIUM MOUNT KIT) P/N: 473979A
- 2. AMLA (FLAT MOUNT ADAPTER BRACKET KIT) P/N: 473881A
- 3. FMNH (AIRSCALE LADDER MOUNT KIT) P/N: 474091A
- 4. FMNH PROVIDES TWO MOUNTING OPTIONS:
  - POLE WITH FPKA/FPKC USING THE ADAPTER BRACKET.
  - LADDER MOUNT USING THE ADAPTER AND SPACER BRACKETS.



(FMNF) BOOK MOUNT KIT CONTENTS



(AMLA) FLAT MOUNT ADAPTER BRACKET

(FMNH) AirScale LADDER MOUNT KIT

FRIJ MOUNTING OPTIONS, HARDWARE AND KITS

SCALE: N.T.S.

NOTE:

- BIRD DETERRENTS FOR FRIJ RRHs ARE STILL BEING DESIGNED. DETAILS WILL BE PROVIDED ONCE AVAILABLE.

BIRD SHIELD

SCALE: N.T.S.

NOTES:

- FRIJ DETAIL IMAGES, MOUNTING HARDWARE AND KIT IMAGES PROVIDED BY DN0951839 ISSUE:10 © 2017 NOKIA. MOUNT SITE SPECIFIC DEVICES AND HARDWARE PER PROVIDED INSTRUCTIONS IN MANUFACTURERS DOCUMENT.
- FRIJ MOUNTING FIGURES #1-3 PROVIDED BY DN09238377 ISSUE:03 © 2017 NOKIA. MOUNT SITE SPECIFIC DEVICES AND HARDWARE PER PROVIDED INSTRUCTIONS IN MANUFACTURERS DOCUMENT.

ADDITIONAL NOTES

PLANS PREPARED FOR:

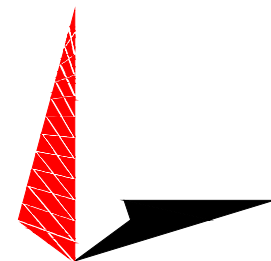


PROJECT INFORMATION:

385344  
STACKER BUTTE

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

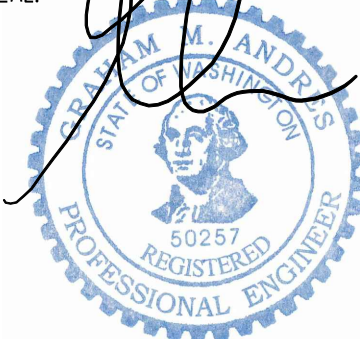
PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 881-6351  
www.tepgroup.net

SEAL:



June 14, 2019

REV	DATE	ISSUED FOR:
I	06-14-19	CONSTRUCTION
O	05-14-19	PRELIMINARY

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

FRIJ RRH  
SPEC SHEET

SHEET NUMBER:	REVISION:
C-11	1
TEP#: 45957.216131	





# Diagram#4F

## NSN 4T4R B12 / 2T4R B5 / 4T4R B2/4

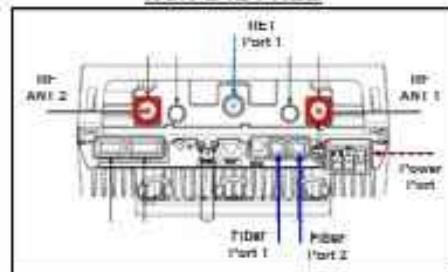
THIS IS A PER SECTOR CONFIGURATION

TWIN658LU000G-T

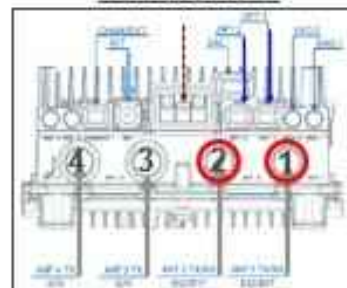
### Cable Legend

- UPEN Hybrid Cable
- W- Coax Cable
- Fiber Jumper
- Power Jumper
- RET Jumper

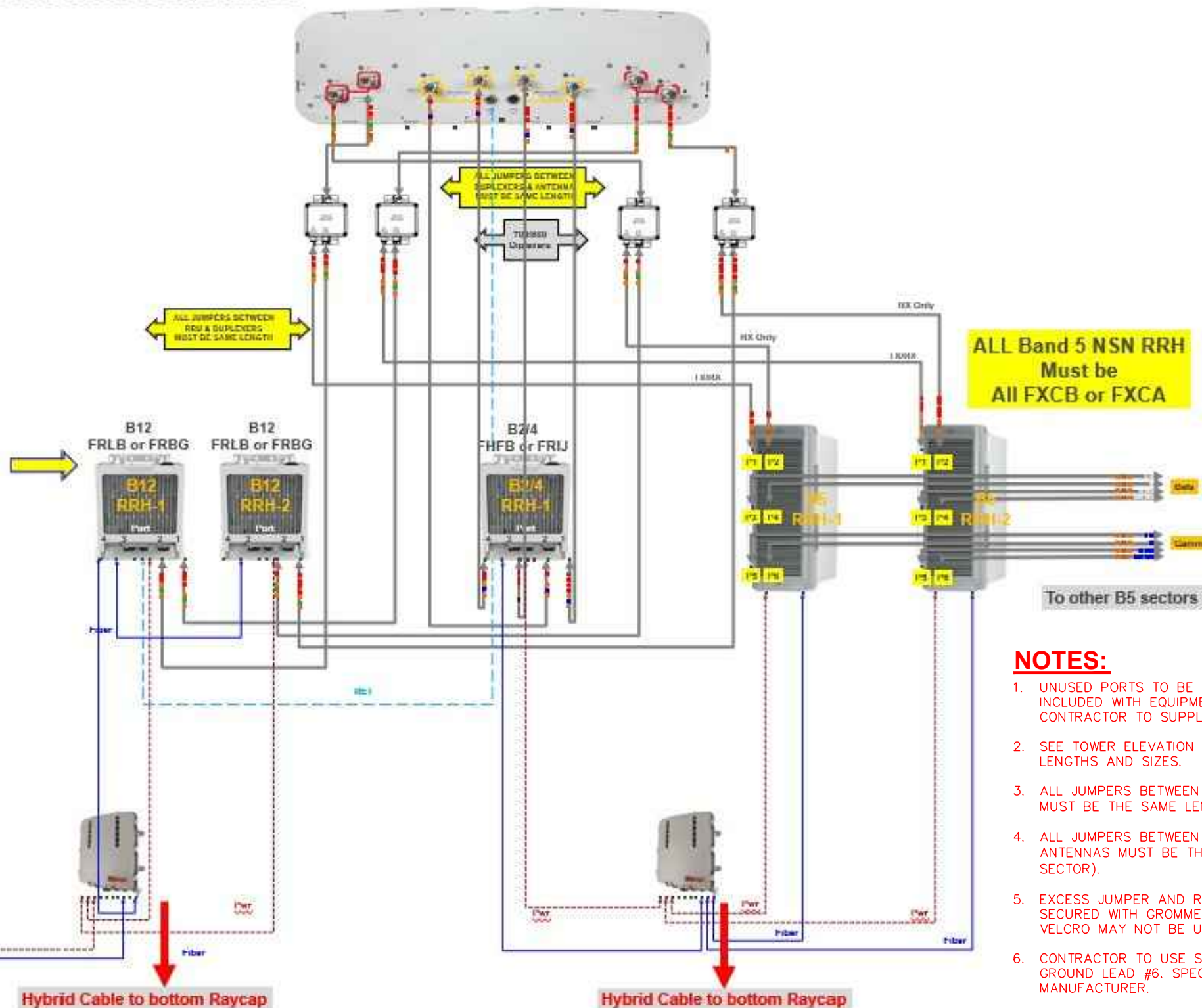
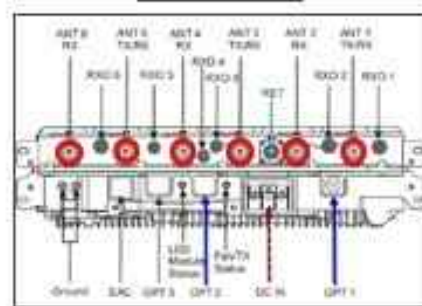
### NSN B12 FRLB



### NSN B12 FRBG



### NSN B5 FXCB



### NOTES:

1. UNUSED PORTS TO BE CAPPED. CAPS INCLUDED WITH EQUIPMENT PURCHASE. CONTRACTOR TO SUPPLY IF NECESSARY.
2. SEE TOWER ELEVATION FOR SPECIFIC JUMPER LENGTHS AND SIZES.
3. ALL JUMPERS BETWEEN RRH AND COMBINERS MUST BE THE SAME LENGTH (PER SECTOR).
4. ALL JUMPERS BETWEEN COMBINERS AND ANTENNAS MUST BE THE SAME LENGTH (PER SECTOR).
5. EXCESS JUMPER AND RET CABLES TO BE SECURED WITH GROMMETS AND SNAP-INS. VELCRO MAY NOT BE USED.
6. CONTRACTOR TO USE STRANDED INSULATED GROUND LEAD #6. SPECIFIED BY MANUFACTURER.

PLANS PREPARED FOR:



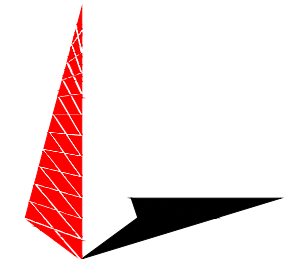
8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

**385344**  
**STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(Klickitat County)

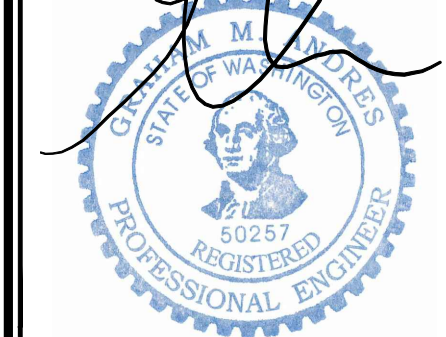
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OFFICE: (919) 661-6331  
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SEAL:



June 14, 2019

1	06-14-19	CONSTRUCTION
0	05-14-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

**PLUMBING  
DIAGRAM**

SHEET NUMBER:	REVISION:
<b>C-12</b>	<b>1</b>
TEP#:	45957.216131

**PLUMBING DIAGRAM**

SCALE: N.T.S.



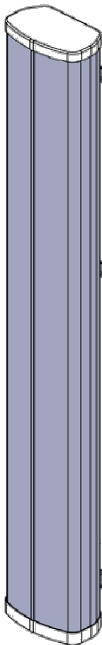
8-Port Panel Antenna  
(2x) 617-906 | (2x) 1695-2700 MHz

65° 2433 mm

TWIN658LU000G

TWIN DUAL BAND | 8-PORT PANEL | XPOL | 65° | 2433 MM (95.8 IN)

PRODUCT OVERVIEW	Frequency Range (MHz)	617-906	617-906	1695-2700	1695-2700
	Array	■ R1	■ R2	■ Y1	■ Y2
	Connector	1-2	3-4	5-6	7-8
	Connector Type	4.3-10 Female Long Neck	4.3-10 Female Long Neck	4.3-10 Female Long Neck	4.3-10 Female Long Neck
	Polarization	XPOL	XPOL	XPOL	XPOL
	Azimuth Beamwidth (avg)	65°	65°	65°	65°
	Electrical Downtilt	0-10°	0-10°	2-10°	2-10°
	Dimensions	2433 x 660 x 214 mm (95.8 x 26.0 x 8.4 in)			



ELECTRICAL SPECIFICATIONS Low Band ■ R1 ■ R2					
Frequency Range	MHz	(2x) 617-906			
Frequency Sub-Range	MHz	617-698		698-798	800-906
Polarization	---	(2x) ±45°			
Gain	Low Tilt	dBi	15.4	15.6	15.0
	Mid Tilt	dBi	15.3	15.5	15.0
	High Tilt	dBi	15.2	15.4	14.8
	Over all Tilts	dBi	15.3 ± 0.6	15.5 ± 0.6	14.9 ± 0.6
	Max Gain	dBi	15.9	16.1	15.5
Azimuth Beamwidth (3 dB)	degrees	73.6 ± 5.8		72.6 ± 5.9	69.7 ± 7.0
Elevation Beamwidth (3 dB)	degrees	11.5 ± 1.0		9.9 ± 0.7	8.7 ± 0.7
Electrical Downtilt	degrees	0-10			
Impedance	Ohms	50			
VSWR	---	1.5:1			
Passive Intermodulation 3rd Order for 2x20 W Carriers	dBm (dBc)	< -110 (< -153)			
Front-to-Back Ratio ± 30° @ 180° from boresite	dB	> 33	> 33	> 33	> 32
Upper Sidelobe Rejection 20° Sector Above Main Beam	dB	> 20	> 21	> 21	> 19
Cross Polar Discrimination at Mechanical Boresight (0°)	dB	> 20	> 21	> 21	> 14
Maximum Power Per Port	Watts	500			
Interband/Intraband Isolation	dB	25/30		25/30	25/30

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

REV030119NA

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1 of 6



8-Port Panel Antenna  
(2x) 617-906 | (2x) 1695-2700 MHz

65° 2433 mm

TWIN658LU000G

TWIN DUAL BAND | 8-PORT PANEL | XPOL | 65° | 2433 MM (95.8 IN)

ELECTRICAL SPECIFICATIONS Mid Band ■ Y1 ■ Y2					
Frequency Range	MHz	(2x) 1695-2700			
Frequency Sub-Range	MHz	1695-1880	1850-1990	1920-2200	2300-2700
Polarization	---	(2x) ±45°			
Gain	Low Tilt	dBi	16.7	17.1	17.3
	Mid Tilt	dBi	16.9	17.3	17.4
	High Tilt	dBi	16.9	17.1	17.4
	Over all Tilts	dBi	16.9 ± 0.7	17.2 ± 0.5	17.4 ± 0.6
	Max Gain	dBi	17.5	17.7	18.0
Azimuth Beamwidth (3 dB)	degrees	61.6 ± 10.3	62.7 ± 9.3	56.4 ± 11.3	54.4 ± 9.8
Elevation Beamwidth (3 dB)	degrees	6.2 ± 0.4	5.7 ± 0.3	5.4 ± 0.5	4.6 ± 3.3
Electrical Downtilt	degrees	2-10			
Impedance	Ohms	50			
VSWR	---	1.5:1 1695-2180 MHz 1.6:1 2181-2700 MHz			
Passive Intermodulation 3rd Order for 2x20 W Carriers	dBm (dBc)	< -110 (< -153)			
Front-to-Back Ratio ± 30° @ 180° from boresite	dB	> 36	> 38	> 37	> 37
Upper Sidelobe Rejection 20° Sector Above Main Beam	dB	> 17	> 17	> 19	> 17
Cross Polar Discrimination at Mechanical Boresight (0°)	dB	> 15	> 16	> 15	> 14
Maximum Power Per Port	Watts	300			
Interband/Intraband Isolation	dB	25/30	25/30	25/30	25/30

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

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PLANS PREPARED FOR:



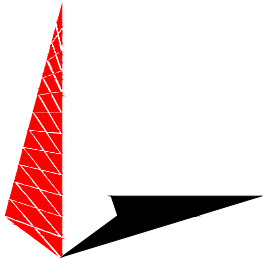
8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

385344  
STACKER BUTTE

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(KLICKITAT COUNTY)

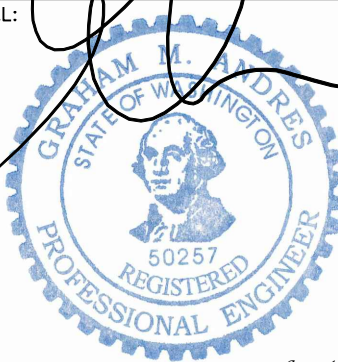
PLANS PREPARED BY:



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326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 681-6351  
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SEAL:



June 14, 2019

I	06-14-19	CONSTRUCTION
O	05-14-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

ANTENNA  
SPEC SHEET I

SHEET NUMBER:	REVISION:
C-13	1
	TEP#: 45957.216131

AMPHENOL TWIN658LU000G

SCALE: N.T.S.





Base Station Antennas

Frequency Range	2x617-894 2x1695-2400
Polarization	±45°
Half-Power Beam Width	45°
Electrical Downtilt	2° - 12°

Type OCT8-2LX2HX-BW45

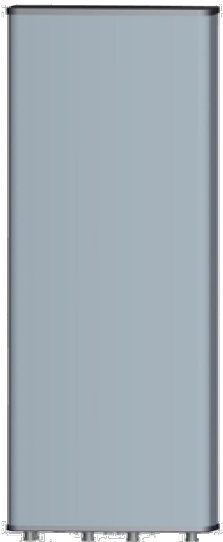
### Base Station Antenna

8-ports 617-894 /617-894 /1695-2400/1695-2400 MHz 45°, 16.5 / 16.5 / 18/ 18dBi, 2°-12°/2°-12°/2°-12°/ 2°-12°T<sub>i</sub>  
4 Integrated RCUs.



#### Electrical Specifications

Frequency Range(MHz)		2x617-894			2x1695-2400		
		617-698	698-824	824-894	1695-1920	1920-2180	2300-2400
Polarization		±45°					
Horizontal 3dB Beamwidth(° )		50	46	42	48	45	41
Vertical 3dB Beamwidth(° )		10.4	9.1	8.0	5.5	5	4.3
Gain (dBi)		15.6	16.1	16.6	17.6	18.0	18.1
Electrical Downtilt		2°-12°			2°-12°		
Upper Sidelobe Suppression(dB)	First	≥16	≥16	≥16	≥16	≥16	≥16
Front-to-Back Ratio Total Power, ± 30° (dB)		≥25	≥25	≥25	≥25	≥25	≥25
Cross polar ratio	Main direction(dB)	≥16	≥16	≥16	≥16	≥16	≥16
Isolation ports		≥25 dB					
Isolation Frequency		≥30 dB					
VSWR		< 1.5					
Intermodulation IM3		< -150 dBc(2x43dBm carrier)					
Impedance		50 Ω					
Max. Power per Input (at 50°C ambient temperature)		500 W			300 W		
Lightning Protection		DC Ground					



#### Mechanical Specifications

Radome Material	Fiber Glass
Connector Type and Location	4,3-10x8 ,Bottom iRCU in:1 x 8 pin male iRCU out:1 x 8 pin female
Dimensions,HxWxD(mm)/(inches)	2438 x 800 x 160 / 95.9 x 31.5 x 6.3
Packing Size(mm)/(inches)	2660 x 901 x 291 / 104.7 x 35.4 x 11.5
Weight ,w/o Mounting kit(kg)/(lbs)	55 / 121
Weight ,with Mounting kit(kg)/(lbs)	61 / 134.2
Packing Weight(kg)/(lbs)	67 / 147.4
Max. Wind Velocity(mph)	150
Mounting hardware	ϕ 50 mm ~ ϕ 115 mm
Operational Temperature(°C)	-40 to +65
Operational Humidity(%)	<95
Wind Load at 100mph (Frontal/lateral/Rearside(N))	2234/289/1620

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OCT8-2LX2HX-BW45 Rev.1



Base Station Antennas

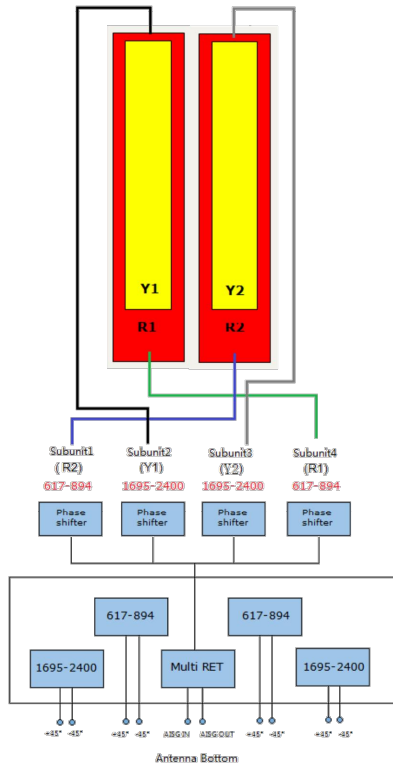
Frequency Range	2x617-894 2x1695-2400
Polarization	±45°
Half-Power Beam Width	45°
Electrical Downtilt	2° - 12°

Type OCT8-2LX2HX-BW45

#### Integrated RET Properties

Protocols		Compliant to AISG 2.0/3GPP
Input voltage range		+10~+30VDC(pin 6)
Power consumption		<2W(stand by);<13W(motor activated) 2 x 8 pin connector acc. To IEC 60130-9 Acc.to AISG Daisy chain in:male Daisy chain out:female
Connectors	AISG	
	Antenna	Two motor shaft(Embedded motor)
Hardware interface	AISG	RS485A/B(pin5/pin3);Power supply(pin6); DC return(pin7)Acc.to AISG
Adjustment time(full range)		40 sec(typically,depending on antenna)
Adjustment Cycles		≥10000
Torque Max		≥160mN.m
Lightning Protection Rating		IEC 61000-4-5 Current Pulse Profile,8/20 μs 10 Repetitions Min.@ 6kA IEC 61312-1 Annex B Current Pulse Profile, 10/350 μs,200 Repetitions Min. @ 0.6KA

#### COMPREHENSIVE TILT CONFIGURATION



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PLANS PREPARED FOR:



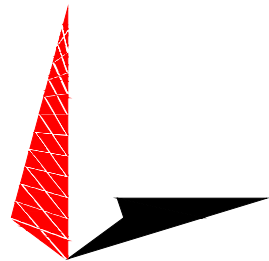
8410 W. BRYN MAWR SUITE 700  
CHICAGO, IL 60631  
(773) 399-8900

PROJECT INFORMATION:

**385344**  
**STACKER BUTTE**

DALLES MOUNTAIN ROAD  
LYLE, WA 98635  
(KLICKITAT COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**

326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351  
www.tepgroup.net

SEAL:



June 14, 2019

I	06-14-19	CONSTRUCTION
O	05-14-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

**ANTENNA**  
**SPEC SHEET II**

SHEET NUMBER: REVISION:

**C-14**

**1**

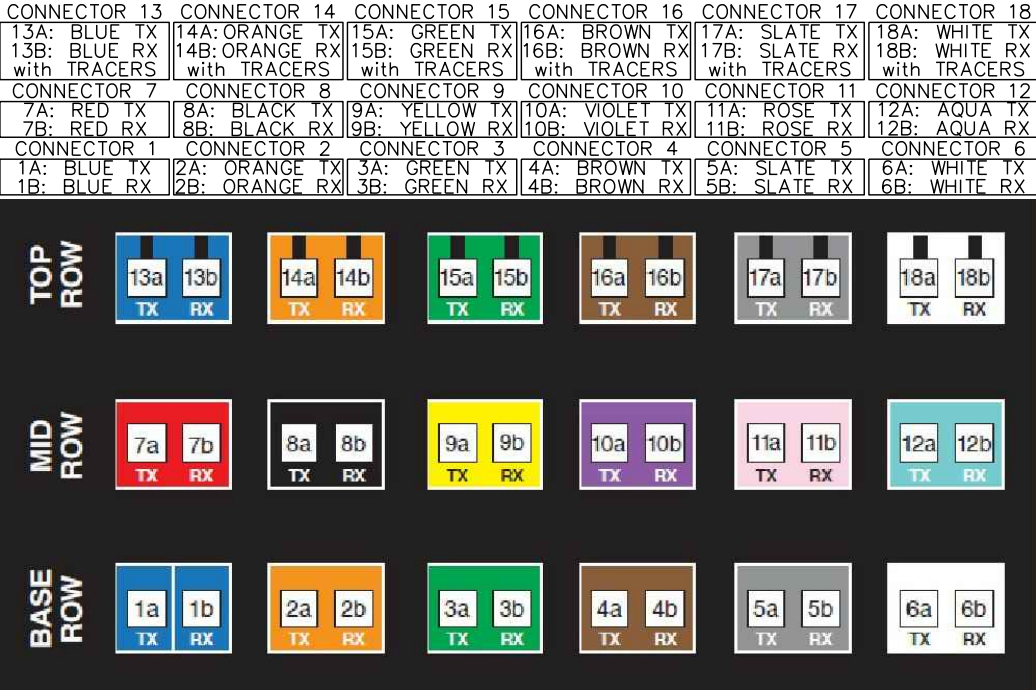
TEP#: 45957.216131

**DENGYO OCT8-2LX2HX-BW45**

SCALE: N.T.S.

NOTE:

REFER TO USCC DOCUMENT "TOWER MOUNTED EQUIPMENT AND TOWER CABLE STANDARDS AT CELL SITES" FOR COMPLETE COLOR CODING STANDARDS.



PROPOSED (24) FIBER CABLES

PROPOSED (12) TERMINAL BLOCK  
6-20 AWG

PROPOSED (18) FIBER COUPLERS ON  
FIBER LANDING

PROPOSED (6) STRIKESORB MODULE

PROPOSED (6) FIBER CABLES

PROPOSED (5) BEND PROTECTORS

PROPOSED GROUND STRIP FOR SHIELD  
AND DRAIN WIRES

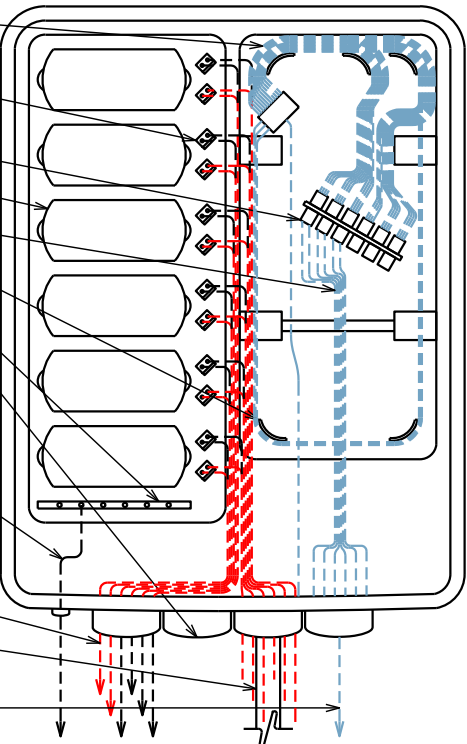
PROPOSED EMPTY PORT

PROPOSED #6 INSULATED GROUND LEAD  
WITH 2 LUG MECHANICAL CONNECTION  
BETWEEN PROPOSED RAYCAP AND  
EXISTING RF GROUND BAR

PROPOSED POWER JUMPER CABLES  
TO RRHS

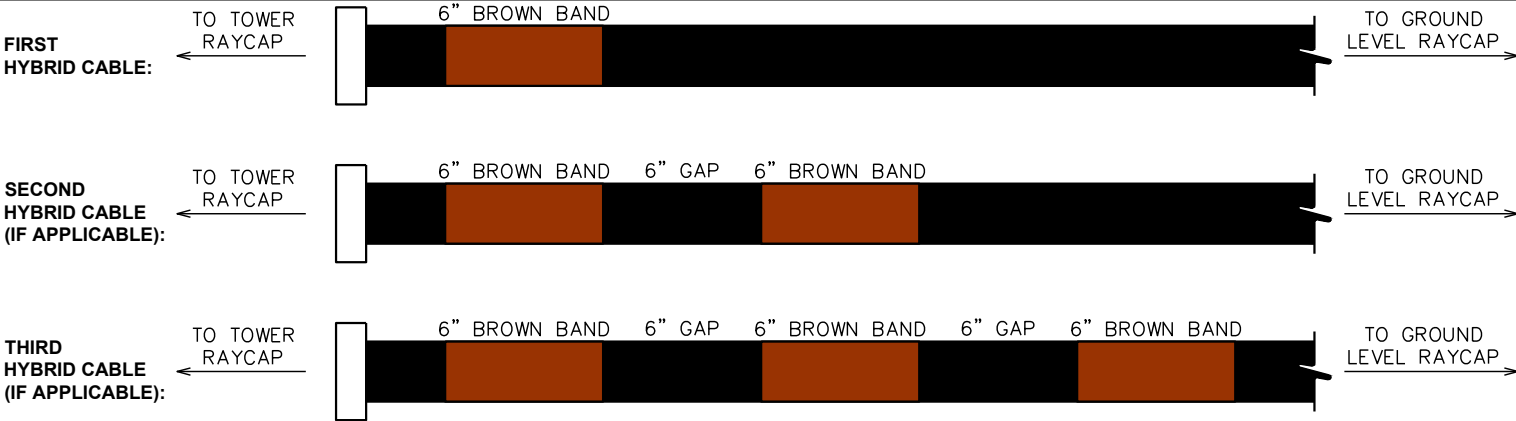
PROPOSED 1¼" HYBRID CABLE

PROPOSED FIBER OPTIC JUMPER CABLE  
TO RRHS



FIBER CABLE LABELING

SCALE: N.T.S.

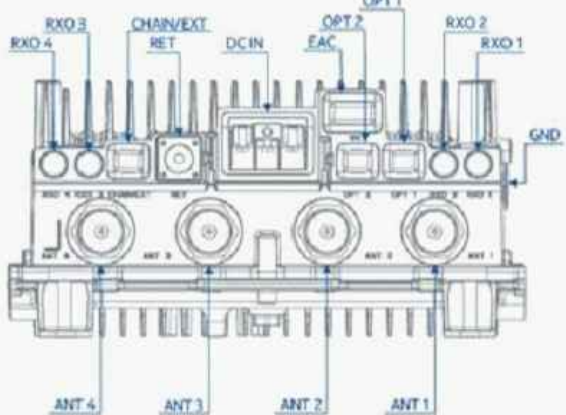


RAYCAP CABLING

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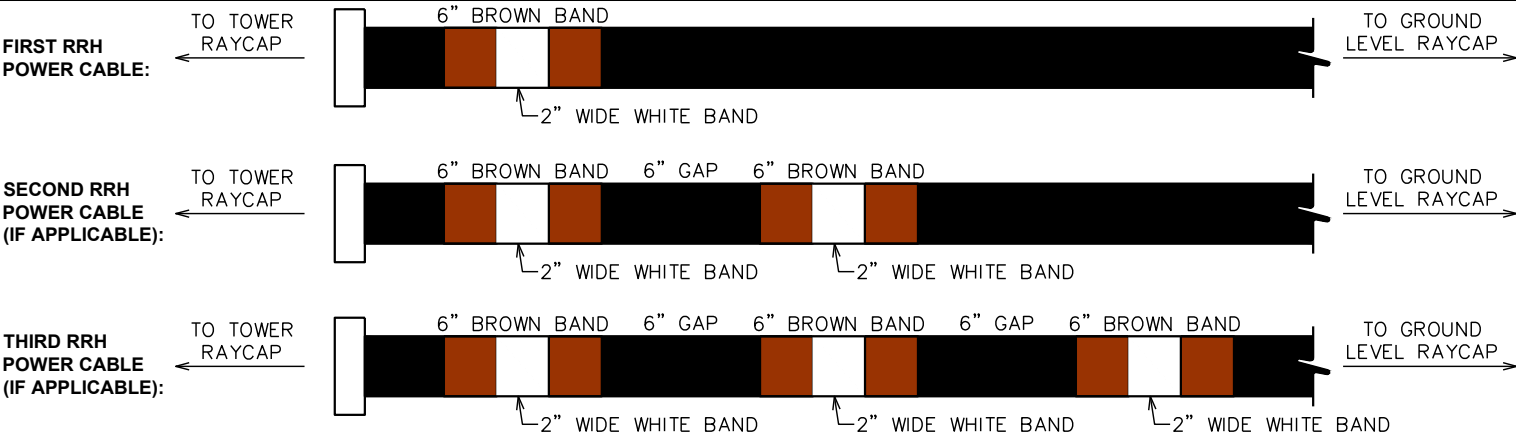
NOTE:

USE PORTS 1 AND 3 FOR ANTENNA CONNECTIONS WITH PORTS 2 AND 4 LEFT OPEN. NOTE THAT PORT 1 IS ON THE RIGHT AND PORT 4 IS ON THE LEFT.



HYBRID CABLE BANDING

SCALE: N.T.S.



2T2R DEPLOYMENT

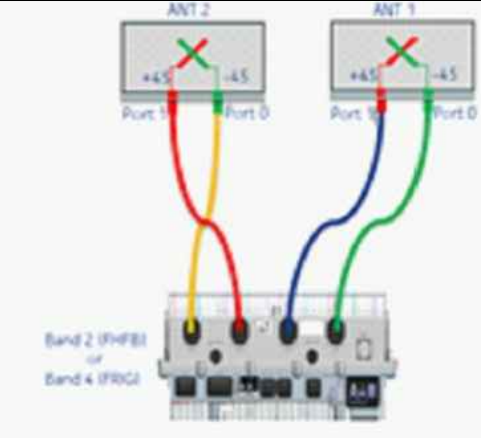
SCALE: N.T.S.

NOTE:

ALL PORTS TO BE USED FOR ANTENNA CONNECTIONS. NOTE THAT PORT 1 IS ON THE RIGHT AND PORT 4 IS ON THE LEFT.

BAND 2 OR 4:

PER SECTOR:  
RRH PORT 1 = ANT. 1/PORT 0 (-45)  
RRH PORT 2 = ANT. 1/PORT 1 (+45)  
RRH PORT 3 = ANT. 2/PORT 1 (+45)  
RRH PORT 4 = ANT. 2/PORT 0 (-45)



FIBER CABLE BANDING

SCALE: N.T.S.

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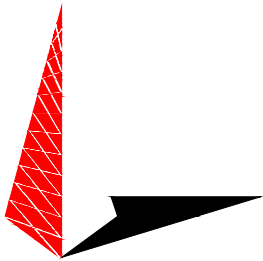
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(773) 399-8900

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STACKER BUTTE

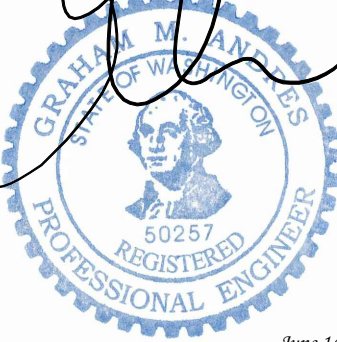
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DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

LABELING  
STANDARDS I

SHEET NUMBER:	REVISION:
C-15	1
TEP#:	45957.216131



Sector Band Assignments (Most Common Case: Single Technology within the Sector)					
Sector Band	Assigned Color	Line 1	Line 2	Line 3	Line 4
Alpha (Sector 1)	red	1 red band	2 red bands	3 red bands	4 red bands
Beta (Sector 2)	white	1 white band	2 white bands	3 white bands	4 white bands
Gamma (Sector 3)	blue	1 blue band	2 blue bands	3 blue bands	4 blue bands
Delta (Sector 4, if applicable)	green	1 green band	2 green bands	3 green bands	4 green bands
Epsilon (Sector 5, if applicable)	violet	1 violet band	2 violet bands	3 violet bands	4 violet bands
Zeta (Sector 6, if applicable)	brown	1 brown band	2 brown bands	3 brown bands	4 brown bands

FREQUENCY BAND	
FREQUENCY	FREQUENCY BAND
700 (B12)	GREEN
800 (B5)	BROWN
1900 (B2)	BLUE
2100 (B4)	WHITE
2100 (B66)	GREY
600 (B71)	VIOLET
3.5 GHz	RED

PLANS PREPARED FOR:



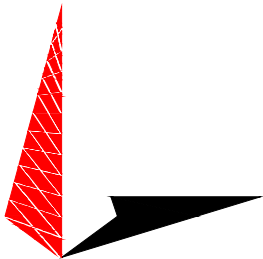
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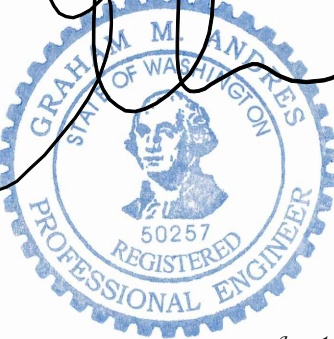
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DRAWN BY: GSK CHECKED BY: JPE

SHEET TITLE:

**LABELING**  
**STANDARDS II**

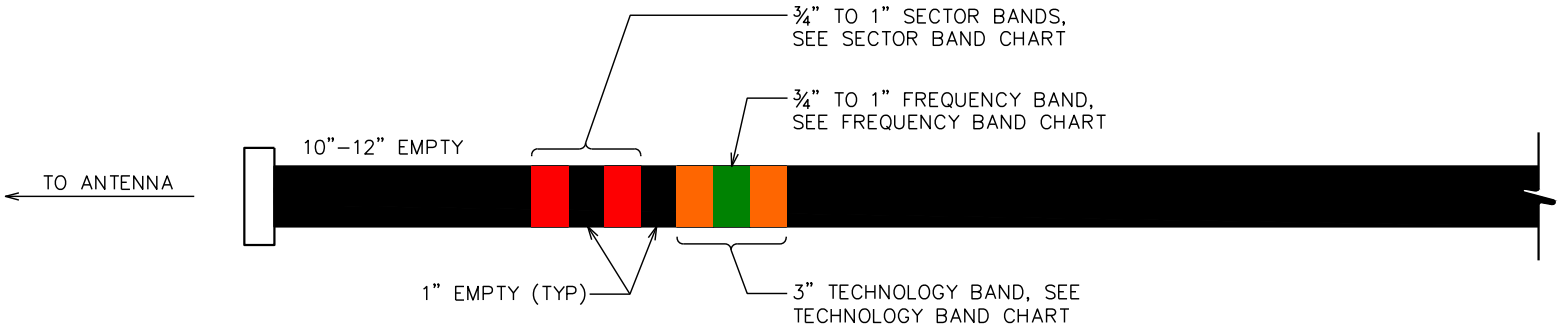
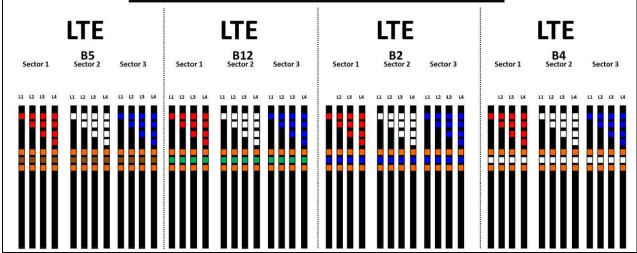
SHEET NUMBER: REVISION:

**C-16**

**1**

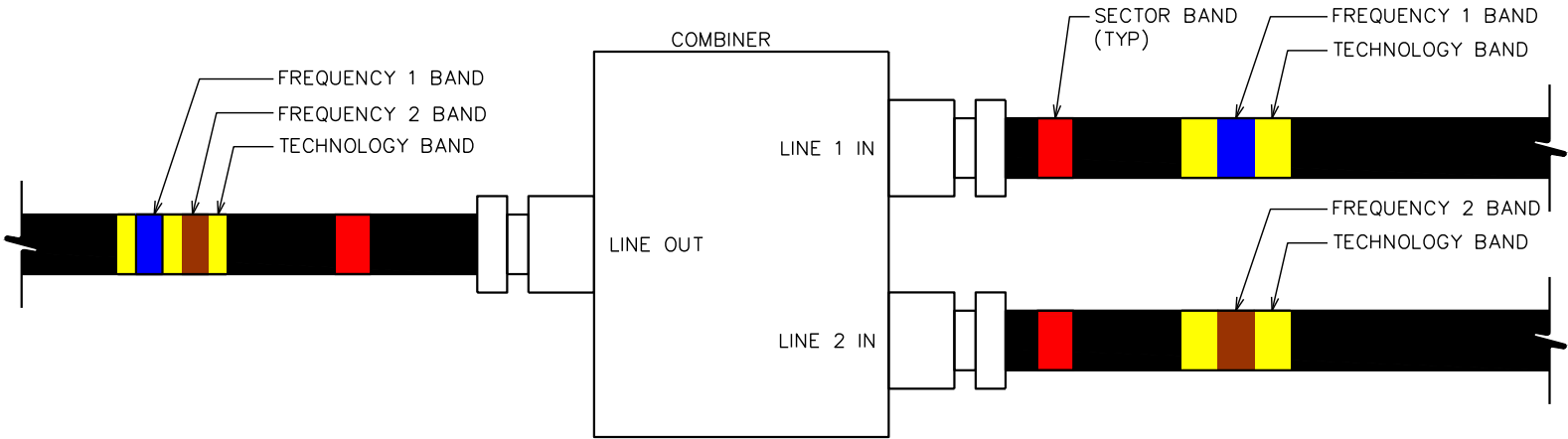
TEP#: 45957.216131

USC COAX Color Code Standard



**COAX CABLE BANDING**

SCALE: N.T.S.

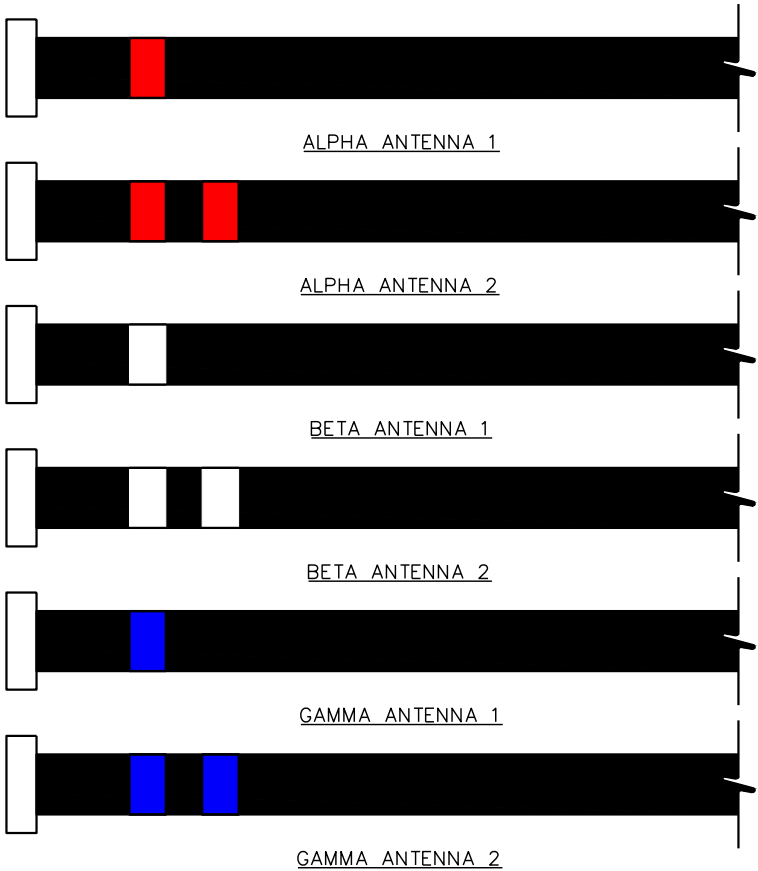


**COAX BANDING THROUGH COMBINER**

SCALE: N.T.S.

**RET SECTOR BAND**

SECTOR	LINE 1 - FIRST TECHNOLOGY	LINE 2 - FIRST TECHNOLOGY
ALPHA	(1) RED BAND	(2) RED BAND
BETA	(1) WHITE BAND	(2) WHITE BAND
GAMMA	(1) BLUE BAND	(2) BLUE BAND



**RET CABLE BANDING**

SCALE: N.T.S.

GENERAL NOTES:

1. ALL REFERENCES TO OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED U.S. CELLULAR OR IT’S DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF WASHINGTON.
3. STRUCTURE IS DESIGNED IN ACCORDANCE WITH ANSI/TIA–222–G–2, 2005, FOR A 85 MPH 3–SECONF GUST WIND LOAD. THIS CONFORMS TO THE REQUIREMENTS OF INTERNATIONAL BUILDING CODE, 2015 EDITION.
4. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2015 EDITION.
5. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
6. ALL HARDWARE ASSEMBLY MANUFACTURER’S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERCEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
7. IT IS THE CONTRACTOR’S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND IT’S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER’S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE OWNER SHALL HAVE A SET OF APPROVED. PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISES AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
9. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR INSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
11. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
12. BILL OF MATERIALS AND PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID CONTRACTOR. CONTRACTOR SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS.
13. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
14. 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTIONAL (STATE, COUNTY OR CITY) ENGINEER.
15. THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN IT PRESENT STATE. AFTER REWORKING, IF THE MATERIAL REMAINS UNSUITABLE, THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PAVING. ANY SOFTER MATERIAL SHALL BE REWORKED OR REPLACED.

STRUCTURAL STEEL NOTES:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

A. STRUCTURAL STEEL, ASTM DESIGNATION A36 OR GR50.

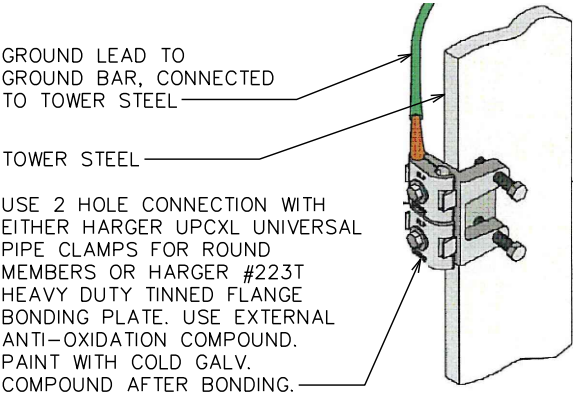
B. ALL BOLTS, ASTM A325 TYPE I GALVANIZED HIGH STRENGTH BOLTS.

C. ALL NUTS, ASTM A563 CARBON AND ALLOY STEEL NUTS.

D. ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS.
3. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATIONS AND MANUAL OF STEEL CONSTRUCTION, 13TH EDITION.
4. HOLES SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER.
5. HOT–DIP GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING: ASTM A123, ASTM, A153/A153M OR ASTM A653/A653M, G90, AS APPLICABLE.
6. REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO WHICH STICK OR PASTE MATERIAL IS APPLIED, WITH A TORCH TO A TEMPERATURE SUFFICIENT TO MELT THE METALLICS IN STICK OR PASTED; SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF EXCESS MATERIAL.
7. A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.
8. ALL PROPOSED AN/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.
9. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
10. ALL ASSEMBLY AND ANCHOR BOLTS ARE TO BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED IN SECTION 8.1 OF THE AISC, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", DATED JUNE 30, 2004.
11. FLAT WASHERS ARE TO BE INSTALLED WITH BOLTS OVER SLOTTED HOLES.
12. DO NOT OVER TORQUE ASSEMBLY BOLTS. GALVANIZING ON BOLTS, NUTS, AND STEEL PARTS ;MAY ACT AS A LUBRICANT, THUS OVER TIGHTENING MAY OCCUR AND MAY CAUSE BOLTS TO CRACK AND SNAP OFF.
13. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE LIP OUT. PAL NUTS ARE NOT REQUIRED WHEN SELF–LOCKING NUTS ARE PROVIDED.
14. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
15. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1:2010, STRUCTURAL WELDING CODE–REINFORCING STEEL. ALL WELDERS SHALL DISPLAY PROPER CERTIFICATION OF QUALIFICATION.

GROUNDING NOTES:

1. ALL CADWELD CONNECTIONS TO GALVANIZED MATERIAL SHALL BE PROPERLY PREPARED TO ASSURE A SATISFACTORY CADWELD.
2. CADWELD CONNECTION SHALL BE COATED WITH COLD GALVANIZING SPRAY.
3. ALL VERTICAL JUMPERS SHALL NOT BE WELDED WITHIN TWO FT OF THE GROUND ROD.
4. SECTOR GROUNDING DIAGRAM:



PLANS PREPARED FOR:

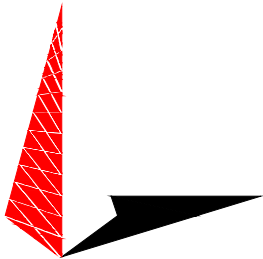


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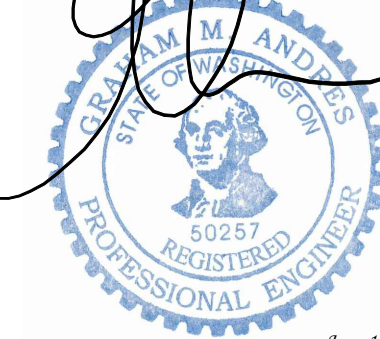
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GENERAL  
NOTES

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1

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