

City of Scottsbluff, Nebraska

Monday, May 16, 2016

Regular Meeting

Item Reports1

Council to consider a request from Verizon Wireless to change the site configuration of equipment located on the 21st Avenue water tower and authorize the Mayor to sign the Consent to Modification.

Staff Contact: Nathan Johnson, City Manager

Agenda Statement

Item No.

For meeting of: May 16, 2016

AGENDA TITLE: Council to consider a request from Verizon Wireless to change the site configuration of equipment located on the 21st Avenue water tower.

SUBMITTED BY DEPARTMENT/ORGANIZATION: Public Works Department

PRESENTATION BY: Nathan Johnson, City Manager

SUMMARY EXPLANATION: Verizon Wireless is one of three tenants we have on the 21st Avenue water tower. They are upgrading their equipment and request that the City allow them to change the site configuration of their equipment.

To date, we have had no issues with this tenant. Legal has reviewed the existing agreement and their equipment modification plans. From a legal standpoint, the request is appropriate if the City finds no interference or equipment issues. Notation of such has been added to their Consent to Modifications form.

BOARD/COMMISSION RECOMMENDATION:

STAFF RECOMMENDATION: That Council approve the request from Verizon Wireless and authorize the Mayor to sign the Consent to Modifications form.

EXHIBITS

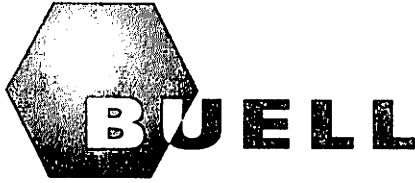
Resolution Ordinance Contract Minutes Plan/Map

Other (specify) Consent to Modifications form

NOTIFICATION LIST: Yes No Further Instructions

APPROVAL FOR SUBMITTAL: _____
City Manager

Rev 3/1/99CClerk



Buell Consulting, Inc.
1360 Energy Park Drive, Suite 210
Saint Paul, Minnesota 55108
(651) 361-8110
www.buellconsulting.com

*Site Acquisition
Permitting
Established 1991*

2 May, 2016

City of Scottsbluff Water Department
Attn: Jack Satur
2525 Circle Drive
Scottsbluff, NE 69361

RE: Water Tower Attachment Communication Site Agreement dated 11-16-2002 between City of Scottsbluff (Lessor), and ALLTEL Communications of Nebraska, Inc., predecessor-in-interest to Verizon Wireless (Lessee).

VZW Site ID: NE01 Scottsbluff WT
Site Address: 1604 21st Ave, Scottsbluff, NE 69361

Dear Jack,

Pursuant to the above referenced agreement, Verizon Wireless is hereby requesting your consent to a change in the site configuration at the above-referenced site.

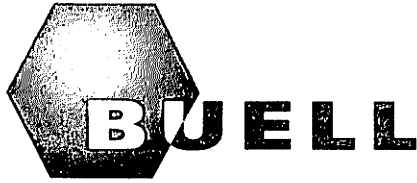
Verizon Wireless is in the process of upgrading their wireless network to incorporate AWS technology. As technology advances, it is necessary for Verizon Wireless to upgrade their equipment, which will consist of swapping (3) antennas, adding (3) antennas and adding accessory equipment (RRUS). The enclosed construction drawings outline the specifics of this modification. Also, a structural review of the tower has been done, and a copy of the analysis is attached.

On page two of this letter, a form is provided for the City of Scottsbluff to indicate their consent for the proposed modification. Please complete the form and return it to me as soon as possible.

Please do not hesitate to contact me at 651-341-5666 or dmccain@buellconsulting.com with questions you may have.

Sincerely,

Donovan McCain
Buell Consulting, Inc.
Verizon Wireless Agent
dmccain@buellconsulting.com



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1360 Energy Park Drive, Suite 210
Saint Paul, Minnesota 55108
(651) 361-8110
www.buellconsulting.com

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COMPLETE AND EMAIL to
dmccain@buellconsulting.com

CONSENT TO MODIFICATIONS

VZW Site ID: NE01 Scottsbluff WT
Site Address: 1604 21st Ave, Scottsbluff, NE 69361

The "City of Scottsbluff" acknowledges receipt of a request for consent to a site modification with connecting appurtenances currently located at the above referenced site. The "City of Scottsbluff" hereby consents to the proposed modifications.

LESSOR:

Name: Date

Title:

ACCESS INFORMATION

Please indicate the name and telephone number of the person that Verizon Wireless needs to contact in order to coordinate the logistics of the proposed antenna change.

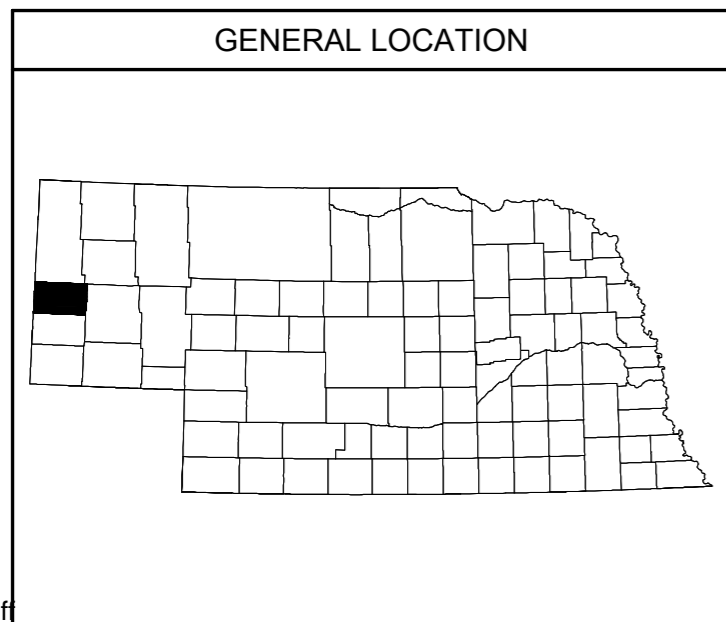
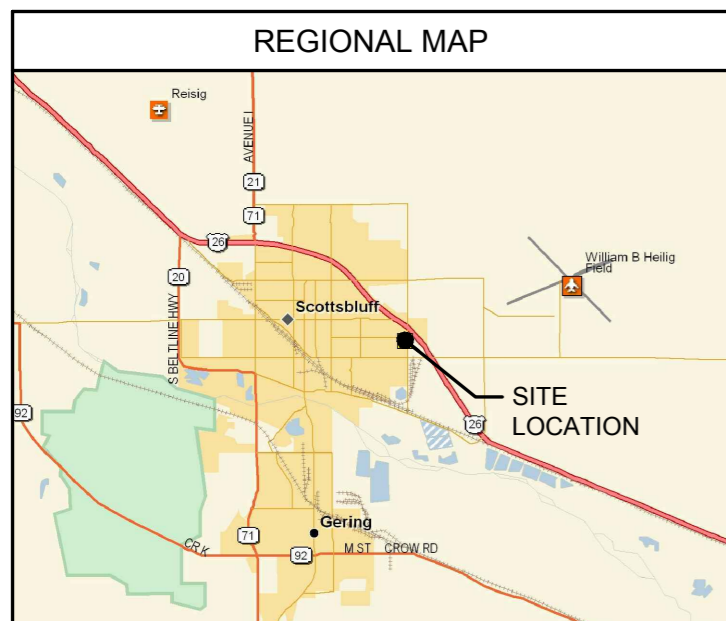
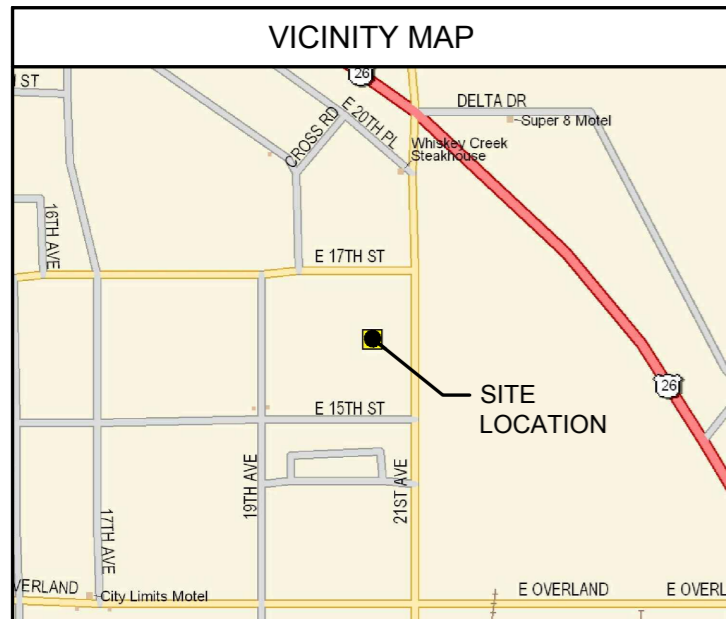
Name Telephone Number

Please list any special considerations that need to be taken into account in coordinating the proposed upgrade. For example, please list any dates of special events, other scheduled maintenance, special hours request, and the like that may interfere with the proposed Verizon Wireless upgrade.

That requests for access to the equipment located on the tower be made during
business hours - 7:00 a.m. and 4:00 p.m. Monday through Friday.

That as per Agreement, the change in site configuration won't interfere with the
structural integrity of the tower or equipment owned by other tenants.

By signing the consent, the City makes no assurance to Verizon Wireless as to the availability of space for the new configuration.



NE01_SCOTTSBLUFF WT

PCS LTE CARRIER ADD ANTENNA MODIFICATION

1604 21ST AVE
SCOTTSBLUFF, NE 69361

DIRECTIONS

FROM I-80 & I-25:
HEAD NORTH ON I-25. TAKE EXIT 17 TO MERGE ONTO US-85 N/TORRINGTON RD TOWARD TORRINGTON. CONTINUE TO FOLLOW US-85 N. TURN RIGHT ONTO WY-151 E. CONTINUE ONTO NE-88 E. TURN LEFT ONTO NE-71 N/STATE HWY 88. CONTINUE TO FOLLOW NE-71 N. TAKE THE SO BELTLINE HWY EXIT TOWARD SCOTTSBLUFF. TURN LEFT ONTO S BELTLINE HWY E. TAKE THE 1ST RIGHT TOWARD 21ST AVE. CONTINUE STRAIGHT ONTO 21ST AVE. DESTINATION WILL BE ON THE LEFT

THESE DOCUMENTS ARE DRAWN TO SCALE FOR 24X36 SIZE SHEET.
DOCUMENTS PRINTED IN 11X17 SIZE SHEET ARE
REDUCED TO HALF THE ORIGINAL SCALE.



SHEET INDEX

SHEET	DESCRIPTION	REV.
T-1	TITLE SHEET	B
C-1	TOWER ELEVATIONS	B
C-2	SHELTER PLAN	B
C-3	ANTENNA SCHEDULE	B
C-4	ANTENNA CONFIGURATIONS	B
C-5	COAX INFORMATION	B
C-6	SITE PHOTOS	B
C-7	SITE PHOTOS	A
C-8	MOUNTING DETAILS	C
C-8A	MOUNTING DETAILS	A

VERIZON WIRELESS DEPARTMENTAL APPROVALS

	NAME	DATE
RF ENGINEER		
OPERATIONS MANAGER		
CONSTRUCTION ENGINEER		
CONSTRUCTION MANAGER		
REAL ESTATE MANAGER		
LANDLORD		

PROJECT INFORMATION

SITE NAME: SCOTTSBLUFF WT ADDRESS (FROM SITE PLACARD): 1604 21ST AVE SCOTTSBLUFF, NE 69361 LATITUDE (FROM VZW DATA): 41° 51' 40.92" N LONGITUDE (FROM VZW DATA): 103° 38' 11.76" W GROUND ELEVATION (FROM VZW DATA): 3880' - NAVD '88 ANTENNA TIP HEIGHT: 113.4' A.G.L. STRUCTURE HEIGHT: 127' ± A.G.L. WATER TANK OVERALL STRUCTURE HEIGHT: 132.5 ± A.G.L. YEAR WATER TANK BUILT: 1959 STRUCTURAL CONSULTANT: HUTTER TRANKINA ENGINEERING 32 W 273 ARMY TRAIL RD, SUITE #100 WAYNE, IL 60184 (630) 513-6711	SITE NAME: UNINHABITED SHELTER 2009 INTERNATIONAL BUILDING CODE 2008 NATIONAL ELECTRIC CODE TIA/EIA-222-G OR LATEST EDITION STRUCTURE CLASS II TOPOGRAPHIC CATEGORY 1 EXPOSURE CATEGORY B PROJECT DESCRIPTION: CONTRACTOR SHALL WORK DIRECTLY WITH VERIZON NETWORK OPERATIONS MANAGER, REGARDING THE PCS/LTE ANTENNAS AND LINE ADDITION. ALL ANTENNA AND LINE WORK SHALL BE PERFORMED SUCH THAT THERE IS NO INTERRUPTION IN COMMERCIAL SERVICE BETWEEN THE HOURS OF 5:00 A.M. AND 11:00 P.M. THREE SECTOR LTE/AWS (3) SBJAHH-1D65C, THREE SECTOR LTE/PCS (6) SBJAHH-1D65C, (3) ERICSSON RRUS B-13 W/ (3) A2 MODULES 700/LTE, (3) ERICSSON RRUS B-12 W/ (3) A2 MODULES PCS/LTE, (3) ERICSSON B4 A2 MODULES AWS/LTE, (1) 1-5/8" HYBRID CABLE, (1) RCMDC-3315-PF-48 TOP DISTRIBUTION BOX, (2) RCMDC-1064-PF-48 SECTOR DISTRIBUTION BOXES. (3) RRUS12 B4 ARE EXISTING.	LESSEE: VERIZON WIRELESS 10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438 CONTACT: TERRI DOLEZAL PHONE: (402) 436-4278 FAX: (402) 436-5041 SITE ACQUISITION: VERIZON WIRELESS 10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438 CONTACT: TERRI DOLEZAL PHONE: (402) 436-4278 FAX: (402) 436-5041 CONSTRUCTION ENGINEER: VERIZON WIRELESS 1620 M STREET LINCOLN, NE 68508 CONTACT: SCOTT HORKY PHONE: (402) 436-4723 CELL: (402) 470-1134 FAX: (402) 436-5041 CONSULTING ENGINEER: TERRA CONSULTING GROUP, LTD. 600 BUSSE HIGHWAY PARK RIDGE, IL 60068 CONTACT: DENNIS MURPHY PHONE: (847) 698-6400 FAX: (847) 698-6401
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10801 Bush Lake Rd
Bloomington, MN 55438



600 Busse Highway
Park Ridge, IL 60068
Ph: 847/698-6400
Fax: 847/698-6401

NO.	DESCRIPTION	DATE	BY		DMS	DMS
			RA	DM		
A	ISSUED FOR REVIEW	01/15/16				
B	REVISED PER CLIENT COMMENTS	04/12/16				
C	REVISED PER CLIENT COMMENTS	04/19/16				

NE01 SCOTTSBLUFF WT

1604 21ST AVE
SCOTTSBLUFF, NE 69361

DRAWN BY:	RA
CHECKED BY:	DM
DATE:	12/02/15
PROJECT #:	47-160

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	01/15/16	RA
B	REVISED PER CLIENT COMMENTS	04/12/16	DM
C	REVISED PER CLIENT COMMENTS	04/19/16	DM

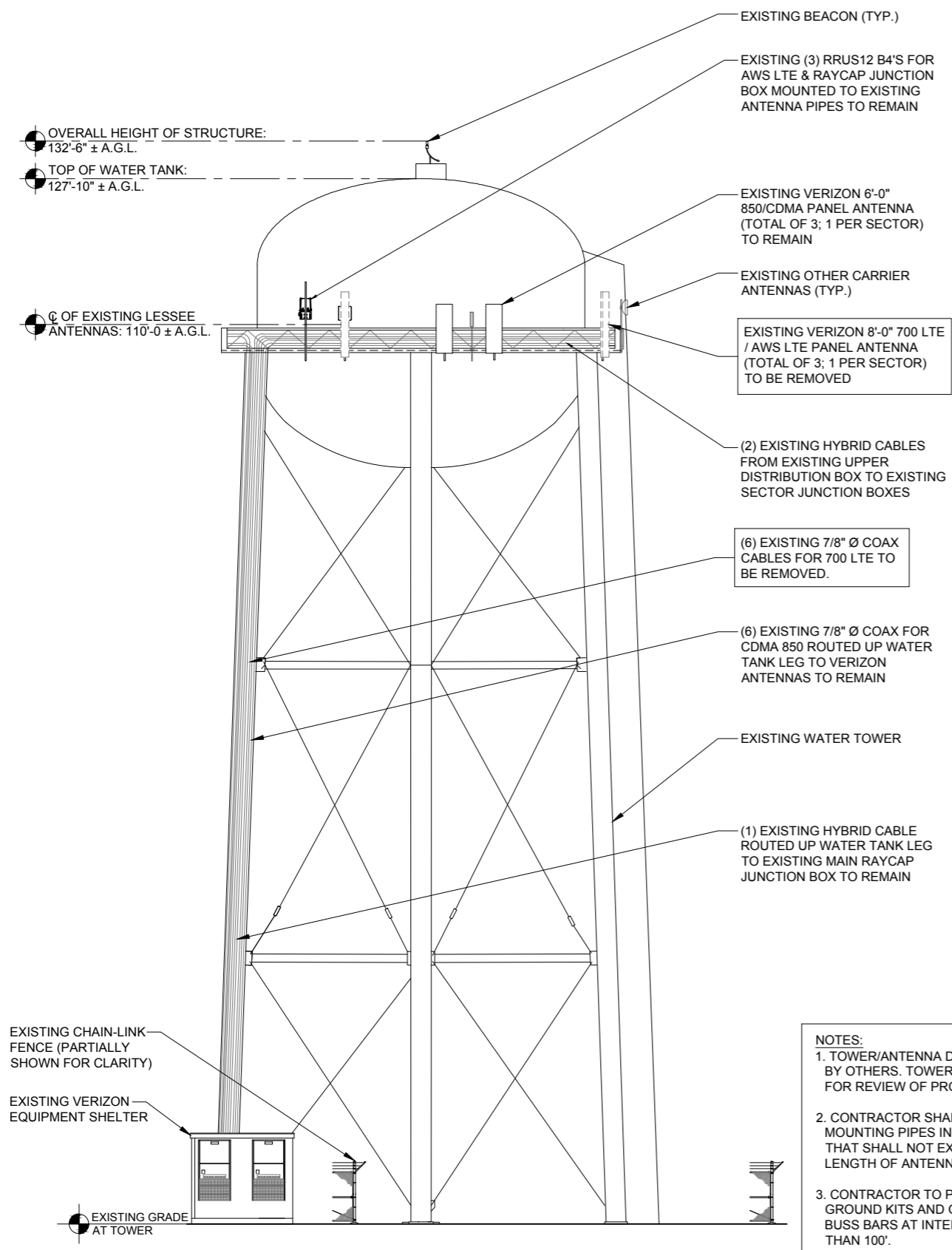
**NE01
SCOTTSBLUFF
WT**

1604 21ST AVE
SCOTTSBLUFF, NE 69361

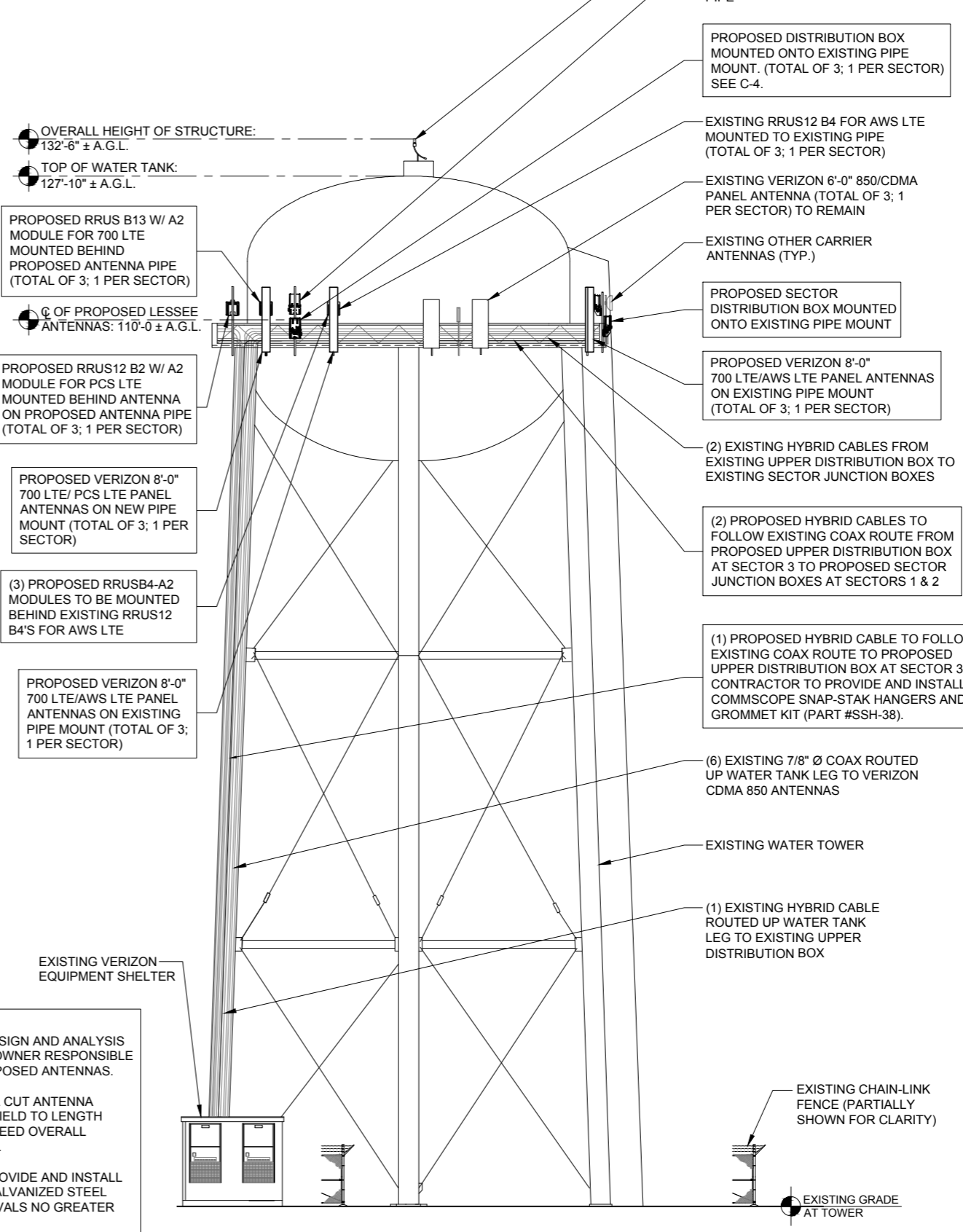
DRAWN BY:	RA
CHECKED BY:	DM
DATE:	12/02/15
PROJECT #:	47-160

SHEET TITLE
TOWER ELEVATIONS

SHEET NUMBER
C-1



1 EXISTING TOWER ELEVATION
SCALE: 1/8" = 1'-0"

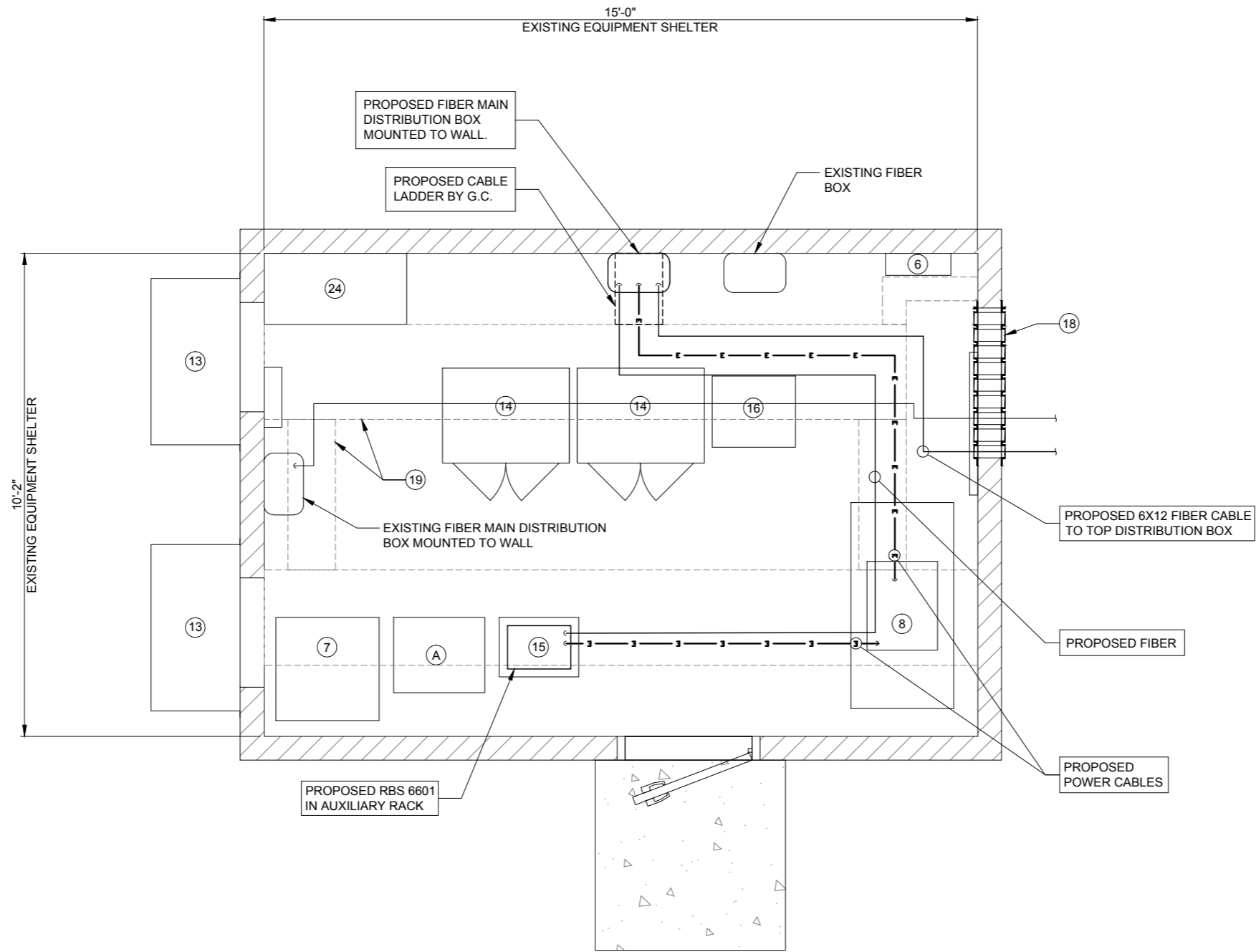


2 PROPOSED TOWER ELEVATION
SCALE: 1/8" = 1'-0"

NOTES:
1. TOWER/ANTENNA DESIGN AND ANALYSIS BY OTHERS. TOWER OWNER RESPONSIBLE FOR REVIEW OF PROPOSED ANTENNAS.
2. CONTRACTOR SHALL CUT ANTENNA MOUNTING PIPES IN FIELD TO LENGTH THAT SHALL NOT EXCEED OVERALL LENGTH OF ANTENNA.
3. CONTRACTOR TO PROVIDE AND INSTALL GROUND KITS AND GALVANIZED STEEL BUSS BARS AT INTERVALS NO GREATER THAN 100'.
4. CONTRACTOR TO REMOVE ALL EXISTING ANTENNAS, MOUNTS, TMA'S, COAX, ETC.

5. CONTRACTOR SHALL VERIFY THAT ALL ANTENNAS ARE ABOVE BEACON LIGHT.

Regular Meeting - 5/16/2016



SCALE 3/4" = 1'-0"
 24" x 36" PRINT IS THE FULL SCALE
 FORMAT. ANY SIZE OTHER THAN
 THAT IS AT REDUCED SCALE.

1 SHELTER PLAN
 SCALE: 3/4" = 1'-0"

NOTES:
 1. CONTRACTOR TO PROVIDE AND INSTALL ALL JUMPERS AND CONNECTORS REQUIRED.
 2. PROPOSED RET CABLE TO BE PROVIDED BY VERIZON AND INSTALLED BY CONTRACTOR.
 3. CONTRACTOR SHALL PROVIDE AND INSTALL HORIZONTAL AND VERTICAL CABLE TRAY REQUIRED TO ROUTE CABLING TO AND FROM THE FIBER FIF RACK.

- (A) LTE EQUIPMENT CABINET
- (B) PCS EQUIPMENT CABINET
- (1) ELECTRICAL PANEL
- (2) AC SERVICE DISCONNECT
- (3) DC DISTRIBUTION PANEL
- (4) DC POWER PANEL
- (5) TRANSFER SWITCH
- (6) MAIN LOAD CENTER
- (7) BATTERY
- (8) BATTERY/ RECTIFIER

EQUIPMENT LEGEND

- (9) RECTIFIER
- (10) TELCO BOARD
- (11) TELCO GROUND BAR
- (12) LUCENT EQUIPMENT CABINET
- (13) HVAC UNIT
- (14) MOTOROLA EQUIPMENT CABINET
- (15) FIF RACK
- (16) EQUIPMENT RACK

- (17) CABLE ENTRANCE PANEL/PORT (USED)
- (18) CABLE ENTRANCE PANEL/PORT
- (19) EXISTING CABLE LADDER
- (20) FIRE EXTINGUISHER
- (21) FIRE SUPPRESSION SYSTEM
- (22) THERMOSTAT/ HVAC CONTROLS
- (24) DESK
- (25) SHELF

ACRONYM LEGEND

- LTE: LONG TERM EVOLUTION
- FIF: FACILITY INTERFACE FRAME
- TDMA: TIME DIVISION MULTIPLE ACCESS
- CDMA: CODE DIVISION MULTIPLE ACCESS
- GSM: GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS
- RRU: REMOTE RADIO UNIT
- RET: REMOTE ELECTRICAL TILT
- TMA: TOWER MOUNTED AMPLIFIER
- CMU: CONCRETE MASONRY UNIT
- GPS: GLOBAL POSITIONING SYSTEM
- HVAC: HEATING VENTILATION & AIR CONDITIONING

verizon wireless
 10801 Bush Lake Rd
 Bloomington, MN 55438

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 COMMUNICATIONS, INC.
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 Park Ridge, IL 60068
 Ph: 847/998-6400
 Fax: 847/998-6401

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**NE01
 SCOTTSBLUFF
 WT**
 1604 21ST AVE
 SCOTTSBLUFF, NE 69361

DRAWN BY:	RA
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DATE:	12/02/15
PROJECT #:	47-160

SHEET TITLE
SHELTER PLAN

SHEET NUMBER
C-2

EXISTING ANTENNA KEY												EXISTING COAX KEY						EXISTING TTA/TMA KEY													
ANT. POS.	MOUNT AZIMUTH	FUNCTION	QTY	ANTENNA MODEL	ANTENNA TECHNOLOGY	ANT. LENGTH	ANT. TIP	RAD CENTER	DT ELEC.	DT MECH.	STATUS	QTY	COAX TYPE	MFR.	MODEL	DIELECTRIC	DIAMETER	LENGTH	STATUS	QTY	MODEL	VENDOR	STATUS								
1-1.1	70°	700 T/R 0	1	HTXCW631619R000	700 LTE	82.5"	113.44'	110'	0	0	REMOVE	2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	REMOVE												
1-1.2		2ND PORT		700 LTE																											
1-1.3		AWS T/R 0		AWS LTE																1	RRU	ERICSSON	RRUS-12	(1) 1X1 HYBRID CABLE HFT412-2529-10 (+10) (DISTRIBUTION BOX TO RRU)		EXISTING					
1-1.4		AWS T/R 1		AWS LTE																											
1-3.1	120°		1	BXA-80090-6CF	850 CDMA	71.1"	112.96'	110'	0	0	EXISTING	2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	EXISTING												
2-5.1	190°	700 T/R 0	1	HTXCW631619R000	700 LTE	82.5"	113.44'	110'	4	0	REMOVE	2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	REMOVE												
2-5.2		2ND PORT		700 LTE																											
2-5.3		AWS T/R 0		AWS LTE																1	RRU	ERICSSON	RRUS-12	(1) 1X1 HYBRID CABLE HFT412-2529-10 (+10) (DISTRIBUTION BOX TO RRU)		EXISTING					
2-5.4		AWS T/R 1		AWS LTE																											
2-7.1	240°		1	BXA-80040-6CF-6	850 CDMA	71.1"	112.96'	110'	6	1	EXISTING	2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	EXISTING												
3-9.1	300°		1	BXA-80040-6CF-6	850 CDMA	72"	113.02'	110'	6	1	EXISTING	2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	EXISTING												
3-10.1	310°	700 T/R 0	1	HTXCW631619R000	700 LTE	82.5"	113.44'	110'	4	0	REMOVE	2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	REMOVE												
3-10.2		2ND PORT		700 LTE																											
3-10.3		AWS T/R 0		AWS LTE																1	RRU	ERICSSON	RRUS-12	(1) 1X1 HYBRID CABLE HFT412-2529-10 (+10) (DISTRIBUTION BOX TO RRU)		EXISTING					
3-10.4		AWS T/R 1		AWS LTE																											
												18	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING												

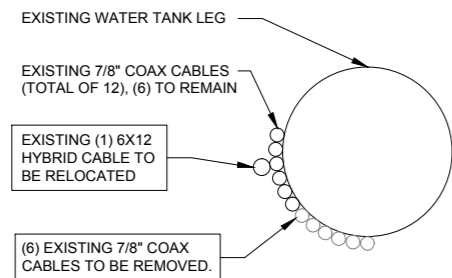
ADDITIONAL EXISTING EQUIPMENT:
(2) RAYCAP RCMDC-3315-PF-48 DISTRIBUTION BOXES (1 INSIDE SHELTER, 1 ON TOWER)
(2) 2x2 HYBRID CABLES ±50' (UPPER DISTRIBUTION BOX TO SECTOR BOXES)
(1) 6x12 HFT1206-24549-180 HYBRID CABLE ±180' (DISTRIBUTION BOX TO DISTRIBUTION BOX)
(3) HYBRID JUMPER CABLES HFT412-2529-12 (15') (DISTRIBUTION BOX TO AWS)
(3) ERICSSON RRUS12 B4 REMOTE RADIO UNITS (1 PER SECTOR, AWS LTE)

(1) CC-05-060-FM (196.85') HOME RUN RET
(2) CC-05-015-FM (49.21') DAISY CHAIN RET
(1) SHELTER POWER CABLE ±19' (POWER PLANT TO DISTRIBUTION BOX)
(1) SHELTER POWER CABLE ±12' (POWER PLANT TO AWS)
(1) FIBER CABLE ±11' (eNB TO DISTRIBUTION BOX)

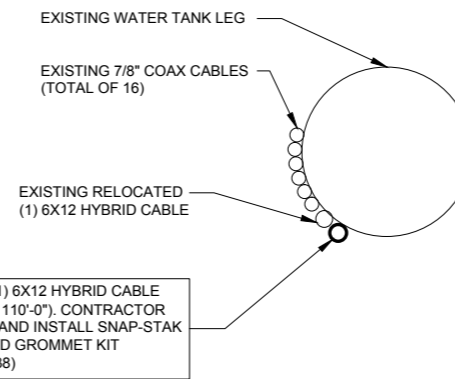
1 EXISTING ANTENNA SCHEDULE
N.T.S.

PROPOSED ANTENNA KEY												PROPOSED COAX KEY						PROPOSED TTA/TMA KEY													
ANT. POS.	MOUNT AZIMUTH	FUNCTION	QTY	ANTENNA MODEL	ANTENNA TECHNOLOGY	ANT. LENGTH	ANT. TIP	RAD CENTER	DT ELEC.	DT MECH.	STATUS	QTY	COAX TYPE	MFR.	MODEL	DIELECTRIC	DIAMETER	LENGTH	STATUS	QTY	MODEL	VENDOR	STATUS								
1-1.1	70°	TX0/RX0	1	SBIAHH-1D65C	700 LTE	96.6"	114.03'	110'	0	0	PROPOSED	1	RRU	ERICSSON	RRUS-B13	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED													
1-1.2		TX1/RX1		700 LTE																2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
1-1.3		SEAL		FUTURE 850																											
1-1.4		SEAL		FUTURE 850																											
1-1.5		TX0/RX0		AWS LTE																1	RRU	ERICSSON	RRUS12 B4	(2) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		EXISTING					
1-1.6		TX1/RX1		AWS LTE																1	RRU	ERICSSON	B4 A2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
1-1.7		RX2		AWS LTE																4	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING				
1-1.8		RX3		AWS LTE																											
1-2.1	70°	TX0/RX0	1	SBIAHH-1D65C	700 LTE	96.6"	114.03'	110'	0	0	PROPOSED	-	RRU	ERICSSON	RRUS-B13	SHARES 1X1 HYBRID JUMPER CABLE HFT412-2529-15 AND DISTRIBUTION BOX															
1-2.2		TX1/RX1		700 LTE																2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
1-2.3		SEAL		FUTURE 850																											
1-2.4		SEAL		FUTURE 850																											
1-2.5		TX0/RX0		PCS LTE																1	RRU	ERICSSON	RRUS12 B2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
1-2.6		TX1/RX1		PCS LTE																1	RRU	ERICSSON	B2 A2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
1-2.7		RX2		PCS LTE																4	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
1-2.8		RX3		PCS LTE																											
1-3.1	120°	TX0/RX0	1	BXA-80090-6CF	850 CDMA	71.1"	112.96'	110'	0	0	EXISTING	2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING												
1-3.2		TX1/RX1		850 CDMA															2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	EXISTING					
2-1.1	190°	TX0/RX0	1	SBIAHH-1D65C	700 LTE	96.6"	114.03'	110'	0	0	PROPOSED	1	RRU	ERICSSON	RRUS-B13	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED													
2-1.2		TX1/RX1		700 LTE																2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
2-1.3		SEAL		FUTURE 850																											
2-1.4		SEAL		FUTURE 850																											
2-1.5		TX0/RX0		AWS LTE																1	RRU	ERICSSON	RRUS12 B4	(2) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		EXISTING					
2-1.6		TX1/RX1		AWS LTE																1	RRU	ERICSSON	B4 A2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
2-1.7		RX2		AWS LTE																4	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING				
2-1.8		RX3		AWS LTE																											
2-2.1	190°	TX0/RX0	1	SBIAHH-1D65C	700 LTE	96.6"	114.03'	110'	0	0	PROPOSED	-	RRU	ERICSSON	RRUS-B13	SHARES 1X1 HYBRID JUMPER CABLE HFT412-2529-15 AND DISTRIBUTION BOX															
2-2.2		TX1/RX1		700 LTE																2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
2-2.3		SEAL		FUTURE 850																											
2-2.4		SEAL		FUTURE 850																											
2-2.5		TX0/RX0		PCS LTE																1	RRU	ERICSSON	RRUS12 B2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
2-2.6		TX1/RX1		PCS LTE																1	RRU	ERICSSON	B2 A2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
2-2.7		RX2		PCS LTE																4	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
2-2.8		RX3		PCS LTE																											
2-3.1	240°	TX0/RX0	1	BXA-80040-6CF	850 CDMA	71.1"	112.96'	110'	0	0	EXISTING	2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING												
2-3.2		TX1/RX1		850 CDMA															2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	EXISTING					
3-1.1	300°	TX0/RX0	1	BXA-80040-6CF	850 CDMA	71.1"	112.96'	110'	0	0	EXISTING	2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING												
3-1.2		TX1/RX1		850 CDMA															2	MAIN	ANDREW	LDF5-50A	FOAM	7/8"	190'	EXISTING					
3-2.1	310°	TX0/RX0	1	SBIAHH-1D65C	700 LTE	96.6"	114.03'	110'	0	0	PROPOSED	1	RRU	ERICSSON	RRUS-B13	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED													
3-2.2		TX1/RX1		700 LTE																2	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	PROPOSED				
3-2.3		SEAL		FUTURE 850																											
3-2.4		SEAL		FUTURE 850																											
3-2.5		TX0/RX0		AWS LTE																1	RRU	ERICSSON	RRUS12 B4	(2) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		EXISTING					
3-2.6		TX1/RX1		AWS LTE																1	RRU	ERICSSON	B4 A2	(1) 1X1 HYBRID JUMPER CABLE HFT412-2529-15 (+15) (DISTRIBUTION BOX TO RRH)		PROPOSED					
3-2.7		RX2		AWS LTE																4	JMPR	ANDREW	LDF4-50A	FOAM	1/2"	6'	EXISTING				
3-2.8		RX3		AWS LTE																											
3-3.1	310°	TX0/RX0	1	SBIAHH-1D65C	700 LTE	96.6"	114.03'	110'	0	0	PROPOSED	-	RRU	ERICSSON	RRUS-B13	SHARES 1X1 HYBRID JUMPER CABLE HFT412-2529-15 AND DISTRIBUTION BOX															

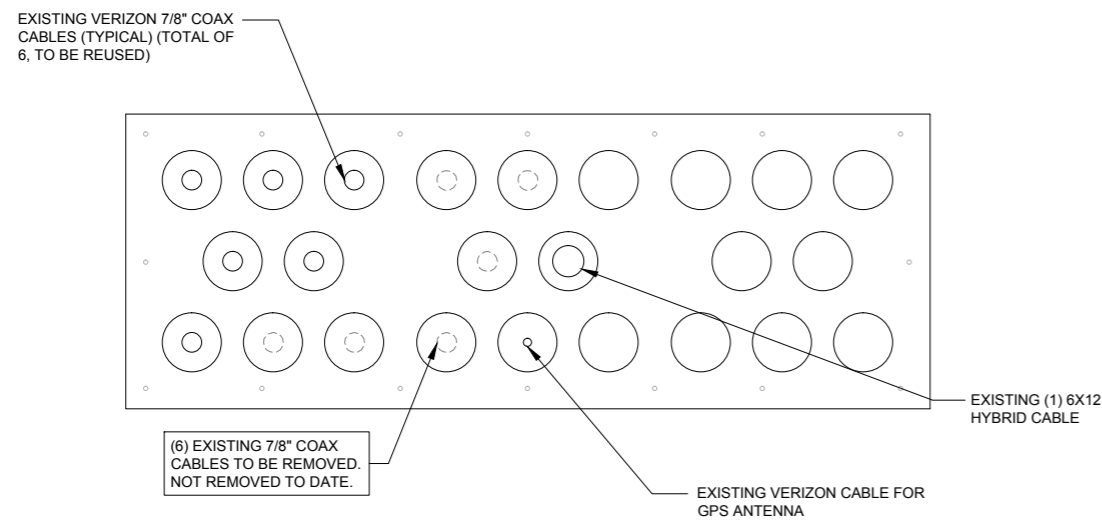
NOTE:
 1. CONTRACTOR TO PROVIDE AND INSTALL HYBRID CABLE ATTACHMENT TO TOWER HARDWARE.
 2. CONTRACTOR TO SWEEP TEST EXISTING COAX CABLES AND VERIFY THEY ARE IN GOOD WORKING ORDER.



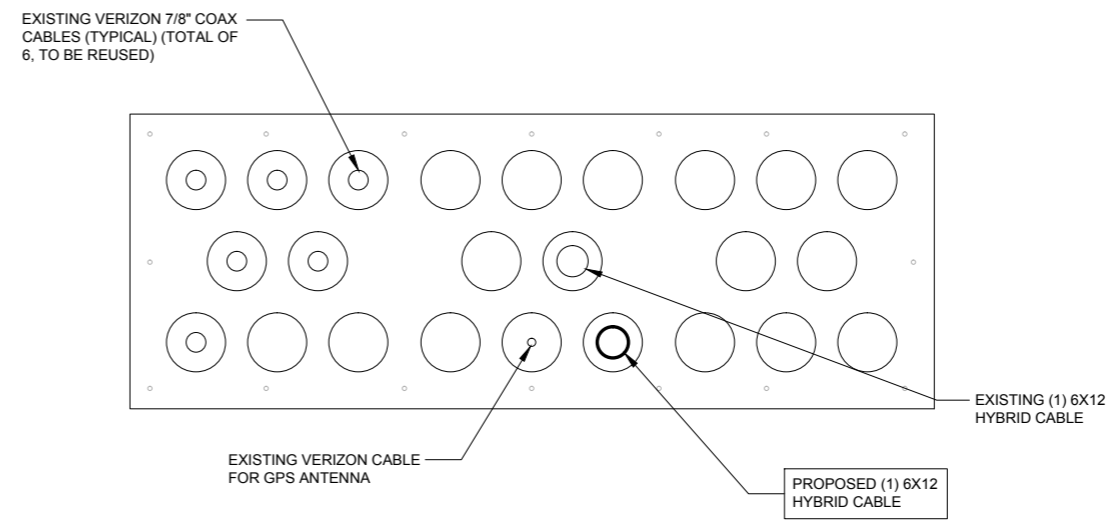
1 EXISTING COAX CONFIGURATION
N.T.S.



2 PROPOSED COAX CONFIGURATION
N.T.S.



3 EXISTING ENTRY PANEL DETAIL (OUTSIDE SHELTER)
N.T.S.



4 PROPOSED ENTRY PANEL DETAIL (OUTSIDE SHELTER)
N.T.S.



NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	01/15/16	RA
B	REVISED PER CLIENT COMMENTS	04/12/16	DMS
C	REVISED PER CLIENT COMMENTS	04/19/16	DMS

**NE01
SCOTTSBLUFF
WT**
 1604 21ST AVE
SCOTTSBLUFF, NE 69361

DRAWN BY:	RA
CHECKED BY:	DM
DATE:	12/02/15
PROJECT #:	47-160

SHEET TITLE
COAX INFORMATION

SHEET NUMBER
C-5



1 EXISTING TOWER PHOTO
N.T.S.



2 EXISTING COAX ENTRY PORT
(OUTSIDE SHELTER)
N.T.S.



CONTRACTOR TO PROVIDE AND INSTALL ALL ICE BRIDGE HARDWARE TO ACCOMMODATE PROPOSED HYBRID CABLES.

3 EXISTING TRAPEZE
N.T.S.



2 EXISTING VERTICAL COAX
ROUTING UP THE LADDER
N.T.S.



CONTRACTOR TO PROVIDE AND INSTALL ALL HYBRID CABLE ATTACHMENT TO WATER TANK HARDWARE TO ACCOMMODATE PROPOSED COAX AND HYBRID CABLES.

5 EXISTING VERTICAL COAX ROUTING
N.T.S.



6 (INSIDE SHELTER)
N.T.S.



PROPOSED DISTRIBUTION BOX LOCATION

7 PROPOSED DISTRIBUTION BOX VICINITY
N.T.S.

NOTE:
ENGINEER IS TO SHIFT SOME EXISTING COMPONENTS TO ALLOW ROOM FOR RBS 6601 AND RET CONTROLLER.



PROPOSED PCS LTE HARDWARE

8 PROPOSED RBS6601 LOCATION
N.T.S.

verizonwireless

10801 Bush Lake Rd
Bloomington, MN 55438

TERRA
TELECOMMUNICATIONS, LTD.

600, Busse Highway
P.O. Box 668
Plymouth, MN 55442
Tel: 647/998-6400
Fax: 647/998-6401

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**NE01
SCOTTSBLUFF
WT**

1604 21ST AVE
SCOTTSBLUFF, NE 69361

DRAWN BY:	RA
CHECKED BY:	DM
DATE:	12/02/15
PROJECT #:	47-160

SHEET TITLE
**SITE
PHOTOGRAPHS**

SHEET NUMBER
C-6



1 EXISTING ANTENNA - ALPHA SECTOR
N.T.S.



2 EXISTING ANTENNA - BETA SECTOR
N.T.S.



3 EXISTING ANTENNA - GAMMA SECTOR
N.T.S.

verizonwireless
10801 Bush Lake Rd
Bloomington, MN 55438

TERRA
COMMUNICATIONS CORPORATION, LTD.
600, Busse Highway
P.O. Box 6400
L 6400
Mn 55438
Tel: 647/998-6400
Fax: 647/998-6401

NO.	DESCRIPTION	DATE	BY	
			RA	DMS
A	ISSUED FOR REVIEW	01/15/16	RA	DMS
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C	REVISED PER CLIENT COMMENTS	04/19/16	DMS	DMS

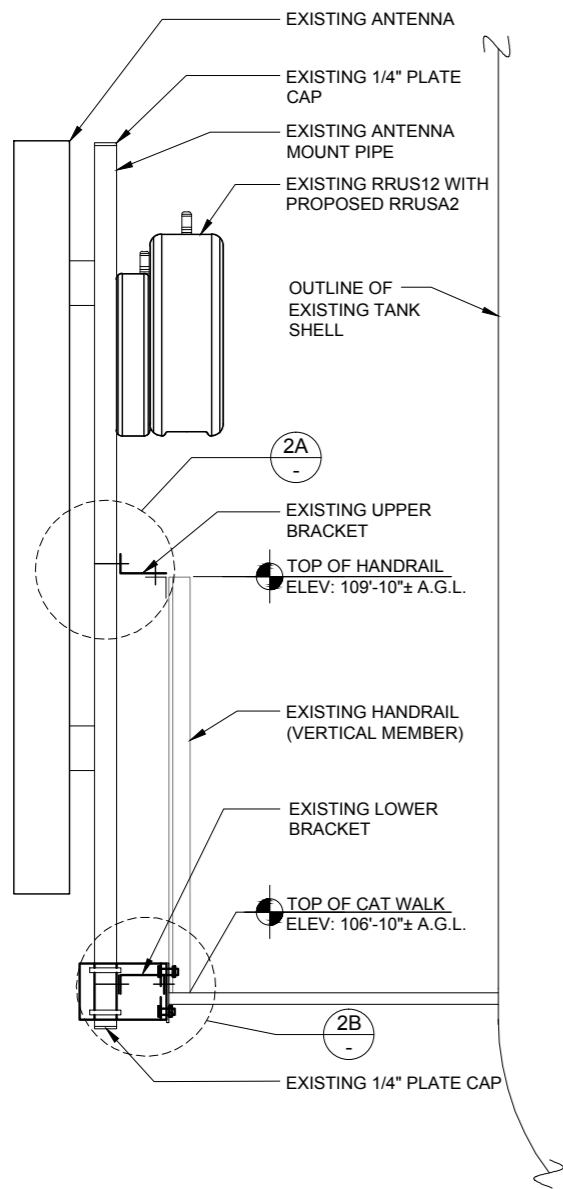
**NE01
SCOTTSBLUFF
WT**
1604 21ST AVE
SCOTTSBLUFF, NE 69361

DRAWN BY: RA
CHECKED BY: DM
DATE: 12/02/15
PROJECT #: 47-160

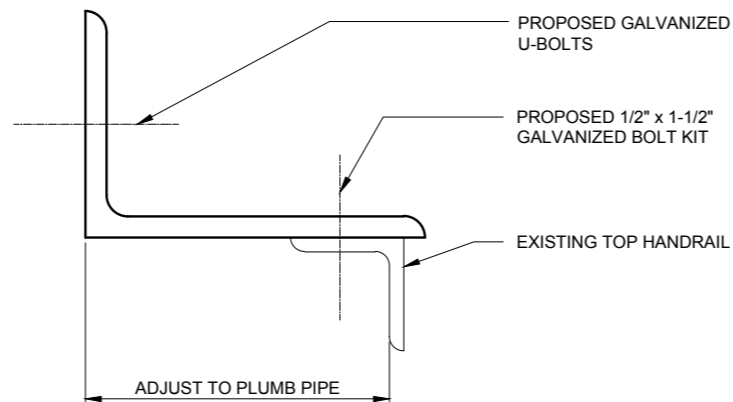
SHEET TITLE
**SITE
PHOTOGRAPHS**

SHEET NUMBER
C-7

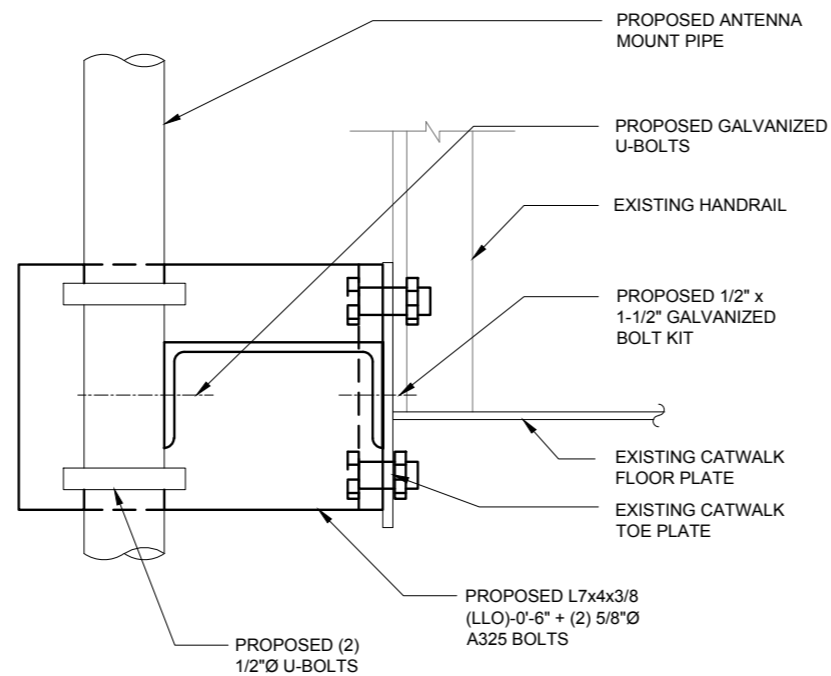
CONTRACTOR TO PROVIDE AND INSTALL ALL ANTENNA, DISTRIBUTION BOX, AND RRU MOUNTING HARDWARE REQUIRED



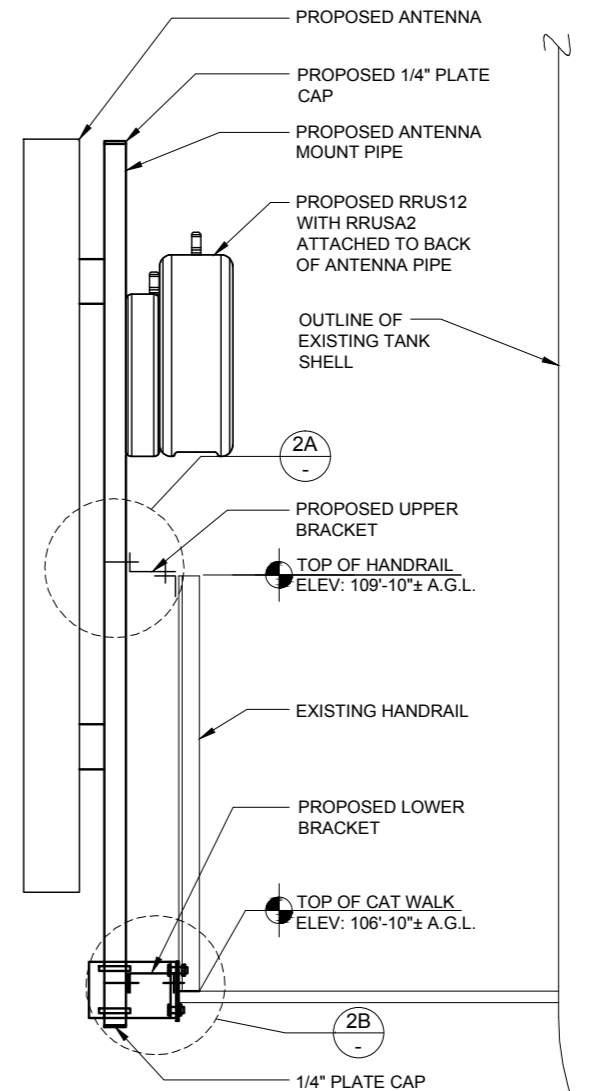
1 RRUS/RRUA2 MOUNTING DETAIL
 N.T.S.



2A UPPER BRACKET DETAIL
 N.T.S.



ANTENNA MOUNTING DETAIL
 N.T.S.



ANTENNA MOUNTING DETAIL
 N.T.S.



10801 Bush Lake Rd
 Bloomington, MN 55438



600 Busse Highway
 Park Ridge, IL 60068
 Ph: 847/998-6400
 Fax: 847/998-6401

NO.	DESCRIPTION	DATE	BY
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B	REVISED PER CLIENT COMMENTS	04/12/16	DMS
C	REVISED PER CLIENT COMMENTS	04/19/16	DMS

NE01
 SCOTTSBLUFF
 WT

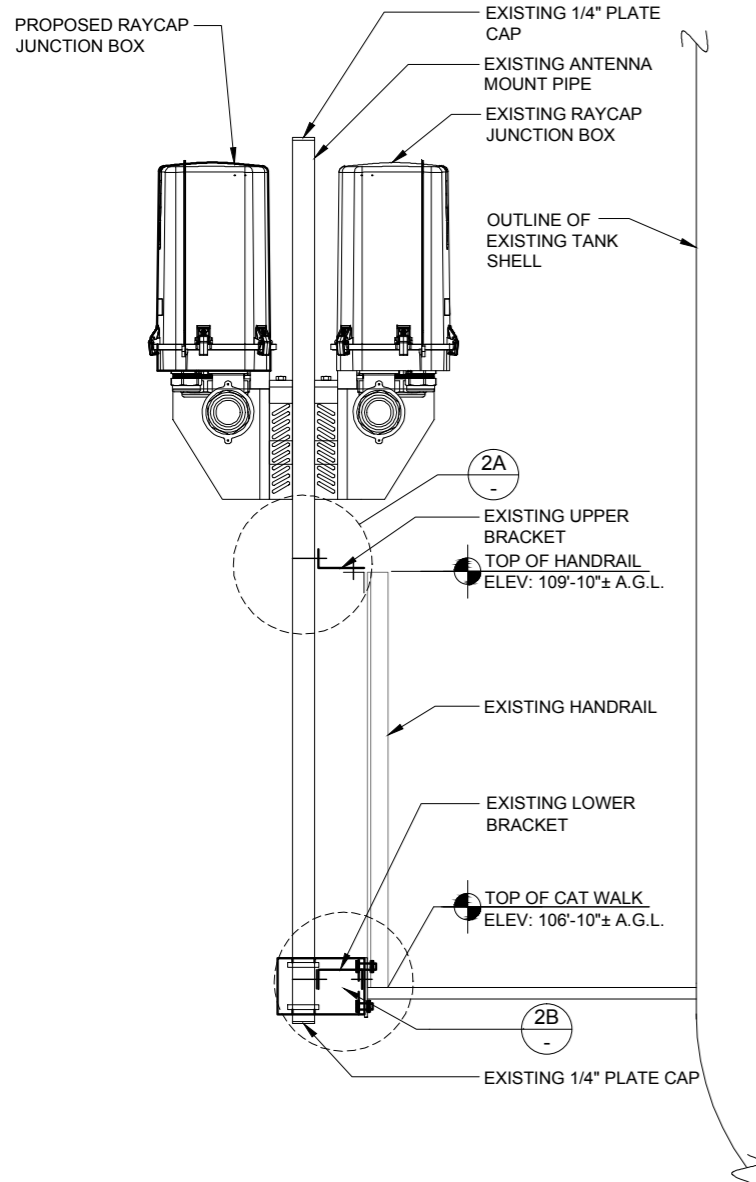
1604 21ST AVE
 SCOTTSBLUFF, NE 69361

DRAWN BY:	RA
CHECKED BY:	DM
DATE:	12/02/15
PROJECT #:	47-160

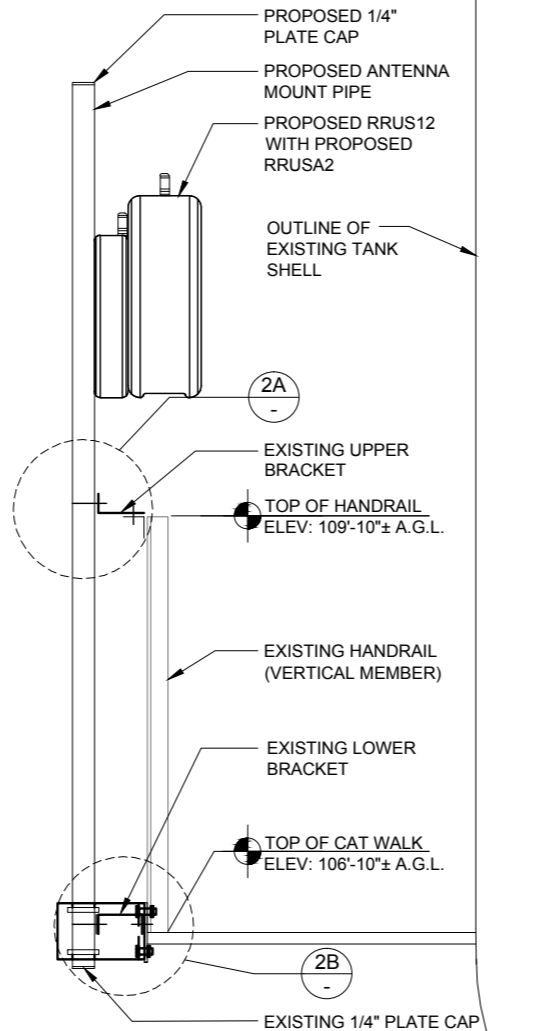
SHEET TITLE
 MOUNTING
 DETAILS

SHEET NUMBER

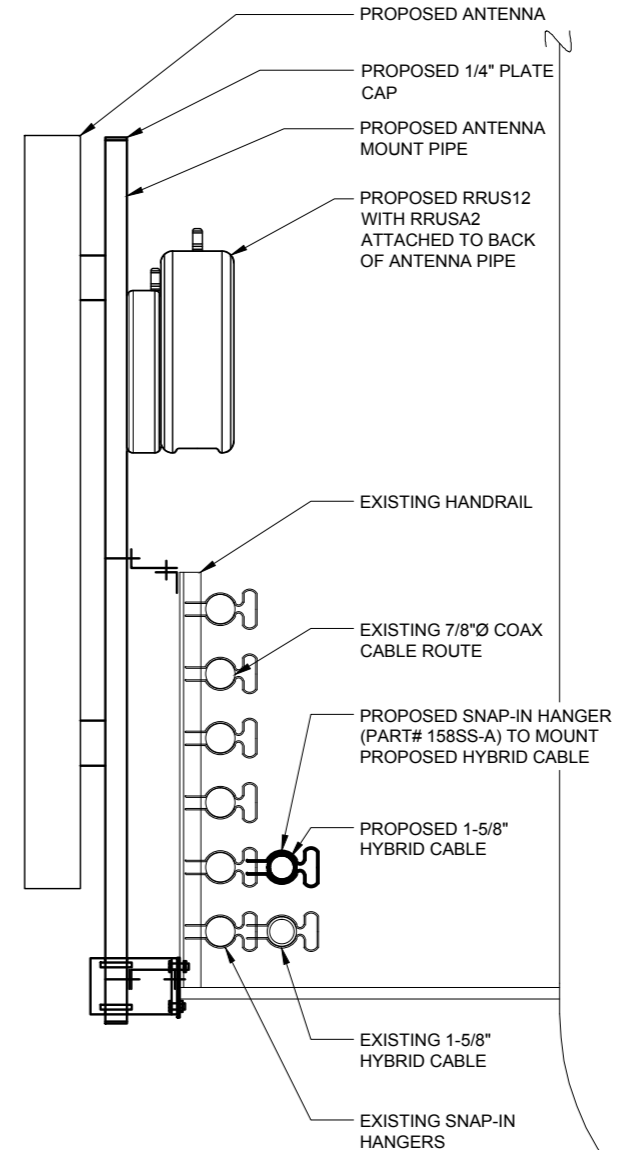
C-8



1 RAYCAP MOUNTING DETAIL
N.T.S.



HYBRID MOUNTING DETAIL
N.T.S.



HYBRID MOUNTING DETAIL
N.T.S.



10801 Bush Lake Rd
Bloomington, MN 55438



600 Busse Highway
P.O. Box 6368
Plymouth, MN 55442
Tel: 647/998-6400
Fax: 647/998-6401

NO.	DESCRIPTION	DATE	BY
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NE01
SCOTTSBLUFF
WT

1604 21ST AVE
SCOTTSBLUFF, NE 69361

DRAWN BY:	RA
CHECKED BY:	DM
DATE:	12/02/15
PROJECT #:	47-160

SHEET TITLE
MOUNTING
DETAILS

SHEET NUMBER
C-8A



January 13, 2016

Mr. Dennis Murphy
Terra Consulting Group, Ltd.
600 Busse Highway
2nd Floor
Park Ridge, IL 60068-2568

Re: VZN: NE01 Scottsbluff WT
Terra # 47160
Hutter Trankina # 12093C

Dear Mr. Murphy:

Per your request, we have reviewed the structural impact of the proposed Verizon Wireless equipment (shown below) on the above-referenced site, which is located at 1604 21st Avenue in Scottsbluff, Nebraska. The following antenna loading was considered in the analysis:

Equipment List @ 110'-0"

<u>Equipment</u>	<u>Quantity</u>
Amphenol BXA-80090-6CF	3 (1 per sector)
Commscope SBJAHH-1D65C	6 (2 per sector)
Tower mounted Fiber Distro Box (Raycap RCMDC-3315-PF-48)	3
RRUS-B13 + RRUSA2-B13 Box	3 (1 per sector)
RRUS12-B4 + RRUSA2-B4 Box	3 (1 per sector)
RRUS12-B2 + RRUSA2-B2 Box	3 (1 per sector)
Amphenol RET cable	1
HFT1206-24549 Hybrid Cable	1
7/8" Dia. Coax	9

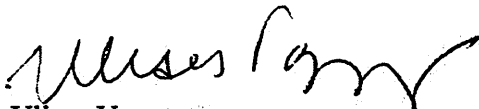
The new cables will be fastened to the face of a tank leg in a single row.

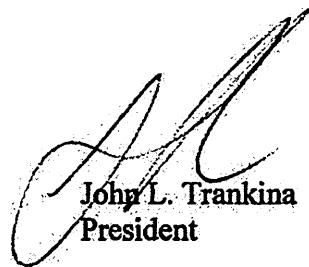
Page 2
January 13, 2016
VZN: NE01 Scottsbluff WT
Terra # 47160
Hutter Trankina # 12093C

Our calculations were based on data provided by a tower mapping report by HighTower Solutions dated 02/27/12. Based on our calculations, the percentage of antenna wind loads on the water tank is less than 10% of the wind loads on the water tank alone. This percentage increase is acceptable per IBC 2009 Code Section 3403.4; therefore, the water tank is acceptable.

Should you have any questions regarding this report or require further analysis, please do not hesitate to contact our office.

Sincerely,


Ulises Vazquez
Project Engineer


John L. Trankina
President

